

# Journal of Business Valuation

2016 Edition



---

THE CANADIAN INSTITUTE *of*  
**CHARTERED  
BUSINESS  
VALUATORS™**

---

# Journal of Business Valuation

2016 Edition



THE CANADIAN INSTITUTE *of*

**CHARTERED  
BUSINESS  
VALUATORS™**



[www.clcbv.ca](http://www.clcbv.ca)

277 Wellington Street West, Suite 710  
Toronto, ON, Canada M5V 3H2

## **THE JOURNAL OF BUSINESS VALUATION**

The Journal of Business Valuation is an annual publication. It is intended to provide research and informed comments on valuation and related fields. The opinions expressed by the individual writers do not necessarily carry the endorsement of the Institute or its Members.

ISBN: 978-0-7798-7638-9

© 2016 The Canadian Institute of Chartered Business Valuators

PRINTED IN CANADA BY THOMSON REUTERS

# LETTER FROM THE EDITOR

This edition of *The Journal of Business Valuation* features papers from industry thought leaders, submitted by our member authors as well as experts from beyond our Institute.

The topics included in this edition are at the forefront of the North American Valuation profession both in theory and practice. Both theoretically rigorous and eminently practical, the articles you will read here are meant to expand your knowledge by keeping you up-to-date with emerging issues in the area.

Readers are reminded that the papers contained in the *Journal of Business Valuation* are not the opinions of the Institute, but rather of the authors who submitted papers for this journal.

I hope you will find this edition both interesting and educational. As always, we welcome your feedback. If you are interested in writing for the journal in the future, you may contact us at [journal@cicbv.ca](mailto:journal@cicbv.ca).

I would like to thank all the authors who submitted papers for consideration and the Institute's volunteers and staff who made this edition possible.

Regards,  
Derek Sanders, CPA, CA, CFA, CBV  
Editor



## TABLE OF CONTENTS

<i>Letter from the Editor</i> . . . . .	iii
VALUATION PRINCIPLES IN THE CONTEXT OF A SHAREHOLDER DISPUTE Patricia Harris, CPA, CA • IFA, CBV, DIFA, CFF . . . . .	1
VALUATION CHALLENGES: THE MANAGEMENT-LED GOING PRIVATE TRANSACTION Blair Roblin, LLB, MBA, CBV, CF . . . . .	15
CBV EXPERT OPINIONS: A CASE STUDY ANALYSIS Judith A. Snider . . . . .	19
NO PROFITS, NO PROBLEM: THE VALUATION OF START-UP TECHNOLOGY FIRMS Oren Bouzaglo Jeff Goldstein . . . . .	21
DISASTER FINANCING: A CONTINGENT VALUATION APPROACH Janek Ratnatunga Ana Sopanah . . . . .	31
BUSINESS VALUATION OF SOCIAL ENTERPRISE: EXPLORING CURRENT UNDERSTANDINGS AND ALTERNATIVES Jackie Csonka-Peeren, MASc, PEng, MBA . . . . .	61



# 1

## VALUATION PRINCIPLES IN THE CONTEXT OF A SHAREHOLDER DISPUTE

by Patricia Harris, CPA, CA • IFA, CBV, DIFA, CFF<sup>1</sup>

### 1.1 Introduction

The Canadian Institute of Chartered Business Valuators (CICBV) is nationally and internationally recognized as the pre-eminent business valuation organization in Canada. The CICBV establishes the practice standards, educational requirements, and ethical guidelines which govern the valuation profession.

With the CICBV's rigorous education requirements, practice standards and ethical guidelines for Chartered Business Valuators (CBVs) in place, it may appear inconsistent when two financial experts have differing opinions as to value. However, disparities in CBVs' opinions result from differences in assumptions, methodology, industry analysis, the use of public market benchmarks, mandate and professional judgment. In summary, differences often stem from the CBV's assessment of the amount and the risk in realizing the business's prospective cash flows.

In this paper, I review key issues that valuers typically assess when preparing a business valuation in the context of a shareholder dispute. Included is an examination of the following valuation concepts and issues with reference to some recent case decisions:

1. Value definition: definitions, explanations and comments
2. Minority discount: applicability and quantum
3. Valuation date: complexities and guidance
4. Type of valuation report: calculation, estimate or comprehensive
5. Approach and valuation methodology
6. Shareholder agreements: impact on value
7. Expert interaction: appraisers and pre-trial valuation expert "hot-tubbing"
8. Mandate: definition and agreement

### 1.2 Value Definition

The definition of value is the foundation upon which a valuator's conclusion is based. Different definitions of value may result in different value conclusions.

Most valuation engagements, regardless of the ultimate value definition utilized, are premised on determining the **going concern value of the business** — the value of a business enterprise that is

---

<sup>1</sup> Patricia Harris, CPA, CA • IFA, CBV, DIFA, CFF, is Partner at Fuller Landau LLP



expected to continue to operate into the future.<sup>2</sup> This is the **enterprise value** of the business which includes both interest bearing debt and equity components (i.e., the value of the business in its entirety — including both the debt holders' and equity holders' interests).

The **equity value** of the business represents the value of a business to its shareholders (i.e., the enterprise value less interest bearing debt<sup>3</sup>).

**Fair market value** is the highest price expressed in terms of cash, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.

Practically speaking (and simplified), the valuator first determines the enterprise value of a business, then deducts the interest bearing debt and equivalents to isolate the equity value of the business with reference to a fair market value definition.

**Fair value**, although not defined in the International Glossary of Business Valuation Terms, is an important value in the context of a shareholder dispute and is generally considered to be the shareholder's pro-rata share of the fair market value of a business (i.e., without reduction for a minority discount<sup>4</sup>).

In a recent case relevant to valuers practicing in the area of shareholder disputes, *Margarita Castillo v. Xela Enterprises Ltd. et al.*, 2015 ONSC 6671 (Ont. S.C.J. [Commercial List]), Margarita Castillo, the applicant, brought an oppression application moving for an order requiring that her minority interest be purchased by the respondents (her father, brother and related entity). Two experienced CBVs provided "quite different" fair market value opinions to the court.<sup>5</sup>

Interestingly, if we refer back to the fair market value definition, the components of that definition often clearly do not apply to the facts of the case. In many shareholder disputes, particularly where a majority will purchase a minority shareholder's interest:

1. The buyer and seller are often specifically identified;
2. The proposed transaction may not be at arm's-length;
3. The market is not open; rather, it is restricted to a buy-out between shareholders;
4. There is a compulsion to buy or sell. Working together may no longer be tenable and one or more shareholders may be compelled to sell his/her interest;
5. There is often an imbalance of power with respect to financing and the parties' knowledge of the business's prospects; and
6. There may be contractual agreements that prescribe value.

In *Margarita Castillo v. Xela Enterprises Ltd.*, *supra*, for example, there was a previous share sale transaction between Margarita's brothers and a holding company (Xela) pertaining to the shares of the company at issue. One of the valuers identified the transaction, but did not rely on it for the purposes of his fair market value analysis on the basis that it involved non-arm's length parties (which does not meet the fair market value definition).

---

2 CICBV Practice Bulletin No. 2, *International Glossary of Business Valuation Terms* (developed by The American Institute of Certified Public Accountants, The American Society of Appraisers, The Canadian Institute of Chartered Business Valuators, The National Association of Certified Valuation Analysts and The Institute of Business Appraisers).

3 The definitions provided are for explanatory purposes in the context of this paper and are not to be considered an analysis of all of the component inputs of a valuation exercise.

4 A minority discount is the reduction from the pro rata portion of a minority shareholding to reflect lack of operational and strategic control, inherent lack of liquidity, etc. Also of note is that in relatively rare circumstances, premiums have been added and included in the value of a minorities' pro-rata shareholding.

5 The applicant's expert valued the minority shareholders' shares as between \$5.2 and \$5.6 million, whereas the respondent's expert valued her shares as either \$900,000 or \$2.6 million (depending on the applicability of a particular adjustment).

At paragraph 72 of *Margarita Castillo v. Xela*, the Honourable Justice Newbould states “fair value is not the same as fair market value, but rather is a value based on principles of equity.” Further, at paragraph 78 of the decision, his Honour observes that although the previous share sale transaction between the brothers and Xela may not meet the definition of a fair market value analysis, it does not prevent the use of this amount from being considered “...in what is a fair and just amount to be paid to Margarita...”

CBVs must consider the facts of the case, precedent case law, valuation theory and practice standards all under the overriding principle that our duty is to provide the court with a relevant, independent and objective opinion of value. Certainly, the determination of what is “fair” or “just” or even “relevant” is not the role of the valuator; it is the role of the court. It is also the court that will ultimately determine value (based, in part, on the expert opinion of valuers).

In *Smiechowski v. Preece*, 2014 ABQB 272, 2014 CarswellAlta 1145 (Alta. Q.B.), paragraphs 71 and 73, the Honourable Justice S.L. Hunt McDonald states that: “There is very little statutory guidance on the meaning of ‘fair market value’” and “Fair market value is a value to be determined by the court on a case-by-case basis, as there is no single method of calculation.”

As financial experts, however, it is not sufficient to simply provide a “laundry list” of what might be relevant for the court to determine fair value. As valuation professionals in the context of a shareholder dispute, it is essential that we not only set out the relevant financial considerations in our reports, but we must also reference how those financial considerations may impact value. A valuator uses professional judgment to consider information that may be relevant in value determination, even if the information may not be consistent with a fair market value definition.

The *Margarita Castillo v. Xela* decision notes other cases that are a good reference point for valuers with respect to the issue of value, including *Glass v. 618717 Ontario Inc.*, 2012 ONSC 535 (Ont. S.C.J.); *R. v. Towne Cinema Theatres Ltd.*, 1985 CanLII 75, [1985] 1 S.C.R. 494 (S.C.C.); *Connor v. The Queen*, [1979] C.T.C. 365, 79 D.T.C. 5256 (F.C.A.); *Muscillo v. Bulk Transfer Systems Inc.*, 2010 ONSC 490 (Ont. S.C.J. [Commercial List]; and *Brant Investments Ltd. et al. v. KeepRite Inc. et al.*, 1987 CanLII 4366, 60 O.R. (2d) 737 (Ont. H.C.), affirmed 1991 CanLII 2705, 3 O.R. (3d) 289 (Ont. C.A.). In addition, valuers must be aware of the “one true rule”<sup>6</sup> as set out in *Cyprus Anvil Mining Corp. v. Dickson*, 1986 CanLII 811, 33 D.L.R. (4th) 641 (B.C. C.A.), paragraph 51.

### 1.3 Minority Discount

There is a significant amount of literature related to the discussion of minority discounts. As a brief overview, a minority discount represents an amount or percentage deducted from the pro rata share of value of 100% of an equity interest in a business to reflect the absence of some or all of the powers of control.<sup>7</sup> The discount reflects the following disadvantages of owning a minority shareholding and the absence of the control, including lack of control over the following:

1. Business decisions
2. The election of the majority of the Board of Directors
3. Dividend policy
4. Remuneration policy
5. Decisions concerning tax planning (i.e. bonuses, etc.)

<sup>6</sup> *Cyprus v. Dickson*, paragraph 51, “The one true rule is to consider all the evidence that might be helpful, and to consider the particular factors in the particular case, and to exercise the best judgment that can be brought to bear on all the evidence and all the factors. I emphasize: it is a question of judgment. No apology need be offered for that. Parliament has decreed that fair value be determined by the courts and not by a formula that can be stated in the legislation.”

<sup>7</sup> See CICBV Practice Bulletin No. 2, *International Glossary of Business Valuation Terms* (minority discount and discount for lack of control).

All of the above, from a valuator's perspective, can have an impact on assessing fair market value (i.e., the "highest price available" for a minority shareholder's interest). The discount reflects the limited external demand for a minority shareholding having regard to the above disadvantages balanced with reference to statutory minority shareholder rights.<sup>8</sup>

The quantum of a minority discount (if any) may be influenced by:

1. The applicable statutory rights and extent of the holding.
2. The degree of motivation of the purchaser and seller to transact (if a seller is motivated to sell, the discount may be higher and if the purchaser is motivated to buy, the discount may be lower, all else being equal).
3. The relationship between the shareholders (an ongoing relationship may reduce the discount).
4. The shareholder's involvement in the business (the greater the minority shareholder's involvement, the lower the discount).
5. The dividend yield on the shares (the greater the dividends with a payment history, the lower the discount).

As stated earlier, in the case of an open market price, a discount may only be established through negotiation. The range of minority discount that may actually be negotiated is so broad as to not be meaningful (0% to 75%, for example); however, we typically observe the application of minority discounts, applied in a notional context, in the range of 10% to 40%.

As noted earlier, if a minority shareholder is oppressed, a minority discount will almost certainly not be applied by the court. However, the issues of oppression and value are often not bifurcated, but tried together. As such, valuations often consider the issue of minority discount when preparing a valuation in the context of litigation.

In *Margarita Castillo v. Xela*, for example, counsel for the respondents contended that a minority discount should be applied to Margarita's minority shareholding. However, because Justice Newbould found that the actions of the respondents were oppressive, no minority discount was applied, for reasons noted in paragraph 104, as follows:

1. Normally in a family situation in which one side is required to buy out the other at fair value, no minority discount is ordered  
AND
2. Xela had previously purchased the shares of the brothers without the application of minority discount.

The decision in *Pilch v. TemboSocial Inc.*, 2014 ONSC 5590 (Ont. S.C.J.) is an important read for valuers practicing in the area of shareholder dispute valuations. In that case, Lawrence Pilch and Rhonda Feldman collectively owned a 25% shareholding in TemboSocial. Lawrence Pilch was an employee. He was dismissed and sought relief under the *Canada Business Corporations Act*. The parties negotiated a consent order requiring (among other things) that the respondents must purchase Pilch's shares at "the value" determined by the court. There was an agreement between the parties that the issue of the application of minority discount was to be argued at trial.

Again, two experienced CBVs opined on value in *Pilch v. TemboSocial*, both utilizing the fair market value definition of value. The expert for the applicant was instructed not to consider the issue of minority discount, whereas the expert for the respondent determined that a minority discount would be in the range of 20% to 30%, if applicable.

---

<sup>8</sup> This paper does not, nor is it intended to, add to the volume of discussion of the nuances, differentiation and interrelationship of minority discounts and marketability discounts but is intended only to provide background. Also of note is the concept of "nuisance value" which relates to the incremental price that a controlling purchaser may pay to buy out a minority shareholder. Typically, nuisance value is paid if a minority shareholder is blocking a sale of the business or if there are conflicts in personalities.

At paragraph 50 of the decision, the Honourable Justice Brown states:

A minority discount reduces the price attached to minority shares because they do not represent control of the corporation. Where, however, a court directs the compulsory purchase of shares by existing shareholders who thereby consolidate their existing shareholdings — such as in dissent, appraisal, winding-up and compulsory purchases under the oppression remedy — the rationale for a minority discount does not apply.

Although there was no judicial finding of oppression, his Honour found that, given that the respondents were ordered to purchase Pilch's shares, and subsequent to the purchase, the respondents would end up owning all the shares of TemboSocial, his Honour concluded in paragraph 54 that "the two-step valuation approach set out in the *Diligenti* case<sup>9</sup> should apply and that no minority discount should be used to determine the value of the Pilch shares."

As such, even though there was no judicial oppression found in *Pilch v. TemboSocial*, no minority discount was found to apply because the buyer was identified and the minority shares that were being purchased did not come burdened with lack of control issues (considering that the purchasers already had control of the company).

Based on a review of case law, it appears uncommon for the court to apply a minority discount within the context of a shareholder dispute including family members or other closely-held scenarios, notwithstanding that in an open market, a minority discount would typically factor into negotiations (in an open and unrestricted market between arm's length parties). The basis for this appears to be that the purchaser and seller of the shares are known and the buyer is generally the majority controlling shareholder subsequent to the purchase who is simply supplementing or consolidating his equity position.

Notwithstanding the above, and with reference to the earlier discussion in this paper, the valuator may still set out the financial considerations that impact the application of a minority discount, unless instructed by counsel not to do so, if utilizing a fair market value definition. Setting out the factors that may influence a minority discount may assist the court in its ultimate determination of what is relevant, and what is fair value.

Consider this simple example: In 2012, a minority shareholder purchased a 25% interest in a business for \$200,000. No formal valuation was undertaken as a pre-condition to the purchase. Assume that both parties believed that the business's equity value was \$1,000,000. Further, assume that all of the conditions of fair market value were present. The underlying purchase, although not explicitly discussed, reflected a 20% or \$50,000 minority discount [ $\$1,000,000 \times 25\% = \$250,000 \times (1 - 80\%) = \$50,000$ ].

What if, in 2016 the minority shareholder claims oppression? Assume that the business's equity value continues to be \$1,000,000 supported by a valuation report. Without a minority discount applied, the minority shareholder would receive a buyout of \$250,000 — what could be considered to be a windfall of \$50,000.

It is possible that the application of a minority discount may be required in order to fairly reflect the value of a minority shareholder's interest. If the minority shareholder's interest was previously acquired with reference to a minority discount, a court may find that it is likewise fair to reflect a minority discount to value the interest in a way consistent with that under which it was acquired. Fairness is ultimately the court's determination.

---

<sup>9</sup> In summary, in *Diligenti v. RWMD Operations Kelowna Ltd.*, 1977 CanLII 393 (B.C. S.C.), it is noted that the first step is to value the shares under a Fair Market Value definition and the second step is to look at who the purchasers are and what price is fair in the circumstances.

## 1.4 Valuation Date

A valuation date is the specific point in time as of which the valuator's opinion of value applies.

Whereas valuation is point in time specific, litigation is not. There may be a continuum of business, economic and industry changing circumstances. As such, the fair market value of a business may vary greatly during the course of the dispute and litigation. Relevant valuation dates may include the date when a minority shareholder left employment of the business, the date an application or claim is filed, or the current date (which may approximate the trial date or when the actual buy-out is ordered to occur).

If the issue of the valuation date is not agreed among the parties prior to the preparation and exchange of expert reports, valuers may be engaged to prepare a report with valuation conclusions at two or more valuation dates. In any event, information related to the increase or decrease in value may be helpful for the court in its determination of what is "fair" at the determined valuation date. Take, for example, a business that continues to flourish without one of the shareholders, or alternatively, the business deteriorates in value subsequent to the shareholder's departure. This information may be of assistance to the court not only for value determination, but for other legal issues before the court as well.

In *Zhao v. Zhao*, 2016 ONSC 2469 (Ont. S.C.J.), it was held that the valuation date was the date that was the triggering event of the dispute (i.e., when one shareholder was told he was no longer required to be an employee of the business).

In *1043325 Ontario Ltd. v. CSA Building Sciences Western Ltd.*, 2015 BCSC 1160, paragraph 15, the Honourable Justice J. Sigurdson decided:

As to the appropriate date for valuation, Pitfield J. noted in *Discovery Enterprises Inc. v. Ebco Industries Ltd.*, 2002 BCSC 1236 at para. 228 that "It is settled law that unless the result is unfair in the circumstances, the appropriate date for the valuation of relief is the date of filing the petition seeking relief under [then s. 200] of the Company Act."

Justice Sigurdson further stated at paragraphs 24 and 25 that:

Generally, I would think that the oppressive majority should be bound by the valuation as at the petition date where the appropriate remedy is a buyout and that any increase or decrease should generally not accrue to the petitioner. I think that is particularly so in this case. While the petitioner seeks to have prior excessive fees taken into consideration and shared, the respondents say that financial downturns should also be shared. Both arguments in this case suggest that the usual date at the time of the petition is the fair one.

In *Smiechowski v. Preece*, 2014 ABQB 272 (Alta. Q.B.),<sup>10</sup> the Honourable Madam Justice S.L. Hunt McDonald at paragraph 75 states:

In deciding the fair market value of Advantage's shares, I accept the valuation date used by the parties of September 30, 2012, which was the end of the month in which Mr. Preece ceased to be an Advantage employee.

In summary, the valuation date is a key component of a business valuator's mandate, as there may be significant variations in value. On one hand, if the valuation date is either determined by the court or agreed to by the parties prior to the preparation of the expert report, litigation costs may be reduced; on the other hand, details surrounding the valuation date determination may ultimately assist the court in the ultimate determination of what may be a fair buyout price.

<sup>10</sup> The decision in *Smiechowski v. Preece* was overturned on appeal (as discussed further in this paper in the section regarding shareholder agreements).

## 1.5 Type of Valuation Report

Section 15 to the CICBV's *Practice Bulletin*, "Guidance on Types of Valuation Reports"<sup>11</sup> sets out considerations that may be relevant in assessing the suitability of a particular type of valuation report. A brief description of the scopes of work is as follows:

### *Calculation Valuation Report:*

The required extent of review, analysis and corroboration of economic, industry and company-specific information and factors in respect of a Calculation Valuation Report may be very limited. The scope of work in these engagements requires the gathering of valuation research and the application of valuation techniques and methodologies based on information that may be very limited and that may not have been corroborated by the Valuator. Valuers in such circumstances may reasonably not be aware of information or factors that could affect the conclusions reached to an extent that may be significant. Calculation Valuation Reports provide the lowest level of assurance.

### *Estimate Valuation Report:*

In comparison to a Comprehensive Valuation Report, Estimate Valuation Reports may be based on a more limited review, analysis and corroboration of economic, industry and company-specific information and factors giving consideration to the purpose of the valuation engagement, taking into consideration the cost of expanding the extent of such review, analysis and corroboration in comparison to the added assurance that will be achieved and the need for such assurance. The scope of work undertaken to support the conclusions of Estimate Valuation Reports normally includes review and analysis of economic, industry and other factors that could significantly affect the conclusions reached.

### *Comprehensive Valuation Report:*

In completing a valuation analysis that is suitable for a Comprehensive Valuation Report, the Valuator must use reasonable efforts to obtain, review, analyze and consider all available information and factors that could have a significant effect on the conclusions reached. Further, this information should be corroborated using reasonable efforts to determine whether it can be relied upon for purposes of arriving at a valuation conclusion. Comprehensive Valuation Reports provide the highest level of assurance.

As set out above, the Comprehensive Valuation Report provides the highest level of assurance and generally would be the preference of CBVs testifying with respect to his or her report because more and deeper analysis would have been conducted. Practically speaking, costs or scope limitations may necessitate that an Estimate or Calculation Valuation Report be prepared.

The valuation profession is self-regulating and valuation conclusions are based on professional judgment. There is no formula or rule that dictates the level of report required, only guidance. The level of valuation report provided is a matter of the agreed upon mandate. Generally, in settlement discussions, an Estimate Valuation Report may be considered by counsel to be sufficient, often with the valuator's caveat that the report may be upgraded to a Comprehensive Report if the case proceeds to trial, if agreed upon and if the valuator is engaged to do so.

In *Pilch v. TemboSocial*, the experts prepared Comprehensive Valuation Reports. In *Magarita Castillo v. Xela*, and *Zhao v. Zhao*, the type of valuation report prepared was not identified.<sup>12</sup> In *Smiechowski v.*

<sup>11</sup> CICBV website, <https://cicbv.ca/practice-bulletins-2/>.

<sup>12</sup> There are numerous matrimonial case decisions that refer to the acceptance of a Calculation Valuation Report as expert evidence.



Preece, 2014 ABQB 272, a Calculation Valuation Report was considered by the Honourable Madam Justice S.L. Hunt McDonald; however, at paragraph 91, Justice Hunt McDonald states that she found the accountant's

explanations and overview of Advantage's financial statements to be helpful. However, he is not an expert in business valuations, and accordingly, his evidence was of limited assistance in determining a fair market value for the shares of Advantage.

Practically, counsel may not want to tender an Estimate Valuation Report if opposing counsel's expert has prepared a Comprehensive Valuation Report. However, as valuations (and the extent of work prepared for each level of report) is based on professional judgment, it is up to the court to determine the extent to which the valuation report is relied upon, regardless of the level of report prescribed by the CICBV.

In a shareholder dispute valuation, the valuator is often hindered by not having direct and unencumbered access to all of the shareholders. It is up to the CBV's professional judgment with reference to the CICBV Practice Standards to determine if sufficient investigation or research has been conducted in order to issue a Comprehensive Report under any scope limitations.

No matter which level of report is prepared, ultimately it comes down to the court's assessment of the opinion provided. It is the CBV's duty to the court to fully set out the documents reviewed, the methodology implemented and any limitations related to his or her valuation conclusion in accordance with CICBV Practice Standards.<sup>13</sup>

## 1.6 Approach and Valuation Methodology

Within the context of a shareholders' dispute, most approaches consider that the business is a going concern<sup>14</sup> as at the Valuation Date. Methodologies are categorized into income, market and asset approaches.<sup>15</sup>

An income methodology was utilized in each of *Pilch v. TemboSocial*, *Zhao v. Zhao*, *Smiechowski v. Preece*, *Sherk v. Sherk*, 2015 CarswellOnt 20801, 2015 ONSC 7213 (Ont. S.C.J.), and *Margarita Castillo v. Xela*.

For the purposes of this paper, I will focus on the capitalized cash flow methodology, wherein a multiple<sup>16</sup> is applied to maintainable ongoing cash flow or EBITDA<sup>17</sup> ("maintainable cash flow"), to determine Enterprise Value. From enterprise value, debt is deducted and the value of redundant assets is added.

<sup>13</sup> Refer to the CICBV website for practice standards and guidance.

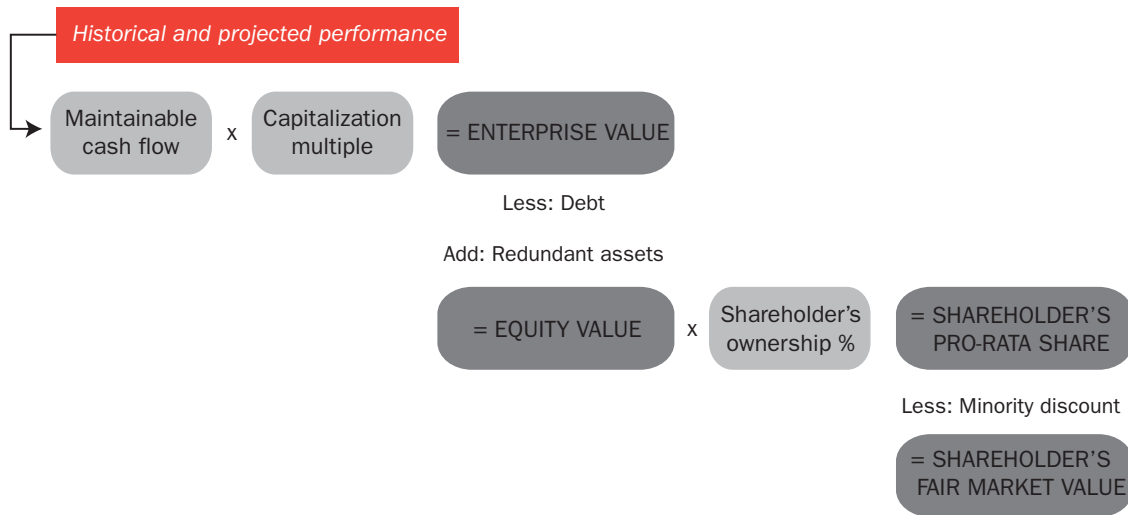
<sup>14</sup> A going concern is an ongoing operating business enterprise.

<sup>15</sup> Income based methods estimate the future expected earnings/cash flows of a company either on a capitalized or discounted basis, while market based methods estimate fair market value by analyzing and applying market transactions to the company's actual transactions. Asset based methodologies use the current or adjusted book value of the company's net tangible assets in determination of value.

<sup>16</sup> The multiple is the inverse of a capitalization rate, reflecting the risk faced by a company in earning the ongoing cash flows. The International Glossary of Business Valuation terms definition of capitalization factor is "any multiple or divisor used to convert anticipated economic benefits of a single period into value."

<sup>17</sup> EBITDA is earnings before interest, tax, depreciation and amortization.

A simple illustration of the mechanics of a capitalized cash flow methodology<sup>18</sup> is as follows:



Differences in a valuator's conclusion may be caused by differences in, among each or all of the below factors:<sup>19</sup>

1. The *normalization adjustments* made to historical earnings
2. The *fiscal year weighting* of the company's historical earnings performance
3. The *capitalization multiple* applied

### 1.6.1 Normalization Adjustments

In *Pilch v. TemboSocial*, normalization adjustments differed between valuers. The valuator for the applicant contended that professional fees for recruiting costs in the fiscal year closest to the valuation date were non-recurring in nature (and thereby calculated a higher maintainable cash flow based on lower annualized professional fees in consideration of those fees in earlier years).<sup>20</sup>

The valuation expert for the respondent estimated recruitment fees based on information provided by management estimates. In determining a level of professional fees, the Honourable Justice D. M. Brown at paragraph 21 states, "...on this issue one is entering into the murky realm where valuation is more art than science."

The estimate of maintainable cash flow requires significant professional judgment, particularly because maintainable cash flow represents, after a review of all of the items in the CBV's scope of review, what the valuator considers to be a best estimate of what will happen subsequent to the valuation date, without the use of hindsight.

In *Pilch v. TemboSocial*, his Honour adjusted and thereby normalized the professional fees in an amount not specifically put forward by either expert, but by taking components of each which was an amount, that presumably, his Honour considered to be fair, using judgment and given the evidence before him.

<sup>18</sup> For a detailed explanation of the Capitalized Cash Flow methodology, see Chapter 5 of Howard E. Johnson, *Business Valuation* (Toronto, The Canadian Institute of Chartered Accountants, 2012).

<sup>19</sup> The extent of redundant assets included in equity value is also an area of differences, for example.

<sup>20</sup> The implication is that less fees result in higher normalized earnings, and as such higher value.



### 1.6.2 Fiscal Year Weighting

The valuator generally will examine at least a few fiscal years prior to the valuation date in the determination of maintainable cash flow, generally relying more heavily on recent historical performance and management forecasts (if available and reliable).

Assessment of historical financial data as a predictor of future performance (if appropriate in the circumstances), all else being equal, works best with more (vs. fewer) fiscal years assessed. The key with valuation analysis of prior fiscal years' data is to ensure relevance. Fiscal year weighting of historical maintainable cash flow could be a range of one to five fiscal years, or more, in some circumstances.

The decision in *Pilch v. TemboSocial*, for example, weighted the most current two full fiscal years and a partial fiscal year up to the valuation date. The fiscal year weighting is also a matter of the valuator's professional judgment.

### 1.6.3 Capitalization Multiple

The lower the multiple, the higher the valuator's assessment of the risk to the business in earning maintainable cash flow. Certain components to the determination of the capitalization multiple utilized have generally acceptable benchmarks (for example, risk free rates, and equity risk premia). The determination of the capitalization multiple is of significant importance to the valuation and is matter of the valuator's professional judgment.

In *Margarita Castillo v. Xela*, the applicant's valuator applied a capitalization multiple of 5 to 6 times maintainable cash flow, while the other valuator applied a capitalization multiple of 3.4 to 4.7 times. In paragraph 102 of the decision his Honour provides a calculation of value using the multiple of the *respondent's valuator* applied to the maintainable cash flow as calculated by the *applicant's valuator*. There was reliance on both valuations for different components of the calculation. Ultimately, the value conclusion found by the Honourable Justice Newbould was within that range.

It is important to note that CBVs typically include a statement within the valuation report to the effect of "*The report must be considered in its entirety. The preparation of our report is a complete process and is not necessarily susceptible to partial analysis. Selecting only portions of our report or some of the factors considered, without considering all components and factors together, could create an inaccurate view of our findings.*"

In *Zhao v. Zhao*, the multiples used by the valuations differed significantly. As set out in paragraph 233 of the decision, differences in the calculation resulted from differences in "(1) the size premium; (2) the company specific risk premium; (3) the debt to equity weighting; and (4) the growth factor."

Recent cases illustrate that differences between valuations result generally not from the methodology implemented, but in the application of the methodology (the determination of maintainable cash flow, the capitalization multiple and the redundant assets). As noted above, the court has, in some recent cases, approached its ultimate valuation determination by utilizing components of the reports or evidence of both valuation experts.

## 1.7 Shareholders' Agreements: Impact on Value

A shareholders' agreement is a contractual arrangement among shareholders setting out, among other things shareholder rights and obligations, methods for determining compensation, and dispute

resolution. In addition, a shareholders' agreement may set out a methodology for calculating the price at which the shares of a shareholder must be purchased under various conditions.

The *Sherk v. Sherk* case details the adherence to process with respect to disagreements regarding the valuation of a shareholder's interest. In that case, two brothers each owned 50% of an insurance company. The shareholders' agreement included a provision that, in order to determine fair market value, either brother was entitled to obtain an opinion from a first appraiser. If there was a dispute with the value, the other brother was likewise entitled to obtain an opinion from a second appraiser. The shareholders' agreement also provided that,

In the event that opinion of the second appraiser differs by more than Ten Percent from the opinion of the first appraiser a third appraisal, from an appraiser selected by the first two appraisers, shall be obtained...

Each brother obtained a valuation report, one determining fair market value to be \$6,100,000 (and \$4,100,000 assuming an absence of a non-competition covenant) and the other report determining fair market value to be \$9,630,000. A third valuator was jointly retained by the brothers, determining a range of values of approximately \$7,291,000 to \$8,030,500 based on varying assumptions with respect to a non-competition covenant and minority discount.

Ultimately, His Honour Justice Turnbull concluded at paragraph 33, "In my view based on the reports before the court, the approximate value of Richard's shares at valuation day is \$7,500,000."

In *Smiechowski v. Preece* (later appealed, as described below), there was a dispute over the wording of the shareholders' agreement and qualifications of the author of the share valuation.

While the plaintiff and defendant each engaged an expert, the plaintiff also engaged a Chartered Accountant, a partner of the accounting firm that prepared the company's annual financial statements.

As noted in the decision at paragraph 69, Schedule A of the shareholders' agreement "...requires that any evaluation made by an accountant pursuant to this Schedule shall be based on the fair market value of each share being sold..."

Further, Schedule A provided that, "the purchase price shall be determined conclusively by the accountants of the Corporation applying generally accepted accounting principles." Schedule A outlined the methodology under which the determination of fair market value of the shares was to be undertaken (paragraph 82 of the decision).

This case highlights the differences of fair market value definition within a shareholders' agreement and that of the standard valuation practices as provided by qualified experts. In paragraph 135, the Honorable Madam Justice Hunt McDonald states:

I find that the USA [Unanimous Shareholders' Agreement] requires any valuation to be for "fair market value." However, the valuation methodology set out in the USA does not follow standard business valuation practices and, in order to determine the fair market value of the shares of Advantage, it is necessary that I do not follow the requirements in Schedule A.

Her Honour concludes that although the accountant follows the terms of the shareholders' agreement, his value per share is not fair market value. As such, Justice McDonald decides on value based on the approach and value determined by the plaintiff's expert.

The decision of the Honourable Madam Justice Hunt McDonald was successfully appealed in *Smiechowski v. Preece*, 2015 ABCA 105 (Alta. C.A.). More specifically, the appellate court held that while the accountant was not a qualified expert, he did in fact follow the provisions set out in the shareholders' agreement regarding the formula for fair market value. Further, there were no specifications regarding the specialized qualifications of the author of the report on valuations.

As the appellate court sets out in the decision at paragraphs 6 and 7:

The trial judge declined to accept Mr. Creelman's valuation because he was not a Chartered Business Valuator. The parties could have specified that the value was to be set by an independent Chartered Business Valuator. They could have specified that the value set by the corporation's accountant was not conclusive, and could be challenged. They could have specified that certain minimum valuation standards would be met, beyond those in item 6 of Schedule "A". The contract is, however, clear. Provisions of this sort are designed to provide certainty to the parties, and avoid the very kind of litigation that has resulted here.

...While the trial judge preferred the opinions of the expert witnesses, the discretion over choosing which multiplier to use, and which income figures to take off the company's statements (as prepared in accordance with GAAP) was with Mr. Creelman. Since no one suggests that his valuation was prepared in bad faith, there was no basis for the trial judge to substitute the opinions of the expert witnesses.

The court maintains jurisdiction and discretion as to whether any specific provisions of a shareholders' agreement is enforceable. It is the valuator's responsibility to review shareholders' agreements that are relevant to the valuation exercise. Even though the mandate may be to determine value under a different value term, it may be helpful to the court to understand and consider the terms related to valuation within the shareholders' agreement.

In addition, it is incumbent upon the valuator to ask for details of any transactions for the entity's shares within proximity to the valuation date (based upon professional judgment), including transactions between shareholders.

## **1.8 Expert Interaction: Reliance on Other Experts and Pre-Trial Valuation Expert Hot-Tubbing**

A CBV may encounter, rely upon and provide comments regarding the work of other experts in the context of his or her engagement related to a shareholder dispute.

The CICBV Standard No. 120, *Scope of Work Standards and Recommendations* states, "The Valuator shall consider the necessity of relying upon the work of a specialist, for example, real estate appraisers, engineers, or equipment appraisers."<sup>21</sup>

If the findings of appraisers or other experts that form underlying components of the share valuation are agreed to prior to the preparation of the valuation report, matters may be simplified.

Pre-trial "hot-tubbing" occurs when experts meet prior to trial to potentially resolve differences or set out the differences and the reasons for those differences. This meeting may facilitate settlement or assist the court at trial.<sup>22</sup>

In *Bimman v. Neiman*, 2015 ONSC 2313 (Ont. S.C.J.), the valuers each relied on separate real estate appraisers and actuaries. There were three levels of "hot-tubbing" — the appraisers, the actuaries and the valuers of both parties met prior to the trial.

21 CICBV Standard 120 also provides a "(Recommendation: if it is deemed appropriate to request the assistance of a specialist, the Valuator should obtain reasonable assurance concerning the specialist's reputation for competence and degree of independence.) (Explanatory comment: the appropriateness and reasonableness of the assumptions and methods used by the specialist are the responsibility of the specialist...)"

22 Under the Ontario *Rules of Civil Procedure*, 20.05(2)(k), the court may give direction or stipulate that experts meet on a without prejudice basis before trial.

At paragraph 163, the Honourable Justice Gans states:

At my suggestion, the three sets of experts, namely the Actuaries, Real Estate Appraisers and Business Valuers, met or spoke to discuss their respective reports, without counsel, in an effort to determine whether there was any congruence of opinion and to what level their points of divergence could be clarified. Mercifully, the actuarial conclusions were agreed to. This left me ultimately to decide a question of law, one which I have deferred to the back end of these reasons.

In *Karrys v. Karrys*, 2014 ONSC 713 (Ont. S.C.J.), at paragraph 19, the Honourable Justice D.M. Brown noted that there were material differences between the experts, and ordered the experts,

...to meet, in the absence of counsel, and to prepare a joint statement, signed by both of them, which clearly:

- (i) identifies their areas of agreement;
- (ii) identifies their areas of disagreement; and,
- (iii) explains in detail the reasons for any disagreements in their opinions.

In *Glass v. 618717 Ontario Inc.*, 2012 ONSC 535 (Ont. S.C.J.), the valuers prepared a joint statement “identifying areas of disagreement and the financial implications of those disagreements.”

Whether ordered by the court or undertaken voluntarily by the parties, pre-trial “hot-tubbing” of valuers appears to be a sound course of action. If experts can at least clearly set out their differences and the reasons for those differences, this process should increase efficiency in the litigation process and otherwise assist the court.

## **1.9 Mandate: Definition and Agreement**

An important component of any valuation engagement is the definition of the mandate. With respect to a shareholder dispute valuation, details will generally include the shares to be valued, the valuation date(s), the share percentage to be valued, the specific definition of value (possibly with reference to the shareholders’ agreement), and if a minority discount will be considered.

It is a matter for the CBV to determine the necessity of an engagement letter. However, setting out a detailed mandate in a shareholder dispute valuation is important, particularly in a joint or court appointed retainer, so as to create a uniform understanding of the engagement.

## **1.10 Conclusion**

The basis of the preparation of a valuation in the context of a shareholder dispute is a complex area of practice. Our work is “more art than science” on multiple levels. First, the valuator works within the guidance and standards of the CICBV, applying definitions of value that may have hypothetical conditions that are inapplicable to the case facts. Second, we must balance providing all of the relevant information to the court, deciphering the information, applying expertise and providing an opinion on value, with the view to assisting the court in its determination of fair value.

No doubt, Chartered Business Valuers working in the area of shareholder dispute valuations must appreciate that, despite being paid by a litigant, first and foremost our duty is to the court to provide evidence that is fair, objective and non-partisan.



# 2

## VALUATION CHALLENGES: THE MANAGEMENT-LED GOING PRIVATE TRANSACTION

by Blair Roblin, LLB, MBA, CBV, CF<sup>1</sup>

In the valuation community, we are all aware of small public companies that really do not belong in the public markets. Periodically, we see such firms undertaking the process of going private but it is not always an easy feat — in terms of meeting the needs of all shareholders it is a bit like coaxing a genie back into the bottle. My focus in this article is the situation where management is attempting to take control of the firm, whether with a financial partner or not, by buying out minority shareholders. In theory, going private transactions can be good for three parties: the minority shareholders who gain liquidity through the process; the company whose characteristics do not fit the public markets; and management who can spend more of their time managing the business. These transactions have both procedural and valuation challenges. I am concerned here with the latter, though the two are often related.

### 2.1 The Situation

The following are some of the more common issues that lead management to consider a going private transaction:

- A **depressed share price**, however arbitrary, is a constant reminder to management and shareholders that the investment is not performing.
- **The legal and regulatory environment** facing public companies is challenging, and directors and officers are exposed to litigation, even if unfounded. Regulatory disclosure and oversight requirements have become more onerous ever since the introduction of Sarbanes-Oxley (and its international equivalents).
- The **fixed costs** associated with being public are particularly daunting for smaller firms. These include the costs of completing financial statements and MD&As; holding annual meetings; keeping up with regulatory filings; compensating directors, lawyers, auditors and investor relations firms; and paying securities regulation fees, exchange fees and insurance premiums for directors and officers.
- Smaller entities often experience **poor liquidity** due to light trading volume and scant analyst coverage or institutional interest. The result is constrained access to financial markets to raise capital and a share price that may not be reflective of value.

---

<sup>1</sup> Blair Roblin, LLB, MBA, CBV, CF is a Managing Director with the Farber Financial Group. Blair has advised clients in a wide variety of business sectors on business valuations, acquisitions, divestitures and other corporate finance matters for over 30 years. He is a previous director of the CICBV and has been an active speaker and instructor on valuation and M&A with numerous educational organizations, including the Schulich School of Business (in both MBA and executive education programs), the Law Society of Upper Canada, the CICBV, Osgoode Hall Law School, Federated Press and Insight Information.

- The **constant distraction** with meeting investor and analyst expectations each quarter can interfere with managing the business to create long-term value.

## 2.2 The Rules

Several legal processes are available to effect a going private transaction. Each results in terminating the interests of some security holders, sometimes without their consent. In Canada, such transactions are normally either take-over bids or squeeze-out mergers, where the latter involve a plan of arrangement, amalgamation, share consolidation or other transaction. For the valuator, going-private transactions are subject to the requirement of both the OSC and the CICBV. The OSC's MI 61-101 requires a formal valuation based on the rationale that insiders are privy to information about the company's business and prospects that other shareholders are not and that the other shareholders should have the benefit of an independent valuation to assess the merits of the bid put forward by management. Section 6.4(2)(d) of MI 61-101 stipulates that the formal valuation not include a downward adjustment to reflect the liquidity of the securities, the effect of the transaction on the securities or the fact that the securities do not form part of a controlling interest.

As regards the CICBV requirements, Appendix A to Standard No. 110 applies to valuation reports that are prepared for the purposes of securities legislation, regulations or policies in the context of non-arm's length transactions, such as going private transactions. For these transactions, the standard lists numerous disclosure items to be addressed, including a comparison of valuation calculations and conclusions arrived at through different methods, a discussion of the rationale for accepting or rejecting each methodology and the relative importance or weighting of relevant methodologies in arriving at a final valuation conclusion.

## 2.3 The Valuation Challenges

The special valuation requirements of the OSC and CICBV for going private transactions stem from issues related to the non-arm's length nature of these transactions. These issues make the job of the valuator more difficult from an informational point of view. Where key management of the business seek to acquire control, they will have at their disposal inside information that relates to the value and prospects of the business, which public shareholders do not share. While an independent committee of directors may be appointed to guard the interests of minority shareholders in the transaction, they too may be at an information disadvantage where they have no day-to-day involvement in the business and rely on information filtered by management. The ability of the valuator to conduct an independent analysis of value will necessarily hinge on the quality and thoroughness of information provided to them by management.

Of course, the concerns underlying the OSC and CICBV rules are not simply the information gap between management and minority shareholders. A potential conflict here arises because the management group have an incentive to purchase at the best possible price, though no real incentive to emphasize the income potential of the business if that would have the effect of increasing the price.

Below, three specific challenges that face the valuator in these situations — and some possible solutions — are considered.

### 2.3.1 Financial projections may be non-existent or lacking in rigour

Financial projections enable valuations by facilitating the discounted cash flow methodology. The DCF is theoretically a sound means of arriving at value, since going concern businesses "are worth what

they can earn.” In practice, of course, estimating future performance is fraught with error and it is perhaps understandable that management is less than willing to provide projections. In the going-private case, there may be a history of under-performance relative to projections. There may even be uncertainty as the strategic direction of the firm or the funding of future operations may be in a state of flux.

From the perspective of management seeking to bid for the shares of the company, there is little incentive to lay out projections that show cash flows increasing steadily into the future, as projections are often apt to do. Where a projection does exist, it is helpful to compare it to previous ones (and to the accuracy of the forecast, albeit with hindsight) to determine whether there is a manifest change in management’s expectations. Where a projection is discernibly less optimistic than previous versions, the valuator should discuss with management what the rationale is for the going private transaction is — i.e., what makes the company attractive as an acquisition for management? There may, in fact, be financial or strategic changes contemplated that have not been feasible within the public company structure.

### **2.3.2 Stock price is not representative of value**

Minority shareholders will always be inclined to measure the bid price in a going private transaction against the current (pre-bid) stock price as well as the original purchase price. Clearly, the original stock price may be of only historical interest, but even the current price may be of little relevance if the stock is thinly traded and not subject to analyst coverage.

Most valuers are adept at valuing private entities, which, by their nature, are valued without appeal to the quoted price of the underlying stock. However, where there is a quoted price for the securities of the firm, the valuator will need to assess whether these prices are at all representative of underlying value and, if not, clearly state why they should be discarded in arriving at value.

### **2.3.3 Normalization adjustments related to the transaction**

Most valuations include some adjustment to normalize the earnings or cash flows of the firm for specific events, accounting practices or changes in business operations. However, normalization adjustments for prospective changes in the company post-transaction are particularly problematic. MI 61-101 6.4(2)(d) states that the valuator should

not include in the formal valuation a downward adjustment to reflect the liquidity of the securities, *the effect of the transaction on the securities* or the fact that the securities do not form part of a controlling interest (italics added).

Removing consideration of the effect of a prospective transaction from the valuation is obviously consistent with point-in-time valuation principles that form a basic tenet of valuation theory. On the other hand, if the company was never well suited to the public markets, an add back to adjust for public company costs is consistent with the rationale by which valuers normalize for practices and events that do not “fit” the company. Here, subsection 6.5(2) of MI 61-101 may be instructive. It deals not with the valuation *per se* but with the information that the company is required to provide to shareholders in the circular. It states that where

an issuer or offeror is required to provide a summary of a formal valuation, the issuer or offeror shall ensure that the summary (a) discloses... (ii) any distinctive material benefit that might accrue to an interested party *as a consequence of the transaction, including the earlier use of available tax losses, lower income taxes, reduced costs or increased revenues* (italics added).



In essence, any benefits or reduced costs that follow from the transaction need to be pointed out to shareholders, even if they might not form part of the valuation. To this end, it may be helpful to shareholders — and to the independent committee tasked with advising them — for the valuator to segregate certain of these items in the valuation and indicate how and to what extent they contribute to (or denigrate from) the value of the company.

## **2.4 Conclusion**

The traditional fair market value definition contains the assumption of a notional transaction “between informed and prudent parties.” Where information about the business and its prospects resides primarily with the party bidding for the shares, this assumption becomes harder to meet. The result is a higher level of diligence, inquiry and critical analysis demanded of the valuator — by minority shareholders, the independent committee and the law.

# 3

## CBV EXPERT OPINIONS: A CASE STUDY ANALYSIS<sup>1</sup>

by Judith A. Snider<sup>2</sup>

Chartered Business Valuators (CBVs) provide valuable services to clients at many junctures in the life of a business. For example, a client will frequently (and wisely) retain a CBV to provide opinions on the acquisition of a business or on entering into a joint venture. In such cases, litigation is far from everyone's mind. When troubles arise and litigation ensues, a CBV is retained to provide litigation support, usually involving giving expert opinions. It is helpful to understand how the different roles of a CBV are viewed by a court.

We must always begin with the rule of evidence that says that opinion evidence is presumptively inadmissible in a court proceeding, subject to a few exceptions. The most important exception is for expert opinion evidence on matters requiring specialized knowledge (for the most recent Supreme Court views on expert evidence, see *White Burgess Langille Inman v. Abbott and Haliburton Co.*, 2015 SCC 23, 470 NR 324 (S.C.C.), at paras. 14-15).

How do the rules of evidence apply to the CBV retained for pre-litigation purposes? When it comes to testifying, what, if any, difference is there between the two types of experts? To what extent will the opinion of a pre-litigation CBV be admissible in a court proceeding? How does rule 53.03 of the *Ontario Rules of Civil Procedure* apply to a pre-litigation expert? We now have the answers to these questions in the Ontario Court of Appeal decision in *Westerhof v. Gee Estate*, 2015 ONCA 206 (Ont. C.A.) (*Westerhof*).

In 2010, Ontario made major amendments to its *Rules of Civil Procedure*. Of particular interest to CBVs, who are retained in a matter that ultimately ends in litigation, were the changes to rule 53.03. Rule 53.03 was amended to ensure that expert testimony comes from appropriately qualified, impartial experts who acknowledge their duty to the court. Rule 53.03(2.1) sets out a detailed list of information that must be contained in an expert report and includes the requirement that experts provide signed acknowledgment of this duty (Form 53). Prior to the 2010 amendments, it was generally accepted that a litigation expert was always obligated to deliver a rule 53 report while a pre-litigation expert (such as the CBV retained to advise on a business transaction) was permitted to be called and provide evidence as a fact witness about a diagnosis or prognosis or opinion concerning the plaintiff, without a rule 53 report.

In *Westerhof*, Mr. Westerhof claimed damages for serious injuries suffered in a car accident. The testimony of medical experts was a central issue. The case raised the question of whether rule 53.03 applies only to experts described in rule 4.1.01 and Form 53 — experts “engaged by or on behalf of a party to provide [opinion] evidence in relation to a proceeding” — or whether it applies more broadly to all witnesses with special expertise who give opinion evidence. Simply put, could

1 The views expressed are my own (or of the little green men who follow me from time to time) and are not intended to be a legal opinion.

2 The Honourable Judith A. Snider is a retired judge of the Federal Court (Canada), an arbitrator and mediator with JAMS ADR Services and a Director of the Canadian Institute of Chartered Business Valuators.

the medical practitioner who treated the plaintiff at the time of his injury give opinion evidence at trial without complying with the requirements of the *Rules of Civil Procedure*?

At trial, the plaintiff put forward as evidence the treating health care provider's diagnosis and prognosis. The trial judge (unreported) held that the treating physician's (pre-litigation) diagnosis and prognosis could not be admitted for the truth of its contents. Even more problematic, the rule 53.03 experts could not refer to the opinions expressed by treating physicians. The Divisional Court essentially agreed that, without a rule 53.03 report, the treating health care practitioner's evidence was limited (*Westerhof v. Gee Estate*, 2013 ONSC 2093).

Fortunately, the Ontario Court of Appeal did not agree. In overturning the lower court decisions, the Court of Appeal applied, in my view, a good measure of common sense. Justice Simmons, writing for the court (at paragraph 60), endorsed the long-standing test for admission of opinion evidence of treating healthcare practitioners:

I conclude that a witness with special skill, knowledge, training or experience who has not been engaged by or on behalf of a party to the litigation may give opinion evidence for the truth of its contents without complying with rule 53.03 where:

- the opinion to be given is based on the witness's observation of or participation in the events in issue; and
- the witness formed the opinion to be given as part of the ordinary exercise of his or her skill, knowledge, training and experience while observing or participating in such events.

While, in the past, the pre-litigation experts or professionals were commonly referred to as "fact" witnesses, Justice Simmons described such a person as a "participant" witness in that he "formed his opinions relevant to the matters at issue while participating in the events as part of the ordinary exercise of his expertise." The participant expert can give opinion evidence that is admissible for its truth without the need to comply with rule 53.03. Justice Simmons also described another type of expert — the "non-party" expert. The non-party expert may also give opinion evidence where the non-party expert has formed a relevant opinion based on personal observation or examinations related to the subject matter of the litigation for a purpose other than the litigation.

With leave to appeal being denied by the Supreme Court on October 29, 2015, the Ontario Court of Appeal decision in *Westerhof* has become the authoritative voice in the area.

I highlight that the *Westerhof* decision is applicable in Ontario. Different jurisdictions may well have different rules. For example, the Alberta *Rules of Court* define an "expert" more widely as "a person who is proposed to give expert opinion evidence." For a recent discussion of what that means for experts and their opinions in Alberta, see *Kon Construction Ltd. v. Terranova Developments Ltd.*, 2015 ABCA 249 (Alta. C.A.) (*Kon*). As recommended by the court in *Kon*, in Alberta, where witnesses with expertise (who are not litigants) "are to testify about events within the scope of their expertise, it is generally prudent to have them formally qualified as expert witnesses."

In sum, in Ontario, "litigation experts" *do* have to comply with rule 53.03, but "participant experts" and "third party experts" *do not*. Participant and third party experts can therefore testify at trial if they have not submitted formal expert reports, although their notes and records can (and no doubt will) be explored through discovery and disclosure.

# 4

## NO PROFITS, NO PROBLEM: THE VALUATION OF START-UP TECHNOLOGY FIRMS

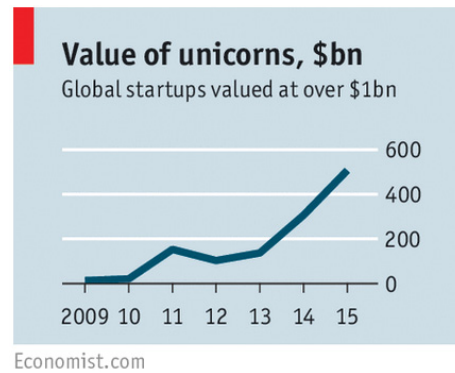
by Oren Bouzaglo<sup>1</sup> and Jeff Goldstein<sup>2</sup>

North American markets have experienced relentless growth in start-up company formation. Fueled by venture capital (VC), private equity (PE) and traditionally more defensive institutional investors such as mutual funds, pension funds, and sovereign wealth funds (SWFs), many early-stage technology firms have attained “unicorn” status; valuations of more than \$1 billion. Regulatory developments in North America have also spawned the growth of crowd-funding,<sup>3</sup> which has further expanded the availability of start-up capital to retail investors.

Unicorns span across various segments of the tech industry. They can be found in areas such as eCommerce, SaaS, Social, Big Data and Fintech, and include the likes of Uber, SpaceX, Dropbox, Slack, BuzzFeed and Shazam to name a few. The term unicorn was coined by Aiden Lee of Cowboy Ventures in 2013 and, at the time, there were 39 unicorns globally<sup>4</sup> with only 0.07% of software start-ups founded in the 2000s achieving unicorn status.<sup>5</sup> Today, there are approximately 169 unicorns globally with a cumulative valuation of \$609 billion.<sup>6</sup> Many have yet to generate profits; some have yet to generate revenue.

- 
- 1 Oren is a lawyer and a candidate to the Chartered Business Valuator designation. In his practice, Oren advises clients on various corporate matters including commercial agreements, corporate restructuring and shareholder transactions and disputes. In addition, Oren advises non-residents on Canadian tax matters and structures their Canadian affairs. He can be reached at oren.bouzaglo@gmail.com.
  - 2 An accomplished professional, Jeff is a lawyer who has brought his talents into the business valuation realm. Jeff uses his legal background to provide valuation and litigation support services for complex commercial disputes and for private company valuations. He can be reached at jegoldstein@deloitte.ca.
  - 3 Prive, T. (2012). “What is Crowdfunding and how does it benefit the economy.” *Forbes*. <http://www.forbes.com/sites/tanyaprive/2012/11/27/what-is-crowdfunding-and-how-does-it-benefit-the-economy/#63347bdb4ed4>.
  - 4 Griffith, Erin, and Dan Primack. (2015). “The Age of Unicorns.” *Fortune*. <http://fortune.com/2015/01/22/the-age-of-unicorns/>.
  - 5 Lee, Aileen. (2013). “Welcome To The Unicorn Club: Learning From Billion-Dollar Startups.” *TechCrunch*. <https://techcrunch.com/2013/11/02/welcome-to-the-unicorn-club/>.
  - 6 CB Insights. (2015). “The Complete List of Unicorn Companies.” <https://www.cbinsights.com/research-unicorn-companies>.

Table 1: Unicorn Valuation Growth



The rapid growth in the number of unicorns stems from an abandonment of traditional risk analysis and the use of alternative metrics to justify the lofty valuations. Start-up investors are incentivized to drive up company valuations to achieve unicorn status, enabling the company to employ top talent, acquire large corporate customers, and earn market credibility, among other perks.

While it is seemingly counterintuitive to overvalue a company in order to provide it with the necessary resources to achieve the stated valuation, investors can earn a considerable profit despite the inherent risks associated with overvaluation. Tech investors diversify their portfolios by investing in several start-up companies, knowing that the odds of success of each company are slim. However, if a small portion of their portfolio attains the projected profitability figures, investors can earn huge returns on their portfolios as a whole. As a result, many highly valued start-up technology firms merely serve as a diversification hedge until a future liquidity event allows investors to exit their positions.

This paper will discuss the alternative valuation metrics used by investors to justify \$1 billion+ valuations in start-up companies, terms and conditions included in agreements to protect investors from the devaluations that can result from high valuations, and the impact that new entrants have had on start-up company investing.

## 4.1 Alternative Metrics

Start-up company valuation is often unconventional. Conventional income-based valuation approaches, such as capitalized earnings/cash flows and discounted cash flow (DCF) methodologies are inapplicable due to the uncertainty with respect to if, when, and how much cash flow the company will generate. The same is true for market-based approaches, such as comparable company and precedent transaction analysis, as the trajectory of seemingly comparable start-up companies will likely diverge greatly (i.e., in terms of time for the product to reach market and success thereafter), and several “pivot” their business models in response to industry demands.

Accordingly, investors have adopted alternative measures to objectively verify valuation conclusions. Some of the alternative metrics are outlined below:

Table 2: Alternative Metrics for Valuation of Startups

Conventional Metrics	Alternative Metrics	Alternative Metrics Description
Income	Average Revenue Per User (ARPU)	Measure of revenue generated per user, allows for an analysis at the per-unit level, which can help identify high and low revenue generating products.
Assets	Monthly Active Users (MAU)	Measure of unique users during a specific measurement period, such as within the previous 30 days.
Profit	Burn Rate	The rate at which an enterprise spends money, especially venture capital, in excess of income.
Growth	Churn	The percentage of subscribers to a service that discontinue their subscription to that service over a given period of time.
Contracts	Customer Acquisition Cost	The full cost of acquiring a user. Includes a breakdown of users acquired organically and those acquired through paid marketing.

#### 4.1.1 Case Study — Dissecting a Unicorn Valuation

In 2014, Facebook (FB) acquired WhatsApp, an Internet text and voice communication application. At the time of sale, WhatsApp recorded an operating loss of \$138 million in FY13. Its revenues were \$10.2 million, approximately 3 cents in average revenue per active user on its 400 million active user base.<sup>7</sup>

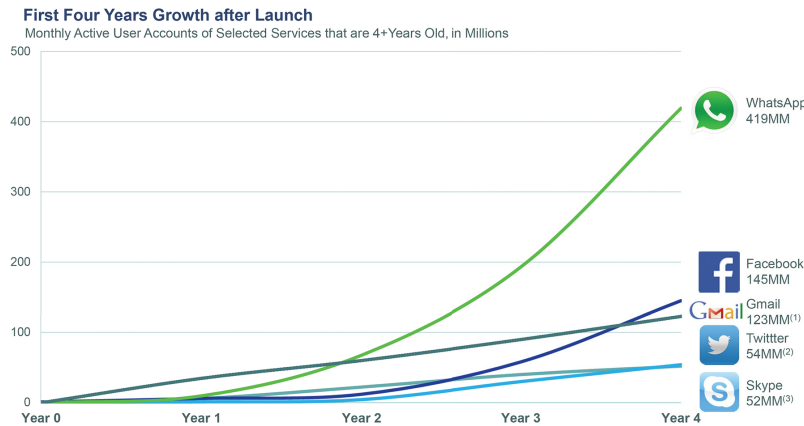
Facebook paid \$22 billion for WhatsApp, equivalent to \$55 per user and 19 times projected sales. How did FB justify this valuation? The first factor was projected growth. Although WhatsApp had 400 million active users at time of sale, its user base was growing at one million users per day, faster than that of its peers, as shown in Table 3 below.<sup>8</sup> On February 1st, 2016, WhatsApp announced that as of then, one billion people were using WhatsApp.<sup>9</sup> The acquisition reflects the potential to monetize such a large and fast growing user base and grow its social communications brand.

7 Frier, S. (2014). "Facebook \$22 Billion WhatsApp deal buys \$10 Million in sales." <http://www.bloomberg.com/news/articles/2014-10-28/facebook-s-22-billion-whatsapp-deal-buys-10-million-in-sales>.

8 Hamburger, E. (2014). "Connect or die: Why Facebook needed WhatsApp." <http://www.theverge.com/2014/2/19/5428022/connect-or-die-why-facebook-needed-whatsapp>.

9 What's App Inc. (2016). "One billion — WhatsApp Blog." <https://blog.whatsapp.com/616/One-billion>.

Table 3: Monthly Active User Growth



Facebook can monetize WhatsApp in several ways. Their initial revenue model was subscription based, charging users \$1 per year after one year of free usage. In early 2016 however, Whatsapp abandoned its subscription-based model, citing free alternatives and users not possessing credit cards as hindrances to its success.

WhatsApp can generate revenue through other sources, including data collection for targeted advertising and third-party service integration into their platform. The company has stated that it plans to introduce new methods to communicate with businesses and organizations that are of interest to its users. This approach is similar to Facebook's strategy to monetize its Messenger application, which, for example, allows users to book an Uber directly through its platform.<sup>10</sup>

Finally, this acquisition reflects Facebook's desire to grow its social communications portfolio and prevent competitors like Apple and Google from gaining market share and dominating the space. After Facebook's failed attempt to acquire Snapchat for \$3 billion, the company has taken impressive strides towards growing this segment of their business, evidenced by this transaction.

#### 4.1.1.1 Deal Structures

Certain provisions contained in subscription agreements are designed to limit investors' exposure to losses resulting from high valuations and may even guarantee a return on investment. These provisions include liquidation preference, anti-dilution, and IPO conversion protection.

#### 4.1.1.2 Liquidation Preference

Liquidation preference obligates a company to repay the principal investment upon the occurrence of a liquidity event (acquisition, liquidation, change of control or other event, as defined in the financing agreement). Terms may provide for additional reimbursement above principal repayment, normally calculated as a multiple of the original purchase price.

Fenwick & West LLP recently conducted a study of 37 U.S. based venture back companies which raised money at valuations of \$1 billion or more in the 12 months preceding March 31st, 2015, and

<sup>10</sup> Collins, K. (2016, January 18). WhatsApp kills \$1 subscription fee. Retrieved July 7, 2016, from <http://www.cnet.com/news/whatsapp-kills-1-subscription-fee/>.

discovered that 100% of financing rounds included liquidation protection over common stock and 19% included senior liquidation protection over other series of preferred stock.<sup>11</sup>

#### 4.1.1.3 Anti-Dilution (Ratchet) Protection

Anti-dilution protection provisions grant early investors the right to purchase additional securities in subsequent financing rounds to maintain the same percentage ownership of the company. Down financing rounds can significantly erode investment value, making these provisions essential. The same Fenwick & West study demonstrated that 100% of deals included weighted average ratchet protection and 0% full ratchet protection.<sup>12</sup>

#### 4.1.1.4 IPO Conversion Protection

An IPO conversion protection provision specifies that preferred stock will only convert to common stock if the IPO exceeds a predefined issuance price. When an IPO does not achieve the predetermined value, an investor can benefit through the issuance of additional shares.<sup>13</sup> Approximately 16% of deals analyzed in the Fenwick & West LLP study included a minimum IPO price which must be no less than the unicorn investment round price, and 14% included payment of additional shares if IPO price is below the unicorn round investment price.<sup>14</sup>

The above noted provisions are included in subscription agreements to limit downside risk and protect value in the event of a fundamental change in the corporation's affairs. Public markets offer fewer protections to investors and as such, many institutional investors are partial to the private market due to the control they can exert through negotiating customized deal structures.

### 4.1.2 Case Study: WhatsApp Financing Rounds

While a private company, WhatsApp raised capital in three financing rounds with Sequoia Capital as its sole investor. Each financing round granted Sequoia Capital with Redeemable Convertible Preferred Stock shown in the table below.

Table 4: WhatsApp Financing Rounds (in thousands, except number of shares and per share amounts)<sup>15</sup>

	Shares Authorized	Shares Issued & Outstanding	Net Proceeds	Liquidation Value per Share	Liquidation Value
Series A	40,000,000	20,000,000	\$ 248	\$ 0.0125	\$ 250
Series AA	44,444,440	22,222,220	\$ 7,964	\$ 0.3600	\$ 8,000
Series B	<u>16,200,000</u>	<u>7,662,835</u>	<u>\$ 49,802</u>	\$ 6.5250	<u>\$ 50,000</u>
	100,644,440	49,885,055	\$ 58,014		\$ 58,250

The redeemable convertible preferred shares received by Sequoia Capital were granted the following rights and privileges:

11 Kramer, Barry, Michael Patrick, and Nicole Harper. (2015, March 31). "The Terms Behind the Unicorn Valuations." <https://www.fenwick.com/FenwickDocuments/The-Terms-Behind-The-Unicorn-Valuations.pdf>.

12 *Ibid.*

13 *Ibid.*

14 *Ibid.*

15 Form 8-K/A WhatsApp pro forma. <https://www.sec.gov/Archives/edgar/data/1326801/000132680114000047/form8-kawhatsappproforma.htm>.



- Shares are convertible into either Class A or Class B shares (based on defined formulas).
- Automatic conversion to common stock (at the then applicable conversion rate) upon the closing of the sales of shares of common stock to the public of at least \$20,000,000.
- The same voting rights as the holders of Class B Common Stock (10 votes per share) on an as-converted basis.
- Liquidation preference to the holders of common stock, on a *pari passu* (equal) basis among preferred shareholders, to an amount equal to 100% of the original issue price for each series, plus all declared but unpaid dividends.
- Participation preference for Series B holders of 3x the original issue price after repayment of its liquidation preference.
- Participation with common stock in the remaining proceeds after full liquidation and preference amounts paid, if, as a result of conversion, the preferred stockholders would receive an amount greater than their preferential amounts.
- Redemption by the Company of all redeemable convertible preferred shares and declared but unpaid dividends if after July 16, 2018, the Company receives a written request by the majority of holders of Series AA and B.
- Annual, non-cumulative dividend of 8% per annum based on original issue price when and if declared by the Board of Directors.

Sequoia Capital owned roughly 20% of WhatsApp through the three financing rounds listed above. They benefitted from protection in the event of liquidation, a minimum return on investment and the ability to participate with common stock to capture WhatsApp's potential upside. Upon acquisition by Facebook, Sequoia Capital's position was valued at roughly \$3 billion in cash and stock, a return of roughly 50x its investment.

#### **4.1.2.1 Exit Strategy & Market Outlook**

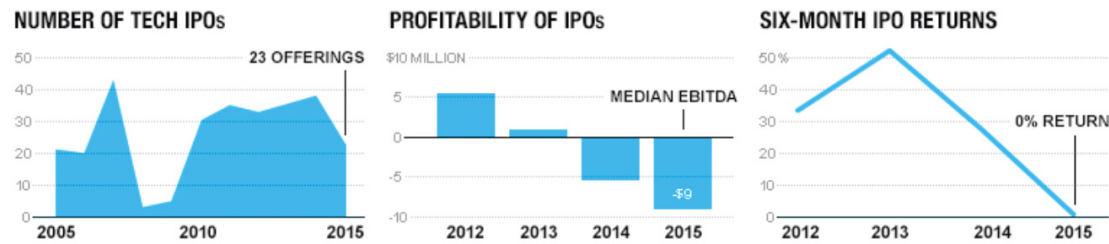
Unicorn investors generally divest through three different mechanisms: M&A, IPO or a secondary deal (selling the company to another PE firm). Today, however, the consensus amongst unicorns is that it is favourable to remain private for longer. Private markets generally value high growth over short term profitability, while public equity issuers must respond to quarterly shareholder demands.

Though companies are electing to remain private for longer,<sup>16</sup> SEC requirements may oblige companies to issue an IPO. In 2012, the SEC amended section 12(g) of the *Exchange Act* of 1934, which defined the new parameters for when a company must file an IPO. The provision now states that a company which, at the end of its fiscal year, has total assets exceeding \$10,000,000 and a class of securities held by either 2,000 persons or 500 persons who are not accredited investors, is subject to registration requirements with the SEC.

Whether through forced IPO or upon election by the company, IPOs have historically been the exit vehicle of choice for late-stage investors. The IPO market of late, however, has not been favourable, as detailed in Table 5 below:

<sup>16</sup> Erdogan, Begun, Rishi Kant, Allen Miller, and Kara Sprague. (May 2016). "Grow Fast or Die Slow: Why Unicorns Are Staying Private." McKinsey & Company. <http://www.mckinsey.com/industries/high-tech/our-insights/grow-fast-or-die-slow-why-unicorns-are-staying-private>.

Table 5: IPO Market<sup>17</sup>



### 4.1.3 Case Study — Square IPO

One of the recent IPOs which garnered significant media attention was the payment processing company Square. Square achieved a private market valuation of \$6 billion in October of 2014 upon closing its Series E financing round.<sup>18</sup> Square's IPO valued the company at \$2.9 billion dollars, well below its pre-market valuation.<sup>19</sup>

Not only did Square's valuation erode immediately upon IPO, Series E investors benefitted from ratchet provisions, which guaranteed them a 20% premium on their investment.<sup>20</sup> In order to satisfy these requirements, Square issued an additional 10.3 million Class B shares.<sup>21</sup>

Table 6: Square Pre-IPO Valuation History and Current Stock Chart



Square's IPO may have issued a warning sign to other unicorns that private market valuations may not keep pace in public markets.

17 Cohan, W. D. (2016). "Silicon Valley's \$585 Billion Problem." <http://fortune.com/silicon-valley-tech-ipo-market/>.

18 Buhr, Sarah. (2014). "Square Closes \$150 Million Round At \$6 Billion Valuation." TechCrunch. <https://techcrunch.com/2014/10/05/square-closes-150-round-at-6-billion-valuation/>.

19 Mac, Ryan. (2015). "The Winners And Losers Of The Square IPO." Forbes. <http://www.forbes.com/sites/ryanmac/2015/11/19/the-winners-and-losers-of-the-square-ipo/#17b41cfb5350>.

20 Zanki, Tom. (2015). "Square IPO Soars, But 'Ratchet' Provision Worries Some — Law360." Square IPO Soars, But 'Ratchet' Provision Worries Some." Law360. <http://www.law360.com/articles/729186/square-ipo-soars-but-ratchet-provision-worries-some>.

21 Ibid.

## 4.2 Changing Market Landscape

With the growth in start-up company valuations has emerged new investment vehicles designed to provide retail investors exposure to these companies, an opportunity historically restricted to high net worth individuals. These vehicles include start-up investments by mutual funds and the introduction of crowdfunding as an alternative source of capital.

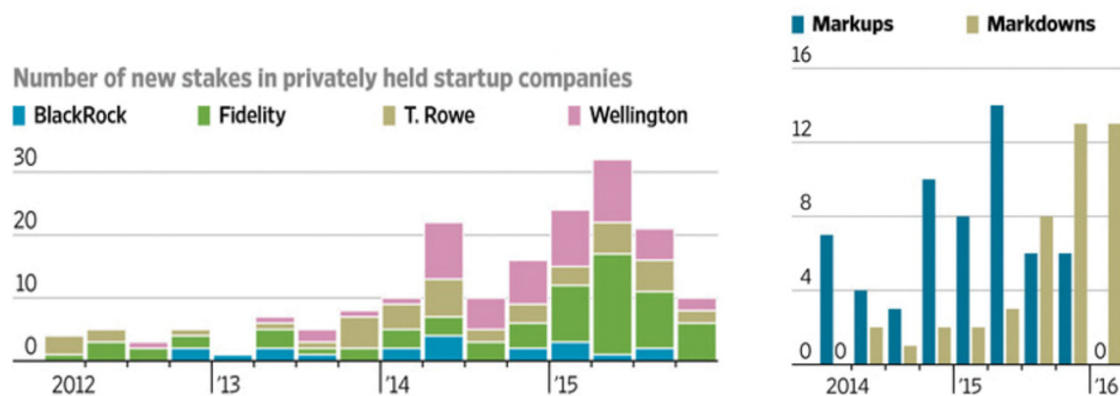
### 4.2.1 Mutual Funds

Mutual funds have helped to fuel the boom in start-up company valuation, giving ownership in private technology companies to retail investor clients. Because mutual funds have huge pools of capital to deploy, they have provided a source of “hot money” that have driven up technology company valuations.

Mutual fund companies are required to disclose the value of their start-up investments on a monthly or quarterly basis. These disclosures provide a view to the health of start-up company valuations. Lower valuations can make it harder for companies to raise additional capital at higher prices, leading to down funding rounds. This can hurt morale and efforts to lure new hires with stock options.

As can be seen in Table 7 below, mutual funds have pulled back on investing in new start-ups since mid-2015 and have been marking down their investments at a greater pace than marking up.<sup>22, 23</sup>

Table 7: Mutual Fund Investment in Unicorns



### 4.2.2 Crowd-funding

Crowd-funding has been an additional source of liquidity for private technology companies. Selling securities to a large number of investors over the Internet has emerged as a new avenue for businesses, particularly in early-stage technology companies as a means to raise capital. Crowdfunding manifests itself in various forms, with the intent of making it easier for businesses to raise capital while providing investors greater access to investment opportunities.

22 Seth, Shobhit. (2016). “Tech Unicorns Suffer More Markdowns.” *Investopedia*. <http://www.investopedia.com/articles/insights/050516/tech-unicorns-suffer-more-markdowns.asp>.

23 Winkler, Rolfe. (2016). “Mutual Funds Sour on Startup Investments.” *The Wall Street Journal*. <http://www.wsj.com/articles/mutual-funds-sour-on-startup-investments-1457043892>.

Securities regulators in five Canadian provinces have introduced a new crowdfunding regime (i.e., Multilateral Instrument 45-108 *Crowdfunding*), permitting businesses to raise up to \$1.5 million in any 12-month period through a funding portal operated by a registered dealer without issuing a prospectus. Non-accredited investors can invest up to \$2,500 per investment and accredited investors \$25,000 per investment through this vehicle. Though these limitations are placed on principal investments, investors that lack the requisite skills to evaluate investment opportunities can now provide capital to enterprises with very low survival rates. Similarly in the U.S., Title III of the *JOBS Act*, which was passed in April of 2012 but only came into effect on May 16th, 2016 now allows for private companies to raise money via online intermediaries from retail investors.

Raising money through crowdfunding allows an early stage tech company to probe market demand for its product and receive immediate feedback from prospective customers. A crowdfunded offering will engage investors and provide them with a sense of ownership and participation in the company's growth story. Additionally, this medium may serve to regulate private market valuations as VCs will allocate their capital towards projects with proven market demand versus others which have not gained traction among prospective users.

While there are many advantages to raising money through crowdfunding, there are risks associated with this type of investment. Generally, crowdfunding "investors" will make their decision to back or reject a project after viewing a short presentation issued by the company. While this allows investors to better understand the product that the company is developing, it does not provide them with the necessary tools to detect fraud, or to gauge management's abilities to transform an idea into a profitable business.

### **4.3 Conclusion**

Conventional investors and new market participants have fueled the growth in the number of unicorns. Early stage tech companies have had greater access to financing and, consequentially, better resources to develop products and build their businesses. Alternative valuation metrics have enabled investors to justify the lofty valuations. Tech companies are willing to accept unfavourable financing terms as achieving unicorn valuation grants them a superior chance of surviving the highly competitive environment. While the current market climate enables an innovative idea to become a profitable business, investors must be wary of the risks inherent to an overvalued investment. Active user growth may be a short-term substitute for earnings; however, long term, cash flow is always king.



# 5

## DISASTER FINANCING: A CONTINGENT VALUATION APPROACH<sup>1</sup>

by Janek Ratnatunga<sup>2</sup> and Ana Sopanah<sup>3</sup>

### 5.1 Introduction

Samarco Mineiracoes, a 50-50 joint venture between Australia's BHP Billiton and Brazil's Vale, operates three iron ore mine in Mariana, Brazil. One of the dams burst on November 5, 2015, unleashing 62 million cubic metres of sludge into the Doce River at about 70km/h. It destroyed the town of Bento Rodrigues, killing at least 13 people, displaced thousands of others, affected water supplies to an estimated 250,000 people and killed fish stocks along 600 kilometres of river in two states.

Municipal councils along the river interrupted water treatment and supplies following the accident, causing grassroots campaigns nationwide to collect bottled water for residents. Although some municipalities have said the water is again good to drink, residents are objecting to its cloudy colour and foul smell.

Samarco, which has been fined 250 million Brazilian reais (\$92 million) by Brazil's environmental watchdog, IBAMA, has agreed with the Brazilian government to put R\$1 billion (\$366 million) into a preliminary fund for compensation and clean-up costs, and risks additional daily fines of R\$10 million (\$3.7 million) if does not take steps to mitigate the ecological damage. In addition, a lawsuit filed in federal court in Brasilia seeks at least \$7.2 billion that would be administered by a private fund over 10 years for environmental recovery and compensation. BHP shares have fallen 20% since the dam burst (Timson and Ker, 2015)

Whilst the economic, environmental and social damage as a result of this disaster is often impossible to measure, it is interesting that within a week of the Brazilian disaster, damage estimates quoting significant monetary values have been calculated and lawsuits filed.

One characteristic common to all natural disasters is that damage estimates calculated shortly afterward tend to be significantly overstated; they are hardly more than just back-of-the-envelope calculations. The factors that contribute to the over-estimation of losses vary considerably. In some cases, buildings, infrastructure and crops that appear totally destroyed may in fact be only partially damaged. To some extent, this phenomenon is also driven by the media, who like to add a monetary flavour to the disaster. Further, according to some economists who have studied natural disasters,

---

<sup>1</sup> This paper was originally published in *JAMAR*, Vol. 13. No. 2 (2015). Used with permission of the authors.

<sup>2</sup> Swinburne University.

<sup>3</sup> University of Widyagama, Indonesia.

there is also an incentive for Regions to overestimate their losses in order to maximize their political leverage over government and business disaster assistance dollars.

It also appears that the “deep pockets” of BHP have been considered when coming up with the \$7.2 billion claim. This is the ‘affordability’ approach.

Is there a more objective approach? This paper looks at the case of another significant mud-flow disaster, this time in Indonesia, to demonstrate that a ‘contingent valuation’ approach is more objective than the “back-of-the-envelope” or “affordability” approaches.

This paper examines the economic, environmental, and social impact of the Sidoarjo (Lapindo or Lusi) mudflow disaster in East Java province. The paper uses a “contingent” valuation method to consider the impact to the East Java economy, the surrounding environment and the people, and the amount of public financing that is required to alleviate the consequential human suffering. The heaviest economic impact has occurred in the region surrounding the mud volcano in Sidoarjo district, but areas to the East and West have also been affected.

This paper sets out to value the total financing needed to somewhat alleviate the economic, environmental and social losses as a consequence of the human disaster known as Sidoarjo (Lapindo or Lusi) mudflow disaster in East Java province, Indonesia, utilising a mixed-valuation method, termed ‘Contingent Loss Assessment’ that integrates the economic loss assessment of the disaster with a contingent valuation of the environmental and social costs. The focus of the paper is to provide a comparison between the economic predictions of the disaster financing required, and the amount of disaster financing that will better alleviate the human suffering observed, using contingent valuation method (CVM) predictions.

## **5.2 Lapindo Mudflow Disaster in East Java**

On 29th May 2006, mud and gases began erupting from a vent 150 metres from the hydrocarbon exploration well at Lusi. It is not within the scope of this paper to comment on any scientific or other commentary as to the cause of the eruption. The reality is that, now nine years later, the mudflow continues to flow at rates as high as 160,000 cubic metres per day. Dubbed the ‘Lapindo mudflow’ by most of Indonesia after the company responsible for drilling the well, the mud volcano has inundated an area in excess of 8.5 square kilometres, despite attempts to contain it by constructing a series of embankments.

The mudflow has inundated factories, farmland and the Surabaya–Gempol toll road in the sub-district of Porong. A gas pipeline near the site ruptured and exploded in November 2006, reducing the supply of gas for fertiliser production; this has in turn led to local fertiliser shortages (Plumlee, et al., 2008). Around its centre in Sidoarjo district, the effects of the mud volcano have been particularly devastating. Mud flowing from the volcano has displaced over 50,000 people in more than a dozen villages, severely disrupting their livelihoods. The local property market has collapsed; residents are unable to obtain valuations on their properties. While the impact of the mudflow has been felt most acutely by the local community in Sidoarjo, other regions in East Java have experienced environmental, logistical and economic effects as a consequence of the disaster.

We have already stated that a characteristic common to all natural disasters is that damage estimates calculated shortly afterward tend to be significantly overstated. This ‘instant’ overestimation phenomenon does not apply to this study of the Lapindo mudflow disaster, as it is being done eight years after the initial occurrence.



### 5.3 Estimating Disaster Losses: An Imprecise Science

Natural disasters typically set in motion a complex chain of events that can disrupt both the local economy and, in severe cases, the national economy. Calculating the damages of such an event can be an onerous task because the cost of a natural disaster is ultimately wedded to several factors, and, more importantly, varies by type of disaster. Among the key influences are the magnitude and duration of the event, the structure of the local economy, the geographical area affected, the population base and the duration of the impact of the disaster. Naturally, disasters like the Lapindo (Sidoarjo) mudflow disaster that have affected a densely populated area for a long period of time have the greatest potential for inflicting the most damage. Not only are large numbers of people endangered, but the potential loss to homes, businesses, highways, roads, bridges and utilities is also magnified.

It must be noted that, in an economic sense, the cost of a natural disaster and the losses that stem from a natural disaster are two separate terms. “Losses” occur principally through destruction of an economy’s wealth; i.e. the physical assets that help generate income (see Table 1). These assets include roads, homes, buildings, bridges, levees, utilities, factories, farmland, forests or other natural resources. To correctly measure these losses, one must attempt to calculate either the lost income that these physical assets help generate, or the decline in the assets’ values. To count both is to double count. By contrast, ‘costs’ are incurred when an economy undertakes to replace, repair or reinforce those tangible assets (capital) that are destroyed; this includes the buttressing of structures beforehand (for example, the construction of levees or seawalls, or the reinforcement of bridges or buildings in earthquake prone areas); or in the case of the Sidoarjo mudflow disaster, the diversion of the mudflow; and the repairs and reconstruction of roads, factories and houses away from the disaster area.

Disaster losses manifest themselves in numerous ways, and, unfortunately, can never be estimated with absolute certainty. When correctly calculating losses, an analyst must account for several factors that are often overlooked, intertwined or extremely difficult to measure.

For example, how do you determine the true value of a containment bund, levee, a public road or a sewage treatment plant? Economists believe that the true value of a physical asset is its present discounted value, but calculating this value involves a degree of subjective judgment. A structure’s market value is probably the next best alternative, but this measure also presents problems because some physical assets are not traded in the marketplace; thus, determining their true market value is next to impossible. Therefore, for lack of reliable information, analysts often use the asset’s replacement cost. Endless other issues also arise. How do you measure the decline in property values that sometimes occurs in the vicinity of the disaster area? What prices and production should you attach to crops that were washed away before harvest, or livestock that were unable to gain weight during severe weather? Finally, how do you calculate the expected lifetime earnings of individuals who perished?

Despite these limitations, economists attempt to measure the total loss of a disaster by estimating two separate types of losses: direct and indirect. Direct losses are easier to estimate. For example, in the Lapindo mudflow disaster, these losses would consist of the crops, buildings or structures that were destroyed or damaged as a result of the mudflow.

Indirect (or secondary) losses are the consequences of the direct losses. These include lost output, retail sales, wages and work time, additional time transporting goods or commuting to work (reduced leisure), additional costs to business from rerouting goods and services around the affected area, utility disruptions, reduced taxable receipts, lost tourism or increased financial market volatility. Obviously, calculating indirect losses is the more difficult of the two.



It must be remembered that the losses and resultant economic consequences shown in Table 1 all pertain to physical assets and the economic consequences of losing the use of those assets due to the disaster. However, it is not possible to value the full longer-term impact of the disaster on the ecological systems and social networks using market-based loss assessment techniques. As such, these valuations need to be complimented by other ‘non-market’ valuation techniques.

*Table 1: Calculating the Economic Effects of Natural Disasters: Some Definitions and Concepts*

Term	Definition	Example
Losses	Change in wealth caused by damage to structures or other physical assets	Houses, buildings and structures are damaged, crops and forests destroyed, landslide damages.
Direct vs. Indirect Losses	Direct losses are those resulting from building, lifeline, and infrastructure damages. Indirect losses are those that follow from the physical damages.	Direct losses: building damages, bridge collapse, loss of lives. Indirect losses: commuter disruptions, loss of local tax revenues, reduced tourism
Market vs. Non-market Effects	Market effects are those that are reflected in national income accounts data; Non-market effects do not appear in the national income accounts data	Market effect: loss of income due to disaster-caused destruction. Nonmarket effects: loss of leisure time due to longer commute as a result of the disaster.
Costs	Highest-valued of foregone alternative use of a resource	Mitigation expenditures undertaken before the disaster occurs, (for example, construction of levees or seawalls or reinforcement of buildings) and reconstruction of buildings, etc. during recovery period.
Redistribution	Transfer of wealth between individuals or governments	Federal disaster relief, but also includes transfers that occur because resources or production are moved to a new region.
Wealth	Present value of the income stream from the productive assets of society	The value of a forest or farmland is the sum of the flow of monetary benefits (income from sales of timber or crops) and non-monetary benefits (vistas and recreational benefits of a forest).

*Source: Adapted from Brookshire and McKee (1992).*

## 5.4 The Contingent Valuation Method

The *Contingent Valuation Method* (CVM) is used to estimate economic values for all kinds of ecosystems and environmental and social attributes. The method has great flexibility, allowing valuation of a wider variety of non-market goods and services than is possible with any other non-market valuation technique. It can be used to estimate both *use* and *non-use* values, and it is the most widely used method for estimating non-use values. It is also the most controversial of the non-market valuation methods, and some of these controversies will be discussed later.

The CVM involves directly asking people, in a survey, how much they would be willing to pay for specific environmental services. In some cases, people are asked for the amount of compensation they would be willing to accept to give up specific environmental services. It is called “contingent” valuation, because people are asked to state their willingness to pay (or receive as compensation), contingent on a specific hypothetical scenario and description of the environmental service.

The CVM is referred to as a “*stated preference*” method, because it asks people to directly state their values, rather than inferring values from actual choices, as the “*revealed preference*” methods do. It circumvents the absence of markets for environmental goods by presenting consumers with hypothetical markets in which they have the opportunity to pay for the goods/services in question, or receive as compensation for foregoing such. The hypothetical market may be modelled after either a private goods /services market or a political market.

The fact that the CVM is based on what people say they would do, as opposed to what people are observed to do, is the source of its greatest strengths and its greatest weaknesses. CVM is one of the only ways to assign dollar values to non-use values of the environment and of society—values that do not involve market purchases and may not involve direct participation. These values are sometimes referred to as “passive use” values. They include everything from the basic life support functions associated with ecosystem health or biodiversity, to the enjoyment of a scenic vista or a wilderness experience, to appreciating the option to fish or bird watch in the future, or the right to bequest those options to your grandchildren. It also includes the value people place on simply knowing that giant pandas or whales exist. In a social context, it places value to aspects such as good health, sound education, public safety, freedom of speech, etc.

It is clear that people value non-use, or passive use, environmental and social benefits. However, these benefits are likely to be implicitly treated as zero unless their dollar value is somehow estimated. So, how much are they worth? Since people do not reveal their willingness to pay for them (or receive compensation for foregoing them) through their purchases or by their behaviour, the only option for estimating a value is by asking them questions.

However, the fact that the CVM is based on asking people questions, as opposed to observing their actual behaviour, is the source of enormous controversy. The conceptual, empirical, and practical problems associated with developing dollar estimates of economic value on the basis of how people respond to hypothetical questions about hypothetical market situations are debated constantly in the economics literature. CVM researchers are attempting to address these problems, but they are far from finding acceptable solutions. As a result, many economists, psychologists and sociologists, for many different reasons, do not believe the dollar estimates that result from CVM are valid. More importantly, many jurists and policy-makers will not accept the results of CVM. Because of its controversial nature, users must be extremely cautious about spending money on CVM studies and about using the results of CVM studies. [See Appendix 1 for a summary of the *Advantages and Limitations* of the CVM approach.]

## 5.5 Contingency Indicators

The list of contingency indicators is structured around the three broad categories: economic, environmental and social. They are first indicated in monetary or non-monetary terms, and then if the effects are direct or indirect (see Table 2). *Direct impacts* are due to direct contact with disaster, i.e. an immediate effect. *Indirect impacts* occur as a result of the direct impacts, and have a medium to long-term effect. *Monetary impacts* have a market value and will be measured in monetary terms whilst *non-monetary impacts* are non-market impacts, such as health impacts.

*Economic impacts* are usually grouped into three categories: direct, indirect, and macroeconomic (also called secondary) effects. Direct economic damages are mostly the immediate damages or destruction to assets or “stocks,” due to the event itself. A smaller portion of these losses results from the loss of already produced goods. These damages can result from the disaster itself, or from consequential physical events, such as fires caused in the aftermath of Lapindo disaster by gases escaping. Effects can be divided up into those to the private, public and economic sectors: in the private sector, the loss of and damage to houses and apartments and building contents (for example, furniture and household equipment) is an effect. In the public sector education facilities such as schools, health facilities (hospitals) and so-called lifeline infrastructure such as transport (roads, bridges) and irrigation, drinking water and sewage installations as well as electricity. In the economic sectors, there are damages to buildings, machinery and other productive capital. Another category of direct damages is the extra outlays via the Government (taxpayer) and the general public donations on *emergency spending* in order to help the population during and immediately after a disaster event. All of these direct economic damage categories were present in the Lapindo mudflow disaster.

The direct stock damages have indirect impacts on the “flow” of goods and services: *indirect economic losses* occur as a consequence of physical destruction affecting households and firms. Most important indirect economic impacts comprise: (1) diminished production/service due to interruption of economic activity; (2) increased prices due to interruption of economic activity leading to a reduction of household income; (3) increased costs as a consequence of destroyed roads, e.g. due to detours for distributing goods or going to work; and (4) loss or reduction of wages due to business interruption. Indirect effects represent how disasters affect the regular way of living and undertaking business.

Assessing the *macroeconomic (secondary)* impacts involves taking a different perspective and estimating the aggregate impacts on economic variables like gross domestic product (GDP), consumption and inflation due to the effects of disasters, as well as due to the reallocation of government resources to relief and reconstruction efforts. As the macroeconomic effects reflect indirect effects as well as the relief and restoration effort, one must be careful not to simply add these effects to the direct and indirect effects as they are partially accounted for by those already, and this will cause duplication.

Clearly, in any disaster, the environmental and social consequences also have economic repercussions. The reverse is also true since loss of business and livelihoods can affect human health and well-being. From an anthropogenic perspective, the environment may have a *use* and *non-use* value. The *environment* can be regarded as a provider of goods and services for human consumption: food, recreation, maintaining biodiversity, etc. Water for consumption or irrigation purposes, and soil for agricultural production, are good examples of use value. These impacts should be included in the valuation of loss impacts. On the other hand, there are also non-use values such as option value (the environment may have future value either as a good or a service), existence value (value of knowing a certain species exists), and bequest value (knowing that something will exist for future generations). Effects on biodiversity and natural habitats fall into this category where there is not a direct, measurable benefit, but ethical or other reasons exist for protecting these assets and services. This is more difficult to measure in terms of monetary loss impact. Some use values—and those impacts on those values—such as environment as provider or goods in agriculture will/should be included in the economic impacts. As a general proposition, the valuation of environmental impacts is highly case specific, and default values (such as for the health impacts) have to be obtained using contingent valuation methods.

It must not be forgotten that disasters, natural or man-made, may also have *positive* effects such as an increase of pasture area for raising livestock, increased water availability or replenishment of

aquifers; or the sudden influx of relief funds from private and public sources to alleviate suffering. Such funds can be used to boost the construction sector (resulting in a post-event reconstruction boom). However, there were no significant positive effects in the Lapindo mudflow disaster. The only real construction was the rebuilding of the alternative road and a construction of some factories and houses in an adjacent area. In the valuations done in this paper, as the adverse impacts of the Lapindo mudflow disaster by far overshadowed the positive effects, the positive effects were not listed separately in the valuation.

The *social* impacts of a disaster may affect individuals or have a bearing on them at the societal level. These can also be categorised into direct and indirect effects. The most relevant *direct social effects* are: (1) the loss of life; (2) people injured and affected; (3) loss of important memorabilia; and (4) damage to cultural and heritage sites (in addition to the monetary loss). The main *indirect social effects* are: (1) increase of diseases (such as cholera and malaria); (2) increase in stress symptoms or increased incidence of depression; (3) disruption in school attendance; and (4) disruptions to the social fabric such as the disruption of living environments and the loss of social contacts and relationships.

Table 2: Summary of Quantifiable Disaster Impacts

	Monetary		Non-Monetary	
	Direct	Indirect	Direct	Indirect
<b>Economic</b>				
<b>Private sector:</b> Households	Housing damaged or destroyed	Loss of wages, reduced purchasing power		Increase in poverty
<b>Public sector:</b> Education; Health; Water and Sewage; Electricity; Transport; Emergency Spending	Assets destroyed or damaged: buildings, roads, machinery, etc.	Loss of infrastructure services		
<b>Economic Sectors:</b> Agriculture; Industry; Commerce; Services	Assets destroyed or damaged: buildings, machinery, crops etc.	Losses due to reduced production		
<b>Environmental</b>				
			Loss of natural habitats	Effects on biodiversity
<b>Social</b>				
Households			Number of casualties; Number of injured; Number affected	Increase of diseases; Stress symptoms
Source: Richards (2011)				

## 5.6 The Application of the Contingent Valuation Method

The researchers followed the steps required in the CVM process over the period March 2011- August 2012. The first step was to define the valuation problem. This included: (1) identifying interested parties and stakeholders; (2) determining exactly the services and issues to be valued, and (3) who the relevant population was. This involved examining the disaster area to be valued, the goods and services affected, and the ecological and social issues involved.

The second step was to have preliminary decisions about the CVM survey with key academics in universities in the area and other stakeholders including local councils and the affected population. The stakeholders of the Lapindo mud disaster were identified as: (1) the company (*Lapindo*); (2) one regency (*kabupaten*); (3) the regent (*bupati*); (4) four sub-districts (*kecamatan*); (5) 15 villages (*desa*); (6) 10 factories (*pabrik*); (7) 300 small businesses; (8) three health centres (*puskesmas*); (9) 33 schools; (10) lawyers; (11) NGOs; (12) security/police; and (12) the media. This survey was contingent on the importance of the valuation issue and the complexity of the questions being asked. In-person interviews were used extensively since this is regarded as the most effective method for complex questions, because it is often easier to explain the required background information to respondents in person, and people are more likely to complete a long survey when they are interviewed in person. Often colour photographs were used to help respondents understand the conditions of the scenario that they were being asked to value.

After these preliminary decisions, the next step was the actual survey design. This was the most important and difficult part of the process, and took six months to complete. It was accomplished in several steps. The survey design process started with initial interviews and/or focus groups with the types of people who were directly or indirectly affected by the disaster. In the initial focus groups, the researchers asked general questions, including questions about peoples' understanding of the issues related to the site, especially whether they are familiar with the wider environmental and social issues.

In later surveys and visits to the disaster site, the questions got more detailed and specific, and helped develop specific questions for the survey; especially the kind of background information that was needed and how to present it. This involved obtaining information on the location and characteristics of the site both through research and observation. The researchers also wanted to learn about peoples' knowledge of relevant environmental and social issues at this stage, and test different approaches to the valuation question. Also different payment/compensation mechanisms were tested. Questions that can identify any "protest" bids or other answers that do not reveal peoples' values for the services of interest were also developed and tested at this stage. A number of these in-depth interviews were video recorded.

The next step was the actual survey implementation. This also required five visits to the disaster site to select the survey sample and conduct the interviews. At one of the visits, there was a demonstration by affected villagers, and over 100 personal interviews were conducted. Samples of these responses are provided in the paper. Secondary data was also collected on economic loss assessment for integrating these with the CVM calculations. The final step; i.e. to compile, analyse and report the results using loss assessment and contingent techniques appropriate for this type of study are presented in this paper.

### 5.6.1 Economic Impact

The mudflow has had a marked impact on the province's economy and business sector. The disaster has brought about social and economic losses to the people in the Lapindo Regency and surrounding regions and also impacted on businesses and business confidence. The region suffering

the biggest loss is the central corridor from Surabaya south to Malang, which constitutes East Java's manufacturing heartland (Santosa and McMichael 2004). This region, known as the growth ribbon (*pita pembangunan*) of East Java comprises the districts of Lapindo, Mojokerto, Pasuruan and Malang. The economic costs generated by the mudflow are likely to continue to grow substantially. Eight years after the disaster, the scale of the human tragedy is still unfolding as seen from these two typical responses from members of Jatirejo village, which was 5 kms from the mudflow spray area.

There were hundreds of farms, rice fields and small businesses and 10 large factories directly affected by the mudflow, adversely affecting the lives and livelihoods of thousands of people. In addition to the direct impact (destruction, inundation) there has been an indirect impact on many more businesses in East Java.

In terms of logistics, it is estimated that before the mudflow the Surabaya–Gempol toll road accommodated 20,000–30,000 vehicles per day, including up to 3,000 container vehicles (Yahya 2007). Despite co-ordinated efforts, this toll road was overwhelmed by the mud. This has heightened congestion on secondary roads, especially disrupting the flow of goods and people from Surabaya to the city of Malang and to regions to the east and south of Malang. Transportation times have increased for freight.

The additional time needed to transport goods to a port or obtain deliveries of locally sourced materials implies a considerable financial burden for many companies in terms of the extra fuel used, the overtime paid to trucking operators and the requirement to pay illegal levies for the use of secondary roads. For some shippers, late delivery of goods to the container terminal at Surabaya has incurred additional demurrage costs of up to Rp 600,000 (US\$ 60) per container. It has been estimated that the mudflow has, on average, increased transport costs for individual manufacturers by 30%, and one Lapindo-based housing tile manufacturer claims that costs have increased by 50–60% for its raw materials sourced from the Malang region (McMichael, 2009).

The economic impact of the mudflow is unevenly spread through the province. In Lapindo, the mudflow has had a direct impact, with economic growth in the district falling from 6.7% in 2005 to 4.6% in 2006. The leather processing, food, and hotels and restaurants sectors have been most affected. The closing of a main toll road has also affected the micro-traders who serviced the traffic flow.

In Tanggulangin sub-district, it is estimated that output from the flourishing leather industry dropped by 80% after the appearance of the mud volcano (McMichael, 2009). The mudflow has undermined Lapindo's ranking as an exemplar of economic growth and public service (Setiadi, 2007). Given that 20–30% of East Java's exports and imports originate in, or are destined for, factories in Lapindo, the likelihood that the district's economy will remain weak for some time is of particular concern (Yahya, 2007). Unfortunately, a shadow economy has replaced the traditional economies in the area. Local tourism of Indonesians coming to see the disaster area has boomed. Many ex-factory workers have become tour-guides on motor-cycles. The women have taken to the oldest profession that often goes hand-in-hand with tourism.

The economy of the Malang district has also been hard hit by the effects of the mudflow. Growth in the furniture sector declined from 7.2% in 2005 to 5.3% in 2006 (Ananda, 2007) and has continued to decline. Hotels in tourist centres in Malang and in Trawas and Prigen on the northern slopes of Mt Arjuna experienced declines of up to 80% in occupancy rates at the onset of the mudflow, but appear to have recovered somewhat since then, due to the Indonesian local tourism that has come to see the disaster. Surabaya trucking firms and clove and cigarette manufacturers in the Malang area have been particularly affected by disrupted distribution channels. The downturn in the handicraft industry has transferred Malang's competitive advantage in that sector to neighbouring



Tulungagung, a traditional competitor of Malang. Regions to the west of the central corridor have been affected by the infrastructure and the transport bottleneck around Surabaya that resulted from the mudflow.

The degree to which the mudflow has affected individual manufacturing enterprises in East Java appears to be related to the scale of their logistics and distribution networks. For example, in the Probolinggo district, the fish canning industry has suffered financial losses stemming from the increased trucking distances required to transport goods to Surabaya. Similarly, seafood exporters using cold storage facilities in Pasuruan district have had to bear additional freight costs to move their product to the port of Surabaya for export. By contrast, cane sugar production has been little affected, because of that industry's reliance on local processing and distribution and the use of small trucks to transport cane over secondary roads.

Larger manufacturers with more diverse distribution networks have been less disadvantaged than their small and medium enterprise counterparts. One of the jewels in the province's economic crown is the clove (kretek) manufacturer, PT Gudang Garam. The company employs a workforce of 41,000 in Kediri and generates nearly a third of the district's local tax revenue. Gudang Garam's output and distribution has not been affected significantly by the mudflow and believes that where it is concerned business confidence in Kediri remains strong (McMichael, 2009).

Individual firms have found means of accommodating their business operations to the difficult circumstances wrought by the mudflow. For example, the bottled water manufacturer PT Ades Waters Indonesia, a subsidiary of PT Aqua Golden Mississippi (Danone Group), sources its raw material from springs in Pandaan and has relocated its packaging plant to Surabaya to reduce transport costs. Leather handicraft companies from Tanggulangin village, situated near the source of the mudflow, have joined together to open exhibition halls in Surabaya as a means of obviating the need for prospective buyers to travel to the mud affected area. Also, the East Java government has taken concrete measures to assist industries affected by the mudflow, including the establishment of a new trade centre in Mojokerto to showcase handicrafts and leather goods manufactured in the Lapindo area. It should be recognised that, aside from the mud volcano, a wide range of factors have a bearing on the rate of economic growth in the province. For example, regulatory barriers to domestic trade in East Java are a significant obstacle to business sector growth (World Bank and The Asia Foundation, 2005). Inadequate transport infrastructure (especially in the rail network), a chronic shortage of reliable power for industry and rising electricity tariffs are acknowledged as impediments to domestic and foreign investment. Moreover, a lack of clarity in government decision making with respect to mudflow compensation and reconstruction arrangements has had a negative impact on local business confidence.

Table 3: Direct Economic Costs–2006–2015 (US\$)

No.	Cost Component	2006	2007-2015*	Total
1	Lost Assets	131,467,000	1,729,972,000	\$1,861,439,000
2	Lost Income	<u>16,736,000</u>	<u>215,547,000</u>	<u>232,283,000</u>
	<b>Total</b>	<b>148,203,000</b>	<b>1,945,519,000</b>	<b>\$2,093,722,000</b>
*Future Cash Flows Discounted to Present Values (2011) using a 15% Discount factor				
Source: Brawijaya University Report on Economy Impacts Assessment of the Mud Flow 2006				

Table 4: Indirect Economic Cost–2006–2015 (US\$)

No.	Cost Component	Economic Cost*
1	The Decrease of the Value of the Asset	\$459,696,840
2	Decrease of Bus Income	1,500
3	Decrease of Small Bus Income	230
4	Decrease of Truck Income	1,200
5	The Increase of Cost for Private Transportation	5,700
6	The Decrease of Hotel Income	5,570
7	The Decrease of Restaurant Income	1,530
8	The Decrease of Trade Income	2,210
9	The Decrease of Fish Pond Owner Income	288,890,530
10	The Increase of the Cost of Maintaining the Porong River	<u>13,200</u>
	<b>Total</b>	<b>\$748,618,510</b>
* Future Cash Flows Discounted to Present Values (2011) using a 15% Discount factor		
Source: Brawijaya University Report on Economy Impacts Assessment of the Mud Flow 2006		

Table 5: The Economic Cost for Recovering the People in Inundated Area–2006–2015 (US\$)

No.	Cost Component	Economic Cost*
1	Increase in the Cost to Recover the Area	\$281,017,000
2	Increase in the Cost to Recover the Business	89,452,000
3	Increase in the Cost to Recover the Public Infrastructure	<u>218,917,000</u>
	<b>Total</b>	<b>\$589,386,000</b>
*Future Cash Flows Discounted to Present Values (2011) using a 15% Discount factor		
Source: Brawijaya University Report on Economy Impacts Assessment of the Mud Flow 2006		

These economic losses and financial costs are provided in Tables 3 to 5 and are summarised from the Brawijaya University Report on *Economy Impacts Assessment of the Mud Flow 2006* (BPK – RI, 2007, Richards, 2011). It was not the purpose of this research study to recalculate the economic cost despite the new evidence emerging from the CVM interviews, and therefore the numbers used in this loss assessment uses these economic costs as a starting point.

Please note that in expressing expected future costs and benefit streams in present value terms, discounting is required. Discounting is undertaken as people put a higher value on the present, funds invested now offer profit opportunities in the future (thus, there are so-called *opportunities* costs to using funds for other purposes) and there is generally uncertainty about the future. The discount rate represents the average return of a public investment into alternative projects; e.g. a discount rate of 12% signifies that investing public funds (into water infrastructure, health, education etc.) on average would bring about a return of 12% and other projects would need to have at least an equal return in order to be considered. Often a discount rate of 12% is chosen in practical applications for the calculation of the NPV, e.g. standard used by Asian Development Bank (ADB 2002). In Tables 3-5 however, a 15% discount factor was used to adjust for country-specific risk by Brawijaya University, and this is also used for the contingent valuations.



## 5.6.2 Environmental Impact

The Lapindo mudflow is a new type of disaster, one that involves both man-made activity and natural phenomena. The duration of this disaster is estimated to be 23–35 years, much longer than other types of disaster—earthquakes last seconds; tornadoes, minutes; tsunamis, hours; floods, days or weeks.

In order to minimize the impact of the mudflow, the mud should ideally be released to the sea via the Porong River. However, the high viscosity of the mudflow and geological deformation such as land subsidence constrain the mitigation process. Hence, land subsidence has made the mudflow's pools become lower than the river, and the high viscosity of the mud has made it harder for it to flow naturally through hydraulic mechanisms. Furthermore, the accumulation of mud in the river is causing sedimentation through the riverbank and spreading across the fisheries' aquaculture area along the coast. The local Marine and Fisheries Board stated that if the mudflow cannot be appropriately released to the sea, the sedimentation will affect the quality of the water's oxygen absorption in the river and estuary. This would disrupt 1,500 hectares of traditional shrimp aquaculture in the area.

Mudflow eruptions are associated with the release of bubbles and toxic gas. Some bubbles comprising a mixture of gases and water have been found in residential areas. Some of these reached 15 metres in height. Moreover, toxic gases, such as hydrogen sulphide ( $H_2S$ ), have been released from the mudflow's epicentre. The Ministry of Environment in Indonesia stated that on the first day of eruption,  $H_2S$  levels reached 700 parts per million (ppm), which can be deadly to humans. The Research and Development Agency of the Ministry of Public Works stated that fresh water quality surrounding the mudflow area is unsuitable for consumption; for example, the turbidity level reached 47-169 NTU, where 25 NTU is the maximum for safe consumption (Richards, 2011).

The accumulation of mud from the original vent is accompanied by subsidence in the surrounding area. It has been projected that more than 40 metres of subsidence will occur in the next few years within several kilometres of the eruption vent. The possibility exists that a huge crater will form from the hollowed-out remains of the mud volcano. Dried mud deposits could have adverse effects on river and marine environments and on the health of local residents (Plumlee, et al. 2008).

Another cause for concern is the mud's impact on natural drainage patterns in the Brantas River basin. Mud-induced siltation of the Porong River is expected to heighten the risk of wet-season flooding in the vicinity of Mojokerto and Lapindo. If flood-waters cannot be contained upstream, it is feared the Surabaya River will overflow, leading to possible widespread flooding in Surabaya (Rumiati, 2007). Evidence is mounting that the mud has a harmful impact on river ecosystems and human health. The mud has been assessed as containing phenol in concentrations exceeding the maximum residue limit (Friends of the Earth International, 2007). Phenol is toxic to fish, aquatic vegetation and humans. A recent report by the United States Geological Service has found that several elements, notably arsenic, are present in concentrations that exceed U.S. government environmental guidelines for residential soil (Plumlee, et al. 2008). It can be assumed that the mud will seriously affect the livelihoods and health of shrimp and fishing communities located adjacent to the Porong River and the Madura Strait, that is, communities in the districts of Lapindo, Madura, Pasuruan and Probolinggo, and the municipality of Surabaya.

With attempts to staunch the flow totally unsuccessful, plan has been devised for its long-term management. A United Nations Environment Programme (UNEP) evaluation in June 2008 identified three mitigation options: pumping the mud directly into the sea (at a cost of Rp 13 trillion over 30 years); pumping the mud to mangrove wetlands to the east while diverting the Porong River (at a cost of Rp 16 trillion over 30 years); and, most expensively, constructing an open channel to allow mud to flow directly to the sea (a one-off cost of Rp 33 trillion) (UNEP, 2008). None of these options is risk-free: with the first, there is concern that pumping would not be able to move the required volume of

viscous mud; the second increases the risk of flooding; and the third would impinge on production in farming and aquaculture areas.

Initially the Lapindo Company was held responsible for managing all the economic, environmental and social issues within the affected area. These are summarised in Table 6. As such, the Lapindo Company was also initially responsible for mudflow prevention efforts including the management of the main levee and drainage of the mudflow to the Porong River. However, the responsibility for the management of the mudflow was given to an agency called *Badan Penanggulangan Lumpur Lapindo* (Lapindo Mud Management Agency) or BPLS through the Presidential Regulation 14/2007. This was a positive step in the process, as the Lapindo Company was clearly not equipped with the expertise to effectively manage such a monumental task. In addition to their other extremely difficult task of containing and managing the mudflow, BPLS has a comprehensive role in managing the social issues in the Lapindo region as they relate to the mud volcano disaster. The areas of responsibility attributed to BPLS through the Presidential Regulations were brought about as a result of consultation between affected residents and governments at all levels.

The BPLS tries to continually consult and coordinate with the provincial governments of East Java and the Lapindo Regency government. Also the local governments each have a member on the BPLS Advisory Board. Local governments have a very important and diverse role to play in the Lapindo mud disaster, both in managing social problems as well as in procuring land for the relocation of infrastructure. Examples of the roles local government takes in managing social issues are: (1) the provision of temporary shelter to the displaced population in the PBP refugee camp; (2) opening of the community health posts; (3) transportation assistance for school children whose parents have sought refuge in the PBP refugee camp; (4) information dissemination, mediation, and one on one help in the form of clarification of issues and consultation with the affected population; (5) assistance to farmers for crop failure; (6) provision of water tanks in some villages with polluted groundwater.

The environmental issues that have a social consequence are (1) the social impacts experienced by residents, including a community development role in the mudflow prevention activities; (2) the social impacts arising as a consequence of geological deformations such as bubbles (eruptions of gas/water/mud) that threaten the safety of residents, as well as the pollution of soil and irrigation water; and (3) the evacuation and relocation of affected residents to a safer place. The BPLS is also responsible for compiling information that will assist in forming a basis for future policy direction in managing social issues. Clearly the environmental disaster had a significant social consequence. This will now be examined in the next section.

### **5.6.3 Social Impact**

As discussed before, initially the Lapindo Company was held responsible for managing all the economic, environmental and social issues within the affected area. These are summarised in Table 6. Later, this management task was handed over by Presidential Regulation to the BPLS that consisted of a number of agencies including the (1) National Land Agency Regional Office of East Java; (2) East Java Regional Police and Lapindo Police; (3) Lapindo Land Office ; (4) [sic] (5) Lapindo District Attorney; (6) Lapindo District Development Planning Agency; (7) Village representatives (i.e. Sub-District Head in the Three Districts and 12 Village Chiefs); and (8) the Lapindo Company (amongst others).

BPLS split their responsibilities for social management into three main areas. These are Social Assistance, Social Protection and Social Recovery. BPLS defined social assistance as being; *intended to reduce the social impact in an emergency, whether that occurs because of the impact of*

*a blast or as soil degradation and to implement a precautionary measure as a form of preparedness in case of disaster. It is in relation to these issues, and the benefits and costs involved, that the contingent valuation approach used in this paper focused on.*

**Social Assistance:** BPLS has five (5) main areas of responsibility in relation to their social assistance program. These are to (1) supervise the provision of social assistance; (2) carry out monitoring and implementation of the evacuation of mudflow victims; (3) provide social assistance based on the Presidential Regulation 48/2008; (4) provide water aid; and (5) set up empowerment (training) programs for re-skilling displaced workers.

In terms of the first responsibility, the social assistance provided to affected villagers is to be in terms of (1) life insurance (2) evacuation payment for families and (3) house rental contract monies. These amounts are listed in Table 6. However, an overwhelming majority of those interviewed in 2011 and 2012 were either unhappy with the quantum, or the delay in payment, or both. In terms of the second responsibility, a majority of these evacuees went to the New Market evacuation centre in Porong (PBP). These refugees included permanent residents and a number of seasonal residents. Here, it was clear that whilst the BPLS believed that these refugees were, in the main, willing to move from the PBP after receiving social assistance, again those affected felt that this assistance in the form of cash, home contracts, life insurance and moving expenses (seasonal residents are not given life insurance assistance) was woefully inadequate. The amounts agreed to are given in Table 6, and the comments from the interviewees indicated a significant level of dissent.

In terms of the third responsibility, social assistance as mandated by Presidential Regulation 48/2008 is to provide assistance to residents in three villages, namely Besuki, Kedungcangkring, and Pejarakan. The government's plan was to use the land within the area of these villages as mud storage ponds. This is where mud and water is stored before being discharged into the Porong River. The social assistance took the form of payment for home rental assistance, moving expenses and life insurance. Over 1600 families from these villages were provided with grants totalling around Rp 5 billion (US\$500,000). Despite this, there appear to be significant hardships faced by the victims, indicating that a large quantum of this money has not trickled down to the actual victims. This is very typical in many disaster areas, where thirds parties (including, Aid Agencies, Missionaries, NGOs) skim over 80% of the monies for 'administration'. Of course, corruption can also be a major factor.

In terms of the fourth responsibility, many clean water sources for residents surrounding the disaster area were polluted or damaged by the eruption and mudflows. As a result BPLS was also tasked with providing residents in 12 villages with clean water intended at a rate of 20 litres per person per day. Again, there was a separation between perception and reality with many interviewees complaining that they did not have proper water for some time as they were allocated 20 litres per person per day for all daily needs including cooking; washing and drinking.

In terms of the fifth responsibility, a number of programs have been initiated to enable refugees and those affected by the disaster to improve their lives by learning new skills. Examples of this training include: shoe making, food processing, and carpentry. But the new skills taught, and the numbers actually retrained have been very low. Often, the training is in repetitive blue collar work. This has not sat well with people who had more job flexibility such as farmers. Even former factory workers have complained about these new skills.

**Social Protection:** The principal activities of the Social Protection program are the protection of affected citizens' rights with respect to property that is lost or damaged due to the impact of the mudflow. This protection is supposedly provided within the framework of the implementation of compensation through the sale and purchase of land and buildings, compensation for loss of income caused by the loss of equipment, jobs, farms or because businesses can no longer continue. BPLS have six (6) main areas of focus with respect to the social protection area. These include:

(1) supervision and facilitation of the sale and purchase of affected land and buildings; (2) monitoring and facilitating compensation for failed harvests; (3) compensation for companies that have been forced to cease operating; (4) coordinate compensation for small and medium enterprises (SMEs); (5) managing rallies; and (6) refugee management in new market Porong.

Focus areas 1 – 4 cover economic issues and these are summarised in Table 6; and have been covered in earlier discussions. However, as we know, economic hardships have a direct bearing on social costs.

Focus areas 5 – 6 encompass wider issues. Many demonstrations and rallies have been carried out by affected residents over the years since the first eruption. This is of course completely understandable and indeed within their rights in a democratic Indonesia. However with tensions running high due to the scale and nature of the losses experienced and the complexity of the compensation system; some demonstrations have the potential to turn violent and/or destructive. BPLS has taken on the responsibility to ensure that demonstrations and rallies remain peaceful. They do this by forming a network of cooperation with relevant parties in order to coordinate, monitor, or mediate as the situation requires. BPLS hopes that its involvement makes it easier for affected residents to deliver their demands directly to the Lapindo Company.

In addition to the steps above, BPLS also conducts meetings or makes informal approaches to the representatives of affected citizens to give various explanations or receive clarification regarding their demands or grievances. This is intended to avoid the need for demonstrations and to achieve the desired outcomes for all the parties through negotiation rather than confrontation. However, the researchers attended many rallies at the Lapindo site and found no representative of the BPLS present, and many interviewees claimed that they were, in fact, completely ignored. The only third-party (other than the protesters) encountered by the researchers was the security of the Lapindo Company.

In terms of refugee management, the BPLS has had the difficult task of consulting with, negotiating, and persuading refugees to agree with the compensation packages offered and submit claims in accordance with Presidential Regulation 14/2007 to the verification teams where appropriate. As a result of this consultation the refugees in PBP began to become more cooperative and willing to participate in the compensation process. In July 2008 more refugees began to submit claims to the verification teams and agreed to move from the camp once the initial 20% payment was made by the Lapindo Company. However, when the researchers visited the Lapindo site in 2011, 2012 and 2014, many claims submitted in 2008 had still not had an outcome, and a groundswell of resentment was emerging.

**Social Recovery:** The Social Recovery area focuses primarily on the areas of: (1) emotional stress caused by the loss of homes and livelihoods; (2) general and remedial education; (3) environmental factors; (4) general health of the population; and (5) the dissemination of useful information. The BPLS Social Recovery team's goals are to assist people to better deal with the emotional stresses and go back to being a happy and productive member of their society, and to ensure the people have adequate information, education and counselling to deal with these issues.

The greatest need identified by BPLS within the groups that they deal with is for more information and more discussion surrounding the sale and purchase of land and buildings in Pejarakan, Kedungcangkring, and Besuki. The BPLS is also responsible to monitor and respond to the dynamics of environmental change, the movement of individuals and communities and general social changes and issues that occur. However, although the BPLS believes that the information regarding these issues is distributed widely regarding clean water issues, personal empowerment and counselling services; this was not the view from those interviewed.

In terms of assisting in education issues, the BPLS assisted school children from displaced families in New Porong market to get to school. Also, adult education in the affected area has been sporadically provided over the last eight years so that people have access to information regarding claims and a forum for airing complaints and concerns. BPLS has also facilitated meetings between representatives of education foundations/boarding schools and the Lapindo Company. But as indicated from many interviews like the above, there is much 'noise' and the official channels of communication often break down.

Managing emotional and spiritual problems is aimed at early detection of emotional instability disorders within victims. Groups of volunteers, both psychiatrists and psychologists and counselors, have donated their time and expertise to help deal with these problems. In addition, BPLS has also been carrying out social healing sessions with individuals and small groups of residents who have indicated that they are experiencing emotional issues. The contribution of these volunteers and the better understanding of emotional problems have led to the improvement of the emotional state of residents. Lastly, in the area of empowerment the BPLS arranges skills training for victims allowing them the opportunity to gain meaningful employment (which has been already discussed). Whilst these are moves in the right direction, eight years after the mud disaster, there still are significant emotional and spiritual issues to resolve.

## 5.7 The Predicted Financing Requirements of the Disaster

Unlike many other types of disasters like earthquakes and tsunamis where there is significant loss of life immediately, the Lapindo mudflow has no loss of life due to the disaster itself. In those other types of disasters, the consequent loss of life due to despair and depression was often double the original toll. It is very likely that the Lapindo mudflow has had a similar loss of life due to emotional distress.

However, official numbers recording this are sparse. It was clear from the interviews, however, that these numbers were high, and likely to increase, the more the promised compensation is delayed. Table 6 summarises, as best as possible with the available information, and educated assumptions, the promised compensation and the number of claimants in each category.

Table 6: Contingent Issues of Focus, Claims Agreed and Claimants Affected

	Amount Agreed	Number of Claimants
<b>ECONOMIC</b>		
<b>Accommodation</b>		
Land and Building Compensation	\$15,000 per household on average	25,000
Evacuation Cost / Moving Cost	\$50 per family	25,000
House Lease Assistance/House Rental Contract	2 years of \$500 per family	25,000
Monthly Living Assistance	\$30 per month per person for 9 months	50,000
Provide Food (3 Times/Day) at Shelter Locations	\$2 per person per day	50,000
Provide Amenities and Facilities at Shelter Locations	No Agreement	50,000

	Amount Agreed	Number of Claimants
<b>Agriculture and Farming (The provision of compensation to farmers for mud affected crop failure)</b>		
Compensation for Failed Harvests–Rice Fields	\$2,000 on average per failed harvest	1,000
Compensation for Failed Harvests–Farms	\$200 on average per failed harvest	1,000
Compensation for Loss of Future Livelihood	Not given	1,000
<b>Business</b>		
Temporarily Factory Relocations	\$50,000 on average per factory relocated	10
Permanent Factory Relocations	\$15,000 on average per factory relocated	10
Evacuation Support	\$1,600 on average per factory	
Small Business Compensation	\$1,500 on average per small business	300
Salary Assistance for workers of Affected Factories	\$70 per worker per month.	2,500
Compensation for Companies that have been Forced to Cease Operating	\$600,000 on average per ceased business	12
<b>ENVIROMENTAL</b>		
Compensation to Villagers Due to Bad Smells, Dust, Noise, etc.	\$30 per person	50,000
Provision of Clean Water to Affected Communities (Water Aid)	20 litres per person per day	50,000
Reduce Social Impacts Experienced by Residents in the Mudflow Prevention Activities	12 villages affected	12
Social Impacts Arising as a Consequence of Geological Deformations that Threaten the Safety of Residents	16 villages affected	16
Social Impacts arising as a Consequence of Geological Deformations that Cause Pollution of Soil and Irrigation Water	16 villages affected	16
<b>SOCIAL</b>		
<b>Health</b>		
Free Medical Services and Facilities	\$5 on average per patient	70,861
Free Hospitalisation	\$50 on average per patient	1,665
Burial Assistance	\$100 per person	200
Cost of Life Assurance and Assistance to Affected Communities	\$30 per person for 9 months	37,151
Refugee Management	Not Disclosed	
<b>Education</b>		
School Educational and Transport Assistance	\$5,000 spent in total	
Empowerment Programs (Skills Training)	Not disclosed	



	Amount Agreed	Number of Claimants
<b>Other Social</b>		
Better Deal with the Emotional Stresses	Not disclosed	
Provide Information, Education and Counselling	Not disclosed	
Managing Emotional and Spiritual Problems	Not disclosed	
Source: Public Records and Interviews		

The principal focus of the paper was to provide a comparison between the disaster financing predictions made using economic calculations; and the incremental financing required using contingent valuation techniques, i.e. the amount of financing that will better alleviate the human suffering. For the disaster financing (economic) predictions, the researchers used secondary sources.

Brawijaya University published a comprehensive report on the predicted financing costs, using pure economic valuation methodologies, and these are presented in Table 8 (BPK – RI, 2007, Richards, 2011). In terms of the expenditure for *Land, Building & Infrastructure Costs*, the researchers used the same values for their contingent value calculations, as the scope of the interviews did not cover these valuations.

However, the interviews were designed to obtain the contingent value of the *Cost of Business Interruption*, such as relocation and compensation costs and the replacing employees' wages of the inundated companies, and considering that there were over 2,500 workers involved initially. Here many assumptions had to be made. For example, it was assumed that the number of unemployed workers will whittle to a hard core of 500 by year 6 (as we uncovered) but that even those employed were not happy with their change of circumstance, and thus all workers will have a claim to be supported for 10 years in total. Contingent value calculations were also done for the *Cost for Housing and Moving* which included house purchasing, leasing for a two-year period and once-off moving costs.

This information was then used by the researchers as a starting point to pose CVM questions to the interviewees, as to what incremental finance would be needed to alleviate the economic, environmental and social costs of the mud disaster. From these interviews, averages were calculated for each contingent issue as to the incremental finance required, and the number of claimants outstanding.

The incremental financing calculations were limited to the period 2012-2015 (4 years) so as to compare with other economic calculations, and also place a finite date as to compensation (i.e. up to 10 years after disaster). All future cash flows were discounted at a 15% cost of capital. This is presented in Table 7, and shows that total incremental contingency financing costs of approximately \$200 million would alleviate the economic, environmental and social costs suffered by those affected by the mud disaster.

Table 7: Contingent Issues of Focus and Incremental Financing Needs

Contingency Issue	Contingency Needs	Estimated Number of Claimants	Present Contingent Value
<b>ECONOMIC</b>			
<b>Accommodation</b>			
Land and Building Compensation	\$15,000 per household on average over 4 years	5,000	\$61,560,471
Evacuation Cost/Moving Cost	\$500 per family on average over 4 years	2,500	\$1,026,008
House Lease Assistance/House Rental Contract	\$500 per family per year for 4 more years	5,000	\$8,208,063
Monthly Living Assistance	\$50 per month per person for 4 more years	20,000	\$39,398,701
Provide Food (3 Times/Day) at Shelter Locations	\$2 per person per day for 4 more years	5,000	\$11,983,772
Provide Amenities and Facilities at Shelter Locations	\$1 per person per day for 4 more years	5,000	\$5,991,886
<b>Agriculture and Farming (The provision of compensation to farmers for mud affected crop failure)</b>			
Compensation for Failed Harvests–Rice Fields	\$2,000 on average per year per failed harvest for 4 more years	500	\$3,283,225
Compensation for Failed Harvests–Farms	\$1,000 on average per year per failed harvest for 4 more years	500	\$1,641,613
Compensation for Other Loss of Future Livelihood	\$1,000 on average per year for 4 more years	1,000	\$3,283,225
<b>Business</b>			
Temporary Factory Relocations	\$50,000 averaged over 4 years per factory relocated	10	\$410,403
Permanent Factory Relocations	\$15,000 averaged over 4 years per factory relocated	10	\$123,121
Evacuation Support	\$1,600 averaged over 4 years per Factory	10	\$13,133
Small Business Compensation	\$1,500 on average per Small Business for 4-more years	500	\$2,462,419
Salary Assistance for Workers of Affected Factories	\$70 per worker per month for 4 more years	2,500	\$6,894,773



<b>Contingency Issue</b>	<b>Contingency Needs</b>	<b>Estimated Number of Claimants</b>	<b>Present Contingent Value</b>
Compensation for Companies that have been Forced to Cease Operating	\$600,000 averaged over 4 years per ceased business	12	\$5,909,805
<b>ENVIROMENTAL</b>			
Compensation to Villagers Due to Bad Smells, Dust, Noise, etc	\$100 per person per year for 4 more years	30,000	\$9,849,675
Provision of Clean Water to Affected Communities (Water Aid)	\$1 per day per person for 4 more years	30,000	\$35,951,315
Reduce Social Impacts Experienced by Residents in the Mudflow Prevention Activities	\$3,000 per village averaged over 4 years	12	\$29,549
Social Impacts Arising as a Consequence of Geological Deformations that Threaten the Safety of Residents	\$5,000 per village averaged over 4 years	16	\$65,665
Social Impacts Arising as a Consequence of Geological Deformations that Cause Pollution of Soil and Irrigation Water	\$5,000 per village averaged over 4 years	16	\$65,665
<b>SOCIAL</b>			
<b>Health</b>			
Free Medical Services and Facilities	\$10 on average per patient per year for 4 more years	70,000	\$2,298,258
Free Hospitalisation	\$50 on average per patient per year for 4 more years	2,000	\$328,323
Burial Assistance	\$100 per person averaged over 4 years	100	\$8,208
Cost of Life Assurance and Assistance to Affected Communities	\$30 per person per year for 4 more years	35,000	\$3,447,386
Refugee Management	\$100 per person per year for 4 more years	20000	\$6,566,450
<b>Education</b>			
School Educational and Transport Assistance	\$50,000 per year for 4 more years	1	\$328,323
Empowerment Programs (Skills Training)	\$10,000 per year for 4 more years	1	\$164,161
<b>Other Social</b>			
Better Deal with the Emotional Stresses	\$5,000 per year for 4 more years	1	\$65,665
Provide Information, Education and Counselling	\$2,000 per year for 4 more years	1	\$32,832
<b>Total Incremental Contingency Financing Costs</b>			<b>\$211,392,091</b>

The present contingent values of the incremental financing required (Table 7) was then incorporated into the economic financing costs already estimated by the Brawijaya University report on economy impacts assessment of the mudflow in 2006; in order to predict the financial costs for replacement based on both the economic and contingency components. This is presented in Table 8.

In the case of **Environmental Costs** of handling the mud, and the social disruption costs that were a consequence, the researchers used the same values for stopping the eruption and surface management costs, as the scope of the interviews did not cover these valuations. However, it did cover the environmental social impacts caused by the disruption to the fabric of the society caused by the disaster and its aftermath. Finally, in terms of **Social Costs**, the interviews were designed to obtain the contingent values of (1) the cost of social welfare such as free health and education; (2) the management of emotional and spiritual problems; (3) information, education and counselling; and (4) empowerment and re-skilling costs. These are presented in Table 8.

*Table 8: Prediction of the Financial Cost for Replacement Based on the Economic and Contingency Components 2006–2015 (US\$)*

No.	Cost Component	The Predition Value (US\$)	
		Economic Values	Contingent Values
<b>1</b>	<b>Land, Building &amp; Infrastructure Costs</b>		
	1. Land Destroyed	127,091,000	127,091,000
	2. Buildings Destroyed	108,012,000	108,012,000
	3. Replacing Productive Land	47,711,000	47,711,000
	4. Infrastructure Breakdown Costs	9,140,000	9,140,000
	<i>Sub Total</i>	291,954,000	291,954,000
<b>2</b>	<b>The Cost of Agriculture/ Business Interruption</b>		
	1. Relocation/Compensation Costs	30,865,000	166,921,849
	2. Replacing employees wages	901,000	7,795,773
	<i>Sub Total</i>	31,766,000	174,717,622
<b>3</b>	<b>The Cost for Housing and Moving</b>		
	1. House Purchase/Lease	1,665,000	9,873,063
	2. Moving Costs	174,000	7,779,591
	<i>Sub Total</i>	1,839,000	17,652,654
<b>4</b>	<b>Environmental Costs (Handling the Mud)</b>		
	1. To Stop the Eruption	84,175,000	84,175,000
	2. Surface Management	99,675,000	99,675,000
	3. Environmental Social Impacts	1,272,000	47,233,868
	<i>Sub Total</i>	185,122,000	231,083,868

No.	Cost Component	The Predition Value (US\$)	
		Economic Values	Contingent Values
<b>5</b>	<b>Social Costs</b>		
	The Cost of Social Welfare (Health/ Education/Insurance)	5,611,000	12,013,289
	1. Managing Emotional and Spiritual Problems	0	65,665
	2. Information, Education and Counselling	0	32,832
	Empowerment and Re-Skilling	0	164,161
	<i>Sub Total</i>	5,611,000	12,275,947
	<b>TOTAL</b>	<b>\$516,292,000</b>	<b>727,684,091</b>
Source (Economic Financing Costs): Brawijaya University Report on Economy Impacts Assessment of the Mud Flow 2006			
Source (Contingent Financing Costs): Interviews with Stakeholders 2010–2013			

Table 9: Prediction of Economic and Financial Costs to Lapindo and the Surrounding Regions in the period of 2006–2015

Economic Costs	Economic Costs*	Contingency Costs**
Direct Economic Cost (Table 3)	2,093,722,000	2,093,722,000
Indirect Economic Cost (Table 4)	748,618,510	748,618,510
Economic Cost for Recovering (Table 5)	<u>589,386,000</u>	<u>589,386,000</u>
Total Economic Cost	<b>3,431,726,510</b>	<b>3,431,726,510</b>
Financial Cost (Table 8)	<u>516,292,000</u>	<u>727,684,091</u>
Total Economic and Financing Costs	<b>3,948,018,510</b>	<b>4,159,410,601</b>
Gap (Economic Cost vs. Financial Cost)		<b>211,392,091</b>
<b>Note:</b>		
1. Economic Cost: The value of the negative effect to the assets and people's income		
2. Financial Cost (Economic): The value of cash that has been paid plus commitments		
3 Financial Cost (Contingent): The value of cash that should have been paid based on interviews.		
Source: Brawijaya University Report on Economy Impacts Assessment of the Mud Flow 2006		

It should be noted that if the extra \$200 million compensation is provided, the estimates of the difference between contingent costs and financial costs to Lapindo totalled to US\$2.7 billion. The gap may have to be borne by the people in and around Lapindo Regency. This gap has certainly decreased their quality of life and slowed the development of the Regency.

## 5.8 Summary

This paper examines the impact of the Lapindo mudflow disaster in East Java province, and considers its long-term impact to the economy, the environment and the society in the surrounding region. This paper values the total cost of this unprecedented human disaster using a mixed-valuation method, termed 'Contingent Loss Assessment', which integrates the economic loss assessment of the disaster with a contingent valuation of the environmental and social costs.

The study was completed in 2014, and avoids a characteristic common to all natural disasters in that damage estimates calculated shortly afterward tend to be significantly overstated. The reasons

given for such an overestimation is that it gets more media attention and increases political leverage over federal disaster assistance monies. The fact that Lapindo had no direct human lives lost also could result in an overestimation of monetary losses. However, eight years after the event, these media and politically driven estimations are replaced by harsh realities of consequential human suffering.

Disaster losses manifest themselves in numerous ways and, unfortunately, can never be estimated with absolute certainty. In this paper, for economic assets (e.g. physical assets) the valuations were obtained from secondary sources (BPK – RI, 2007, Richards, 2011) in which discounted values were used, where period zero was the disaster year of 2006, with a 10-year life to 2015. Given that six years have already passed, and the mudflow is expected to continue (by some estimates) for up to 30 years or more, perhaps a 10-year life is too short. Economic values were, however, not the primary focus of the paper. The focus of the paper instead was to provide a comparison between the disaster financing predictions provided using economic calculations and the amount of financing that will better alleviate the human suffering, valued in monetary terms, using contingent valuation techniques.

Calculating the economic costs involved, estimating the aggregate impacts on economic variables like gross domestic product (GDP), consumption and inflation due to the effects of disasters, as well as the estimation of the reallocation of government resources for relief and reconstruction efforts. The economists quoted in the paper have attempted to measure the economic cost of the disaster by estimating two separate types of losses: direct and indirect. The *direct losses* calculated consisted of the crops, buildings or structures that were destroyed or damaged as a result of the mudflow (Table 3). *Indirect secondary losses* were the consequences of the direct losses. These included the cost of lost output, retail sales, wages and work time, additional time transporting goods or commuting to work (reduced leisure), additional costs to business from rerouting goods and services around the affected area, utility disruptions, reduced taxable receipts, lost tourism and increased financial market volatility (Table 4). In addition to the direct and indirect costs, to assess the full *macroeconomic* impact of the disaster, an estimation of the relief and restoration effort to ‘recover’ the land, business and infrastructure needs to be done. These effects cannot simply be added to the direct and indirect effects without causing duplication, as they are partially accounted for by those already. As such, only the incremental economic costs to ‘recover’ the land, business and infrastructure are presented in Table 5.

In addition to the economics costs, the environmental and social consequences also have economic repercussions, since loss of business and livelihoods can affect human health and well-being. In terms of the social consequences relating to environmental issues, there are social impacts experienced by residents who are displaced by mudflow prevention activities, and as a consequence of geological deformations that threaten the safety of residents. Social impacts also arise as a consequence of geological deformations that cause pollution of soil and irrigation water. In terms of societal impacts, in addition to health and education issues, affected people need to be counselled to better deal with the emotional stresses caused by the disruption to their family and their social fabric. Communication is important in terms of disseminating information, re-skilling and counselling in managing emotional and spiritual problems. The economic predictions of the financing agreed to meet these costs are presented in Table 8, column 1. This paper used the contingent valuation method (CVM) to provide an alternative financing model, and this is presented in Table 8, column 2. A comparison of the two columns show that the predicted *economic financing costs* of the disaster falls far short of the predicted *CVM financing costs* needed to alleviate the human suffering that is still present eight years after the disaster. It is argued that this difference, an extra \$200 million flowing directly to those affected, is not an amount that is beyond the scope of those who have undertaken the responsibility of providing compensation to those affected.

Note that as the CVM involves directly asking people, in a survey, how much they would be willing to pay/accept to alleviate a specific environmental or social issue, it is called “contingent” valuation, because people are asked to state their willingness to pay/accept, contingent on a description of a specific environmental or social service. The fact that the contingent valuation method is based on asking people questions, as opposed to observing their actual behaviour, is the source of enormous controversy. Many economists, psychologists and sociologists, for many different reasons, do not believe the dollar estimates that result from CV are valid. This remains a limitation of this paper, and the results should be interpreted with caution.

Table 9 also shows that *economic financing costs* and the *contingent financing costs* of the disaster falls far short of the actual economic costs of the disaster by 2.9 and 2.7 billion dollars respectively. This is the gap that is being borne by the people in and around Lapindo Regency whose quality of life has decreased at a micro-level, and slowed the development of the Regency at the macro-level.

## REFERENCES

- ADB (2002) *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*, Economics and Research Department (ERD), Asian Development Bank, Manila, Philippines.
- Ananda, C. (2007) Development and Environment in East Java Province, in *Empowering Regional Economic Development toward Sustainable Poverty Alleviation*, Ananda, C.F. Resosudarmo, B.P and Nazara, S. (Editors), Indonesian Regional Science Association, Jakarta, Indonesia.
- BPK–RI (2007) *Auditing the Hot Mud Eruption In Lapindo, East Java, Indonesia with Environmental Perspectives* A paper prepared for the Eleventh Meeting of INTOSAI-WGEA, June 28, Arusha, Tanzania.
- Brookshire, D. and McKee, M. (1992) *Other Indirect Costs and Losses from Earthquakes*. Final report by Development Technologies to the Federal Emergency Management Agency (FEMA): Indirect Economic Consequences of a Catastrophic Earthquake (Track A Scoping Study), Washington, D.C., U.S.A.
- Friends of the Earth International (2007) Lapindo Brantas and the Mud Volcano, Lapindo, Indonesia, June, *Background paper*, [http://www.foeeurope.org/publications/2007/LB\\_mud\\_volcano\\_Indonesia.pdf](http://www.foeeurope.org/publications/2007/LB_mud_volcano_Indonesia.pdf) (Accessed 8 March 2011).
- McMichael, H. (2009). “The Lapindo mudflow disaster: environmental, infrastructure and economic impact,” *Bulletin of Indonesian Economic Studies*, 45:1, 73– 83.
- Plumlee, G.S., Casadevall, T.J., Wibowo, H.T., Rosenbauer, R.J., Johnson, C.A., Breit, G.N., Lowers, H.A., Wolf, R.E., Hageman, P.L., Goldstein, H., Anthony, M.W., Berry, C.J., Fey, D.L., Meeker, G.P and Morman, S.A. (2008) *Preliminary Analytical Results for a Mud Sample Collected from the LAPINDO Mud Volcano, Lapindo, East Java, Indonesia*, U.S. Geological Survey Open-File Report 2008-1019, USGS, Reston VA, U.S.A.
- Richards, J.R. (2011) *Report into the Past, Present and Future Social Impacts of Lumpur Lapindo*, Humanitus Lapindo Fund, Humanitus Foundation, Australia.
- Rumiati, T. (2007) Analisa resiko terhadap hasil prediksi aspek teknis 5 tahun [Risk analysis of technical aspects of 5-year prediction results], in *Analisis Resiko Bencana Lumpur Porong, Skala Lokal Lapindo dan Skala Regional Jawa Timur* [Porong Mud Disaster Risk Analysis, Lapindo Local and

*East Java Regional Scale*], Report published by the Department of the Environment and the Surabaya Institute of Technology, August, Surabaya, Indonesia.

Santosa, B.H. and McMichael, H. (2004) Industrial development in East

Java: A special case?, *Working Papers in Trade and Development No. 2004-07*, College of Asia and the Pacific, Australian National University, November, Canberra, Australia.

Setiadi, R. (2007) Memantau Daerah Menyemai Kemajuan: Otonomi Daerah Dan Otonomi Award Di Jawa Timur [Observing the Regions Propagating Progress: Regional Autonomy and the East Java Autonomy Awards], *Jawa Pos Institute of Pro Otonomi*, January, Surabaya, Indonesia.

Timson, L. and Ker, P. (2015) Now the river is dead — BHP's mud disaster Sunday explainer, *Sydney Morning Herald*, <http://www.smh.com.au/world/sunday-explainer-now-the-river-is-dead—bhps-mud-disaster-20151127-gla1l0.html> (Accessed Dec 8 2015).

UNEP (2008) *Evaluation of Mud Flood Disaster Alternatives in Lapindo Regency, Draft Final Report*, United Nations Environment Programme, June, Jakarta, Indonesia.

World Bank and Asia Foundation (2005) *Improving the Business Environment in East Java: Views from the Private Sector*, The World Bank and The Asia Foundation, Jakarta, Indonesia.

Yahya, K. (2007) *Tantangan Penyelesaian dan Penanggulangan Lumpur Porong [The Challenge of Solving and Overcoming the Porong Mud Problem]*, PowerPoint presentation for briefing to Lapindo Mudflow Handling Agency, February, Jakarta, Indonesia.

## APPENDIX

<b>A Comparison of Valuation Methods</b>		
<b>Dollar-based Valuation Methods</b>	<b>Advantages</b>	<b>Limitations</b>
<b>Market Price Method</b>	The market price method reflects an individual's willingness to pay for costs and benefits of goods that are bought and sold in markets, such as fish, timber, or fuel wood. Thus, people's values are likely to be well-defined. Price, quantity and cost data are relatively easy to obtain for established markets. The method uses standard, accepted economic techniques.	<ol style="list-style-type: none"> <li>1. Market data may only be available for a limited number of goods and services provided by an ecological resource and may not reflect the value of all productive uses of a resource.</li> <li>2. The method cannot be easily used to measure the value of larger scale changes that are likely to affect the supply of or demand for a good or service.</li> <li>3. Usually, the market price method does not deduct the market value of other resources used to bring ecosystem products to market, and thus may overstate benefits.</li> </ol>
<b>Productivity Method</b>	<ol style="list-style-type: none"> <li>1. In general, the methodology is straightforward.</li> <li>2. Data requirements are limited, and the relevant data may be readily available, so the method can be relatively inexpensive to apply.</li> </ol>	<ol style="list-style-type: none"> <li>1. The method is limited to valuing those resources that can be used as inputs in production of marketed goods.</li> <li>2. When valuing an ecosystem, not all services will be related to the production of marketed goods. Thus, the inferred value of that ecosystem may understate its true value to society.</li> <li>3. Information is needed on the scientific relationships between actions to improve quality or quantity of the resource and the actual outcomes of those actions. In some cases, these relationships may not be well known or understood.</li> <li>4. If the changes in the natural resource affect the market price of the final good, or the prices of any other production inputs, the method becomes much more complicated and difficult to apply.</li> </ol>

<b>A Comparison of Valuation Methods</b>		
<b>Dollar-based Valuation Methods</b>	<b>Advantages</b>	<b>Limitations</b>
<b>Hedonic Pricing Method</b>	<ol style="list-style-type: none"> <li>1. The method's main strength is that it can be used to estimate values based on actual choices.</li> <li>2. Property markets are relatively efficient in responding to information, so can be good indications of value.</li> <li>3. Property records are typically very reliable.</li> <li>4. Data on property sales and characteristics are readily available through many sources, and can be related to other secondary data sources to obtain descriptive variables for the analysis.</li> <li>5. The method is versatile, and can be adapted to consider several possible interactions between market goods and environmental quality.</li> </ol>	<ol style="list-style-type: none"> <li>1. The scope of environmental benefits that can be measured is limited to things that are related to housing prices.</li> <li>2. The method will only capture people's willingness to pay for perceived differences in environmental attributes, and their direct consequences.</li> <li>3. Thus, if people aren't aware of the linkages between the environmental attribute and benefits to them or their property, the value will not be reflected in home prices.</li> <li>4. The method assumes that people have the opportunity to select the combination of features they prefer, given their income. However, the housing market may be affected by outside influences, like taxes, interest rates, or other factors.</li> <li>5. The results depend heavily on model specification. Large amounts of data must be gathered and manipulated.</li> <li>6. The time and expense to carry out an application depends on the availability and accessibility of data.</li> </ol>
<b>Travel Cost Method</b>	<ol style="list-style-type: none"> <li>1. The travel cost method closely mimics the more conventional empirical techniques used by economists to estimate economic values based on market prices.</li> <li>2. The method is based on actual behaviour—what people actually do—rather than stated willingness to pay—what people say they would do in a hypothetical situation.</li> <li>3. The method is relatively inexpensive to apply.</li> <li>4. On-site surveys provide opportunities for large sample sizes, as visitors tend to be interested in participating.</li> <li>5. The results are relatively easy to interpret and explain.</li> </ol>	<ol style="list-style-type: none"> <li>1. The travel cost method assumes that people perceive and respond to changes in travel costs the same way that they would respond to changes in admission price.</li> <li>2. The availability of substitute sites will affect values.</li> <li>3. Defining and measuring the opportunity cost of time, or the value of time spent traveling, can be problematic.</li> <li>4. The travel cost method is limited in its scope of application because it requires user participation.</li> <li>5. As in all statistical methods, certain statistical problems can affect the results.</li> </ol>



<b>A Comparison of Valuation Methods</b>		
<b>Dollar-based Valuation Methods</b>	<b>Advantages</b>	<b>Limitations</b>
<b>Damage Cost Avoided, Replacement Cost, and Substitute Cost Methods</b>	<ol style="list-style-type: none"> <li>1. The methods may provide a rough indicator of economic value, subject to data constraints and the degree of similarity or substitutability between related goods.</li> <li>2. It is easier to measure the costs of producing benefits than the benefits themselves, when goods, services, and benefits are non-marketed. Thus, these approaches are less data- and resource-intensive.</li> <li>3. Data or resource limitations may rule out valuation methods that estimate willingness to pay.</li> </ol>	<ol style="list-style-type: none"> <li>1. The replacement cost method requires information on the degree of substitution between the market good and the natural resource. Few environmental resources have such direct or indirect substitutes.</li> <li>2. The methods may be inconsistent because few environmental actions and regulations are based solely on benefit-cost comparisons, particularly at the national level. Therefore, the cost of a protective action may actually exceed the benefits to society.</li> </ol>
<b>Contingent Valuation Method</b>	<ol style="list-style-type: none"> <li>1. Contingent valuation is enormously flexible in that it can be used to estimate the economic value of virtually anything.</li> <li>2. CVM is the most widely accepted method for estimating total economic value, including all types of non-use, or "passive use," values. CVM can estimate use values, as well as existence values, option values, and bequest values.</li> <li>3. Though the technique requires competent survey analysts to achieve defensible estimates, the nature of CVM studies and the results of CVM studies are not difficult to analyse and describe. Dollar values can be presented in terms of a mean or median value per capita or per household, or as an aggregate value for the affected population.</li> <li>4. CVM has been widely used, and a great deal of research is being conducted to improve the methodology, make results more valid and reliable, and better understand its strengths and limitations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Considerable controversy over whether it adequately measures people's willingness to pay for environmental quality.</li> <li>2. The expressed answers to a willingness to pay question in a CVM format may be biased because the respondent is actually answering a different question than the surveyor had intended.</li> <li>3. Respondents may make associations among environmental goods that the researcher had not intended.</li> <li>4. Some researchers argue that there is a fundamental difference in the way that people make hypothetical decisions relative to the way they make actual decisions.</li> <li>5. The valuations have an "embedding effect."</li> <li>6. Strategic bias arises when the respondent provides a biased answer in order to influence a particular outcome.</li> <li>7. Estimates of non-use values are difficult to validate externally.</li> <li>8. When conducted to the exacting standards of the profession, contingent valuation methods can be very expensive and time-consuming, because of the extensive pre-testing and survey work.</li> </ol>

<b>A Comparison of Valuation Methods</b>		
<b>Dollar-based Valuation Methods</b>	<b>Advantages</b>	<b>Limitations</b>
<b>Contingent Choice Method</b>	<ol style="list-style-type: none"> <li>1. The contingent choice method can be used to value the outcomes of an action as a whole, as well as the various attributes or effects of the action.</li> <li>2. The method allows respondents to think in terms of tradeoffs, which may be easier than directly expressing dollar values.</li> <li>3. The method minimizes many of the biases that can arise in open-ended CVM studies where respondents are presented with the unfamiliar and often unrealistic task of putting prices on non-market amenities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Respondents may find some tradeoffs difficult to evaluate, because they are unfamiliar.</li> <li>2. When presented with a large number of trade-off questions, respondents may lose interest or become frustrated.</li> <li>3. Contingent choice may extract preferences in the form of attitudes instead of behaviour intentions.</li> <li>4. By only providing a limited number of options, it may force respondents to make choices that they would not voluntarily make.</li> <li>5. Translating the answers into dollar values, may lead to greater uncertainty in the actual value that is placed on the good or service of interest.</li> </ol>
<b>Benefit Transfer Method</b>	<ol style="list-style-type: none"> <li>1. Economic benefits can be estimated more quickly than when undertaking an original valuation study.</li> <li>2. The method can be used as a screening technique to determine if a more detailed, original valuation study should be conducted.</li> <li>3. The method can easily and quickly be applied for making gross estimates of recreational values. The more similar the sites and the recreational experiences, the fewer biases will result.</li> </ol>	<ol style="list-style-type: none"> <li>1. Benefit transfer may not be accurate, except for making gross estimates of recreational values, unless the sites share all of the site, location, and user specific characteristics.</li> <li>2. It may be difficult to track down appropriate studies, since many are not published.</li> <li>3. Adequacy of existing studies may be difficult to assess.</li> <li>4. Benefit transfers can only be as accurate as the initial value estimate.</li> <li>5. Extrapolation beyond the range of characteristics of the initial study is not recommended.</li> </ol>
Source: <a href="http://www.ecosystemvaluation.org/uses.htm">http://www.ecosystemvaluation.org/uses.htm</a>		



# 6

## **BUSINESS VALUATION OF SOCIAL ENTERPRISE: EXPLORING CURRENT UNDERSTANDINGS AND ALTERNATIVES**

*by Jackie Csonka-Peeren, MASC, PEng, MBA*

“Young entrepreneurs are creating Ontario’s future.”  
– Hon. Kathleen Wynne, Premier of Ontario

“Social entrepreneurs are not content just to give a fish or  
teach how to fish. They will not rest until they have revolutionized  
the fishing industry.” – Bill Drayton

As the nature of employment changes, entrepreneurship becomes a more viable and alluring alternative. Entrepreneurial competencies are already being nurtured in high school to foster self-reliant graduates who can create their own jobs and jobs for others.

My area of expertise is in funding new ventures. Over the years I have met many hundreds of entrepreneurs at the startup stage, and I am always inspired by entrepreneurs who are starting businesses with not only a motivation to make profit, but also to create social impact. The companies formed by these startup entrepreneurs are the target of this research. These are incorporated businesses called ‘for-profit social enterprises’ and are responsible for the design and commercialization of new and improved products and processes in diverse socially important fields such as education, transportation, health care, habitation, child care and community social networks. These businesses are clearly different from not-for-profit organizations that have missions to provide social services and different from advocacy groups which have specific not-for-profit missions. As is done in the business school where I teach, the terms ‘social enterprises’ and ‘social entrepreneurs’ are used to describe these companies and their founders.

Because of my work with entrepreneurs, I am aware of significant challenges that exist for them in their new ventures. The most acute of these is remaining solvent during the early years of their startups’ existence. Typically, they can only achieve this through external funding.

The social enterprise receives external funding through incentives and financing. Some incentives already exist for social enterprise such as youth employment grants and Scientific Research and Experimental Development (SR&ED) tax credits. Five-year financial forecasts are the basis on which a startup raises money and business valuation is a key part of that fundraising process.

Traditionally, a corporation in Canada is understood to be driven by profit motive alone, and this is used as the basis of many commonly accepted methods of business valuation. Business valuation is ultimately concerned with cash flows and risks associated with those cash flows.

This research confirmed my hypothesis that business valuation is currently limited in its ability to capture the social impact that is created by social entrepreneurs. This is because social value does not necessarily affect the cash flows of a social enterprise in the near term, and in many cases even in the longer term.

This does not appear to be the fault of business valuation methodologies but rather the limited ways currently available to social entrepreneurs for measuring both current and projected values of cash flows and risk related to their social impact. With a better understanding of social enterprises, business valuers can help with this.

## 6.1 Introduction

My motivation for this project was to explore the views and opinions of others beside myself who are interested in social impact, and perhaps to get a conversation started about where this could and should lead. Consequently, this project included interviewing stakeholders who have both an interest in the value of social impact and whose organizations make use of methodologies to measure social impact.

During this interview process, it became evident that the phrase ‘value of social impact’ was interpreted in several different contexts by the interviewees. So for clarity, I will try to distinguish between these before moving forward. The phrase ‘value of social impact’ appeared to be interpreted in one of three ways, depending on the context of the interviewee:

*The first was in the context of social impact metrics used for Corporate Social Responsibility reporting.* Some large, established corporations have developed internal initiatives that measure social impact and sustainability. A company’s efforts to quantify, evaluate and adapt its social and environmental impact can go by many names including: Corporate Responsibility (CR), Corporate Social Responsibility (CSR), Sustainability or Corporate Citizenship, or Environmental Social Governance (ESG). These large corporations devote dedicated and often numerous staff to the task, and the process results in multiple documents which can total thousands of pages. These are used by large corporations with established operations and strong brands to address risks related to both of these. These CSR reporting benefits would not be immediately transferable to a new growing startup that is still looking to establish itself in the market. Also, the CSR process itself appears prohibitively cumbersome to a new and growing venture and as such is also not immediately transferable. More suitable methodologies might best be sought elsewhere to begin.

Additional background information gathered about CSR can be found in Appendix C.

*The second is in the context of social impact metrics used for non-financial reporting.* These metrics are used primarily by non-profits to measure and report their social impact as a requirement for securing grants and subsidies. These would be metrics such as number of lives saved, number of lives improved, number of post-secondary education graduates, and the like.

So called ‘B-Corporations’ are rising in popularity worldwide. These are for-profit companies that become certified as having met certain social metric standards. In particular, Certified B-Corporations (B-Corps) have to demonstrate that they meet rigorous standards of social and environmental performance, accountability, and transparency. B-Corps use social impact metrics for this non-financial reason.

Several organizations have developed tools that these non-profits or B-Corps can use to measure social impact or meet B-Corp certification standards. These organizations include (in alphabetical order) Acumen Fund’s Best Alternative Charitable Option, Compass Assessment for Investors, Guidelines for Good Impact Practice, Global Impact Investing Rating System (GIIRS), Pacific

Community Ventures' Social Return Assessment, Social Return on Investment (SROI) and Sustainable Livelihoods.

Third-party metric providers also help provide analysis of social impact. These include Purpose Capital, SiMPACT Strategy Group Canada, Social Asset Measurements (SAM) and Sustainalytics Canada. In 2013, Alterna Savings & Credit Union was the first in the Canadian banking system to use such a measurement framework (namely SAM) for its microfinance program.

More details about the existing frameworks of these organizations can be found in Appendix D, which may be a useful reference for business valuers.

*Finally, the third is in the context of social impact metrics used for valuation of a company.* These are factors directly related to current or anticipated cash flows or risk associated with those cash flows, and to market comparable companies.

Regarding risk associated with cash flows, today investors commonly use one of three methods to account for not only social impact, but also environmental impact and/or governance of a firm. These methods are adjusting the beta, adjusting the equity risk premium or adjusting the discount rate. For example, Citi assessed the impact that factors such as health and safety, and governance might have on a mining project, and adjusted the beta accordingly.<sup>1</sup> However, these refer to metrics about a company's internal operations only; in other words, those social impact metrics that related only to enterprise risk and not societal risks.

Other factors related to valuing a business are cash flows. While the cost of capital can be higher for socially irresponsible firms, socially responsible firms were not found to commonly enjoy a lower cost of capital.

The exceptions to this are for those companies that qualify and have been successful with existing loan programs for social enterprise. A small number of these programs currently exist and include the Ontario Catapult Microloan Fund, Ottawa Community Loan Fund, Social Enterprise Fund (Edmonton, AB) and La Fiducie du Chantier de l'Économie Sociale (Quebec, QC). Further detail about these loan programs are listed in Appendix E, which business valuers may find useful.

With regards to market comparables, finding publicly available financial data from similar social enterprises can be difficult. However, those that exist can be found on a growing number of public exchanges, portals and in funds specializing in social enterprise. Indeed, these may be an excellent source of market comparables. These include the Johannesburg Stock Exchange, the United Kingdom's Social Stock Exchange, Canada's SVX, Asia's Impact Investment Exchange (IIX) Singapore, S&P/TSX Renewable Energy & Clean Technology Index Canada, Jantzi Social Index, Meritas Mutual Funds, iShares ETF, Dow Jones Sustainability™ World Index (or the DJSI World), S&P Carbon Efficient Indices and SXI Switzerland Sustainability 25. More detail about these sources of market comparables data can be found in Appendix F, which may be useful to business valuers.

Also related to cash flows, there exist a limited number of incentive programs such as grants to encourage socially impactful behaviour by companies, e.g., incentives to encourage the hiring of youth. These incentive programs can positively affect cash flow and therefore valuation.

---

1 Crifo, P, Forget, V.D., & Tevssier, S. (2015). "The price of environmental, social and governance practice disclosure: An experiment with professional private equity investors." *Journal of Corporate Finance*, 30, 168-194. Retrieved from <http://www.sciencedirect.com.myaccess.library.utoronto.ca/science/article/pii/S0929119914001588#bb0060?np=y>.

## 6.2 Method

In total, 11 interviews were conducted. Potential interviewees were selected across several stakeholder types to try to get a balance of perspectives from each of the following categories: Investment Manager (including financial institutions), Funding Agency or Government, Service Provider or Association, and Publicly-Listed Corporation (excluding financial institutions). More interview details can be found in Table 1.

The following core questions were posed to all interviewees, and additional questions allowed for interviewees to provide further comments:

- (1) What is your initial reaction to establishing a way for social impact to be valued financially by business valuers? Please state all positive and/or negative comments that come to mind.
- (2) How does your organization currently value social impact, and how satisfied are you with your current approaches? Please describe the pros and cons.
- (3) Why does measuring social impact matter to your clients/members/organization? What would be the benefits to your clients/members/organization of having a standardized way of accounting for social impact in business valuation?

Interviews conducted over the phone or in person were recorded while interview notes were compiled. All of the interview notes were reviewed, and audio recordings were consulted for clarification and correction if necessary. In one case, interview responses were received via email.

More details regarding the method can be found in Appendix A.

## 6.3 Results

Figure 1, at the end of this paper, describes the result of the analysis, namely the emergent themes of the aggregate of interviews and the connections between those themes. The size of each box in Figure 1 is roughly proportional to the amount of response received under each theme.

A sample of representative findings, topics and quotes is provided in Appendix B, grouped by theme.

## 6.4 Discussion

For a new and growing social enterprise looking to establish itself in the market, CSR reporting methodologies used by large corporations to address risks associated with their established operations and strong brands are not immediately useful. Also, the CSR process is prohibitively cumbersome to a new and growing venture. In order to make them practical for a social enterprise, one interviewee described how these would need to be “tools, processes, approaches that are simple enough for [new venture] corporations to use...but not so simple to be meaningless.”

Also, CSR metrics do not necessarily tie into social value created outside of the enterprise, and these can be significantly more impactful than CSR measures. As one social entrepreneur stated, “on CSR metrics, [startups] don’t come out great because our [carbon] footprint will hopefully get larger as we scale...[however] we are 100% [social/environmental] impact because we work to solve an enormous [social/environmental] problem!”

While many tools and third-party metric providers exist (and these are described in the Introduction), these are used primarily by non-profits for non-financial reporting and B-Corporations for certification

purposes. There does not appear to be any current attempt to link these directly to inputs for business valuation such as cash flows or risks associated with those cash flows.

While the ESG methods such as adjusting the beta, equity risk premium or discount rate are common in business valuation, these approaches focus on enterprise risk and as such have virtually no applicability to the new venture that has yet to establish an efficient operation.

In fact, these approaches take into account the social impact external to a firm's operations only to the extent that the company might benefit from additional revenues associated with goodwill or brand value. In the words of one interviewee, "brand value is a function of future cash flows and expectations around those cash flows...a company that has a solid reputation...does not need to spend [as many] advertising dollars to attract customers." However, the benefits of brand have limited significance to the new venture that has yet to establish reputation in its new market.

Furthermore, ESG is a type of CSR metric, which can be cumbersome to measure and report. And since there are no mandatory and clear standards for reporting, a firm may choose not to report some or all of its relevant measures. A recent study found that negative ESG metrics that are reported reduce firm valuation to a greater extent than positive ESG metrics contribute to increasing firm valuation.<sup>2</sup>

Everyday across Canada, entrepreneurs are identifying and solving problems related to new social needs for which incentive programs do not currently exist. Although there exist some incentives to encourage socially impactful behaviour by companies and these can positively affect cash flow and valuation, new incentive programs of this sort typically take a long time to come into existence, often more than five years. Cash flows from incentives that are expected beyond a five-year time horizon are insignificant to a valuation of a new venture, or indeed of any venture.

## 6.5 Conclusions

The 'value of social impact' is an embryonic concept. Respondents interpreted its meaning differently depending on their context (e.g., CSR, non-financial reporting, business valuation). Every stakeholder type expressed a need for improved methodology to measure social impact within their context, particularly in the areas of investing, business decision-making, acquisition and succession planning, and this list is likely not exhaustive. As the executive in an incubator for social enterprise expressed, "most [new social venture company] members are not profit driven, more focused on people/planet, but they are struggling to make good decisions; struggling to understand where they fit/what benefits they bring...don't have financial information to guide them."

Although market comparables of social enterprise may be difficult to find, a number of sources of publicly available data (such as social impact exchanges) exist and list companies that have been vetted for social impact (among other measures). Perhaps business valuers should consider their usefulness when valuing a social enterprise.

For example, these could be helpful when applying the First Chicago method, where forecasted sales are the basis for valuation. This method is commonly used in valuing a pre-revenue company such as a new social enterprise. Should care be taken to match the sales multiples to those of companies that are trading on social enterprise exchanges? Or should business valuers suggest a more appropriate method altogether for valuing a pre-revenue social enterprise; specifically, one that relies on a sales forecast alone?

---

<sup>2</sup> *Ibid.*



Also, further research could investigate expectations around a social enterprise's access to instruments that could increase cash flow, such as the loans described in the Introduction or incentives.

Several frameworks and approaches were suggested by interviewees, including comparables, industry metrics, Sustainability Accounting Standards Board (SASB) and Global Reporting Initiative (GRI). These might be consulted to determine whether there is an opportunity to augment (or keep current) business valuation methodology to value a social enterprise.

More research would need to be done to become familiar with these frameworks mentioned by interviewees and those presented in the Introduction. Each could be considered to determine whether they contained elements that could be applied to improve a business valuator's assessment of future cash flows or risk assessment through the lens of social impact. This could help satisfy one interviewees desire "to attach something numerical to what people deep down know is the right thing to do".

All interviewees who were successfully contacted expressed a desire to be involved in next steps. These could include continuing to engage with these stakeholders to get feedback on these conclusions and recommendations, to get help interpreting the frameworks that were mentioned, and to augment current sources of reference data such as market comparables used in assessing future cash flows and risk assessment of a new social enterprise.

Every day across Canada, entrepreneurs are identifying and solving problems related to new social needs, creating products and processes that will lead to social benefit such as better quality of life, better work-life balance and better emotional health. The social impact they are creating may never translate directly into cash flows from operations, and may never reduce the risk associated with these cash flows, and yet these entrepreneurs continue to remain motivated. To date, business valuers have not had a demand for explicit valuation of social impact. However, as experts, are we doing all we can to help these entrepreneurs recognize and capture the value of the social impact they are creating? Through our collective efforts, could we encourage even more of our innovative entrepreneurs to help solve our social problems?

## **APPENDIX A: PRIMARY INTERVIEW RESEARCH METHOD—ADDITIONAL DETAIL**

The following research methods were used:

### *Interviewee Sampling Strategy*

In total, 19 interviewees were approached and 11 interviews were conducted. Interviewees were chosen across several stakeholder types to try to get a balance of perspectives from each of the following categories: Investment Manager (including financial institutions), Funding Agency or Government, Service Provider or Association, and Publicly-Listed Corporation (excluding financial institutions). More interview details can be found in Table 1.

### *Interview Process*

All interviewees received the same questionnaire in advance of the interview. The interview questionnaire was comprised of a preamble and a core set of open-ended questions to stimulate responses about perspective, preferences and potential benefits of a methodology for valuation of the social impact component of a social enterprise. In the preamble, interviewees were given an explanation of the motivation for the research and assured that the data would be reported anonymously and kept confidential.

### *Method of Analysis of the Results*

Because of the open-ended nature of the interviews, the data was analyzed by inductive research method. The interview notes were coded phrase by phrase using an open-coding method, which involved assigning labels to describe the topic of each relevant phrase. Relevant phrases included those that were repeated, identified by interviewees as important, related to known concepts about metrics and valuation, created a pattern, or fell outside of any pattern.

Next, similar topics were combined to eliminate redundancy. Overarching themes emerged from the perspective of the aggregate responses of participants in the study. Finally, interrelationships between topics were considered in order to identify relationships between the themes such as hierarchy and connections.

## **APPENDIX B:**

### **REPRESENTATIVE INTERVIEW FINDINGS, TOPICS AND QUOTES**

A sample of representative findings, topics and quotes is provided below, grouped by theme. In a given paragraph, phrases within the same set of quotation marks are from the same interviewee. Where multiple sets of quotation marks are used in a paragraph, multiple interviewees expressed related opinions. Any bracket within a quote contains words added by the author to provide additional context for the reader. No attempt was made to list in any order of importance.

#### *General Interest*

- All interviewees expressed interest in receiving the results of the study and in participating in any next steps towards establishing a methodology.

#### *Perceived Need/Fit*

- “There is a lack of professional evaluation of a lot of [socially responsible] funds...[it’s currently] more of a buyer beware situation.”; “[responsible investing] is an ill-equipped marketplace.”
- “could have opportunities for both buyers and sellers of businesses.”
- “On CSR metrics, [startups] don’t come out great because our footprint will hopefully get larger as we scale ... [however] we are 100% [social/environmental] impact because we work to solve an enormous [social/environmental] problem!”
- “there is a hunger for this kind of information [from new venture companies and their advisors].”
- “Models that [better] capture the results of our programs.”
- “to attach something numerical to what people deep down know is the right thing to do.”

#### *Applications...for which there is a perceived need*

- Investing:
  - Investment portfolio management: “for diversified portfolios...bears true value of the business...risk-return assessment [if ‘additive’]...another data input as part of the investment process...discipline, rigour around investment planning: around these criteria, how do they rank?”
  - Investment selection: “People care about financial side first (but have always worried that their money could cause negative impact) ... 90% of people would like to have a socially responsible element to their portfolios—all returns being equal they would prefer it...People have historically thought of it as philanthropy, but the fundamental shift that’s happening is that people believe they can get both financial and social returns.”
  - (benefit) Quality of investments: “Aside from B-Corp there is not much of a certification model for saying which companies are “good” and which are “bad” for investors... Issues that come back with responsible investment funds are quality of investment and liquidity...There is value in anything that would allow to make apples-to-apples comparisons.”
  - (benefit) Promoting liquidity: “Issues that come back with responsible investment funds are quality of investment and liquidity.”
- Business decision-making:
  - Better business decisions: “Increasingly there are organizations that are entirely focused on people and planet, but also have a profit motive as well...[there is] pressure from [new venture companies] members to understand how to make better business decisions”; “Could see it helping in coaching non-profits.”

- Business metrics: “On CSR metrics, [startups] don’t come out great ... The benefit is not in the internal operations but in displacing fossil fuel ...”
- Acquisition: “non-profits looking to buy businesses.”
- Succession planning: “want to start helping social enterprises with business succession planning, so it is good to look at it above and beyond traditional value... so if someone wants to chat more about this...”
- As part of Integrated Reporting (IR): [IR starts by] establishing material issues...[we] do a priority matrix—measures what’s important to company and what’s important to stakeholders ... [this includes] financial health (long-term shareholder value) ...”
- Damage assessment: “[perhaps] in litigation ... maybe [to assess damages for] in human rights litigation.”

### *Challenges...and concerns to be addressed*

- Incompleteness: “There is some concern that some of the qualitative benefits of the social impact may not be accounted for through a financial valuation.”; “Not sure if having one number (e.g. PV Formula) would benefit investors ... investors look for multiple indices when it comes to ESG, so it would be limiting.”; “finance dollars are an aspect of this, but the same way looking at GDP does not necessarily tell us how individuals are doing (what the improvement is), it’s only one metric, there are many others which need to be included (can be scored?)”
- Unintended consequences: “Risk that social impacts that are more easily quantifiable would take precedence over less easily quantifiable social outcomes. This may result in valuations that unfairly and inaccurately favour certain types of social impact over others.”; “The idea of it being financially linked, is compelling, but problematic (interested to see how it might be done/expressed)”; “what are the implications, consequences that it might lead to?”; “It seems to be a useful endeavour to pursue; however, it will be critical to understand how the valuation is being used and by whom.”
- Downside consequences: “Markets tend to react negatively when there are negative news stories [of impact]...[negative news stories] set market expectation that you will lose customers or you will incur costs...whether or not costs will be incurred [to deal with the negative impact]...and then there are actual costs of PR, to reputation, for investigation [which are incurred].”
- “difficulty in finding common metrics”: “there is no standard when dealing with vulnerable populations”; “There are no cookie cutter companies, so it would be very hard to develop a cookie-cutter formula.”
- “Yardstick is what bothers me for many factors impact on social value...what is the yardstick? Is it who has the most news stories?”; “what proxies to use?” ... “what is the S part of SROI?”
- Lack of regulation: “Need to work with policy makers to solve problem...If you don’t price carbon it will always be cheaper to burn coal. Companies won’t change unless you pass law that affects profitability.”; “in order to get data, need regulation”; “responsible investing is not regulated at all...it’s very difficult to ask companies for more information...most mainstream companies don’t want to HAVE to give out more information unless they are required to”; “There already are globally accepted frameworks although the way in which you benchmark isn’t regulated so it isn’t comparing apples to apples...The difficulty is that there already are several standards, but unless it’s regulated it’s hard to see how a universal standard would work...The issue they have is that it’s all voluntary.”
- Affordability: “[The valuation of social impact] would be fantastic but who is going to pay for that? Whenever you add another layer to issuance or valuing a security, there is always a matter of who will pay for it.”

- Availability of data: “Impact data is virtually non-existent.”
- Adoption: “[the valuation of social impact] is a great idea, but difficult to achieve due to adoption...the trouble is with universal adoption”; “a few larger players do ESG analysis—most organizations don’t do it.”
- “lack of transparency”: “It’s hard to say they are calculating [IR] things in the same way as other companies.”; “there is a lot of greenwashing.”

### *Existing Frameworks... or approaches that may be helpful in developing methodology*

- Existing Valuation Standards: “Valuation is about the ability to generate future cash flows and risk associated with those cash flows...various factors [within traditional business valuation] already capture impact...reputation...lobbying..licenses, permits, testing, certification...[these Impacts are] implicit in the risk profile, not explicit in sales/costs ... other than remediation costs ... cost to attract employees, having to pay employees more ...”; “[as business valuers, we] look at cash flows and risk...we embed [impact] into our assessment of risk.”
- “Return on Investment...when you modify the way you [invest]...time, money or capital spending...If you have a relative standardized way of [measuring] to determine return on investment...or risk [of not investing].”
- “Social license to operate.”
- ESG: “Recent legislation in Ontario ... pension plans must look at ESG risks.”
- Brand: “Business leaders are only doing good things because it improves their brand.”; “Brand value is a function of future cash flows and expectations around those cash flows...a company that has a solid reputation...does not need to spend [as many] advertising dollars to attract customers.”; “organic foods get priced at a premium.”
- Gifts: “the difference between what the market would normally charge for [social goods] and what is actually being charged from that socially conscious business is the [commercial] value [of those social goods]...similar to tax authority valuing a donation.”
- Forecasting: “Measure the upside of solving the [social, environmental] problem, not just avoiding the problem...[there is] enormous upside for cleantech to solving the carbon problem.”
- Indices: “TSX CleanTech Index, which measures the impact of companies within that index ... [i.e.] how much % of revenues are generated from clean business).”
- Comparables and industry multiples: “For example, a bond from an energy company’s wind project ... this was fairly easy [to value because comparables exist].”
- Global Reporting Initiative (GRI): “[We currently] use GRI Sustainability Reporting Framework] as framework for data points that they report against ... to produce an integrated report [and this includes financial reporting (i.e. social and economic factors are integrated)] ... What’s most important is still financial, but we integrate stuff with stakeholders based on what’s important to them ... IR doesn’t have to mean one report—it can mean several reports, but all have to be interconnected.”
- Sustainability Accounting Standards Board (SASB): “SASB is attempting to develop sustainability requirements and working with SEC to make it a regulation/requirement for listed companies...watching the Sustainability Accounting Standards Board—out of the US—they are affiliated with the SEC. They look at evaluating industries and developing a common set of standards for material issues that companies report against...not sure if it will be regulated.”
- Other third-party social impact metrics providers that were mentioned: “MSCI’s [ESG tools]”, “Sustainalytics”; “SROI [method].”

- “Identify (1) the nature of the impact [e.g. access to preschool] and then (2) look at the intensity of the impact [e.g. size of the population with a preschool access issue], and then (3) look at company overall performance. These 3 dimensions will provide a score which can be compared across companies.”
- “If you are a smaller company...measure one thing step-by-step and focus on materiality aspect.”

#### *Lack of Need/Fit...that is perceived*

- Where qualitative analysis is essential: “Number of lives saved, number of lives improved is what drives [metrics for reporting investment decisions]...if there are no health outcomes, then there is no investment.”; “there may be important outcomes [to report] that cannot be quantified”; “There is benefit in looking at [CSR] things holistically ... we are engaging with communities to improve their lives. Investors aren’t the only group that’s important to them, and it’s a balance.”
- “[Current] methods are used to inform internal operating activities only [e.g. carbon footprint].”
- Lack of financial data: “Most [new social venture company] members are not profit driven, more focused on people/planet, but they are struggling to make good decisions; struggling to understand where they fit/what benefits they bring ... don’t have financial information to guide them.”
- “Who would need to know social value? And for what purpose? ... Until you can define those two, [business valuers] can’t establish whether there needs to be a standard around it.”
- “Historically, I don’t think there was a need [for business valuers to value social impact]... but can envision a time when they are going to want to know that but what they want to know, how they want to know it, I don’t know that yet.”; “current there is no demand for [business valuation] to deal with [valuing social impact] explicitly...”

#### *Design Constraints...in developing methodology that are already known*

- “restricted to things you can monetize.”
- “data availability.”
- “access to skills required to interpret the data.”
- “...tools, processes, approaches that are simple enough for [new venture] corporations to use...but not so simple to be meaningless.”
- “there would have to be different standards for different industries.”

#### *Requirements...for a methodology to be acceptable*

- Who and For What?: “A standard represents a duty of care [by business valuers]...we are held to that standard and...if not meeting that standard could be...negligent...Who would need to know social value? And for what purpose?...need to define [those two] first.”
- “We have to keep in mind...cash flow and our assessment of risk, this is our central framework as a [business valuator]. Anything that we want to talk about from a social impact has to hold to that framework.”
- “a clear system”; “need a standardized methodology.”
- “with valid data, representative of an entire population group.”
- “It would have to be additive (i.e. does it really impact investment decision-making) in order for it to be effective.”
- “Third-party vendors provide an unbiased approach...[we are] allowed to disagree with it.”
- “Any social metrics have to be directly translated to single bottom line profit to shareholders; otherwise, the metric will remain a marginal play...will be a greenwashing or window-dressing.”

## **APPENDIX C:**

### **CORPORATE SOCIAL RESPONSIBILITY—ADDITIONAL DETAIL**

*Excerpt from “Social Impact Measurement in Firm Valuation: A look at how social impact is currently reported and measured” produced by NeXus Consulting for DecisionModel.*

#### *Corporate Responsibility Reporting*

The line between social enterprises and traditional firms is becoming increasingly blurry. The way traditional firms do business is gradually taking into account the planet’s dwindling resource capacity, as well as their impact on societal constructs, environmental health and global economics. Because of this, we not only see many enterprises whose sole mission is to maximize social impact, but also many traditional corporations that have developed their own social enterprise and sustainability initiatives.

A company’s efforts to quantify, evaluate and adapt its social and environmental impact can go by many names including: Corporate Responsibility (CR), Corporate Social Responsibility (CSR), Sustainability or Corporate Citizenship, or Environmental Social Governance (ESG). While terminology may vary, all of the above represent the same thing: an evolving, yet governed process to analyze an organization’s social and environmental impact, in order to maximize resiliency and long-term value for company stakeholders. All companies that wish to be taken seriously realize that publishing a report on their CR metrics and impact is now essential to both continued operations and stakeholder engagement. However, not all CR Reports are created equal. Companies are still struggling to decide what they should report, how they should report it, and how best to utilize the process in order to generate value.

While the history of CR reporting has been largely marred by attempts to greenwash—a company’s attempt to selectively report and market themselves as socially and environmentally responsible when their operations are anything but—CR reporting appears to be emerging gradually from the dark ages. Companies, under varying levels of scrutiny, are making real efforts to develop holistic CR strategies that integrate with all facets of operation. The impetus for this change seems to be the large-scale awakening of stakeholder consciousness and a corollary increase in government regulation on a global scale.

CR reports are increasing in number and evolving in quality. Many reports are beginning to reflect genuine CR strategy with an intensified focus on identifying material issues, engaging stakeholders, quantifying impact and externally assuring the results. In the most notable cases, this has resulted in a greater preparedness and agility in internal operations as well as operational transparency that fortifies trust with all stakeholders. However, while certain regions, sectors, and individual organizations are setting excellent CR examples, and quality is trending in a favourable direction, we may still be years away from high-quality CR reports becoming the standard.

#### *Corporate Responsibility Trends*

In general, and while this is no guarantee of quality reporting, global output of CR reports has increased. Recent data shows that 71% of the largest 100 companies—whether traditional such as BMW or specific social enterprise such as Tesla—are producing CR reports exhibiting a steady 3-4% growth year-over-year.<sup>3</sup> Additionally, a 2012 survey showed that nearly 7,000 CR reports are being produced globally, illustrating that growth is not confined to large public entities.

<sup>3</sup> KPMG International. (2013, December). The KPMG Survey of Corporate Responsibility Reporting. Retrieved from <http://www.kpmg.com/global/en/issuesandinsights/articlespublications/corporate-responsibility/pages/corporate-responsibility-reporting-survey-2013.aspx>.



Regionally, there has been some interesting movement in the past few years, as well. The Americas, which have traditionally been seen as behind the curve, now have the greatest percentage output of CR reports among the largest 100 companies globally. They have been largely bolstered by increased output in Central and South America as both wealth and progression of social awareness increases in the private sector.

### *CR Framework Trends*

Given that reporting social impact is still a developing concept, companies often question what they should report and how to report it. Through a number of different frameworks that have emerged over the past decade, a certain standard for CR reports has begun to develop. While there are about a half-dozen frameworks which claim the same purpose—increasing transparency into organizational CR—two have begun to emerge as the gold standard: The Global Reporting Initiative Framework and The International Integrated Reporting Council framework.

#### *The Global Reporting Initiative Framework*

The Global Reporting Initiative (GRI) is an international leading organization comprised of thousands of professionals and organizations from many sectors. It pioneered and developed a comprehensive Sustainability Reporting Framework that is the framework most closely followed, historically, with 40% of all CR reports conforming to the 92-page set of guidelines.<sup>4</sup> The larger the company, the more common the conformity, with nearly 82% of the world largest 250 companies using GRI15. The GRI framework has traditionally been considered best-used to produce stand-alone reports.

#### *The International Integrated Reporting Council Framework*

The International Integrated Reporting Council (IIRC), which is made up of GRI representatives among others, has promoted the need for CR reports to be integrated into financial reports rather than to be seen as a stand-alone entity. The IIRC has not only developed its own proprietary framework, known as <IR>, but in 2011 developed a pilot program with CR leaders such as Coca-Cola and Unilever to begin exploring and developing integrated reporting best practices.

The prevailing opinion is that <IR> is the best way to promote integrated thinking amongst shareholders. However, others believe that <IR> allows companies to bury CR information so that stakeholders who do not concern themselves with financials will not find relevant information. Regardless of the debate, the numbers seem to indicate that companies believe <IR> to be beneficial—about 10% of companies now produce integrated reports, up from around 2% in 2007. Furthermore, a large majority of surveyed CR report producers believe “all reports should be integrated.”<sup>5</sup>

### **ISAE 3000**

While there has been a substantial uptick in CR reporting over the past decade, external assurance is still not common practice. Globally, financial reports are more often than not required to be externally assured, though conversely, stakeholders are often asked to take company CR data at face value. Among the largest 100 global companies, growth of external assurance remains stagnant, and, according to a KPMG analysis, a meager 4% of these companies provide a “reasonable amount” of external assurance.<sup>6</sup> It is widely noted in the evaluation of CR reports that this is a solid indicator

---

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*

<sup>6</sup> Crifo, P, Forget, V.D., & Tevssier, S. (2015), *supra* note 1.



that greenwashing is still prevalent. Globally, only about 20% of all CR reports are externally assured and in North America the number is even lower.<sup>7</sup>

For those who do assure their data, the ISAE3000 is the most widely used framework, explicitly designed for auditors assuring non-financial information.

ISAE 3000 is the assurance standard for sustainability and outsourcing and deals with assurance of non-financial information. Organizations are given a pass or fail mark for the report upon completion. Noted by many in the field of CR, the ability to deliver bad news effectively lends ultimate credibility to a report, and just as with financial data, audits often help determine inclusion or otherwise.

“To include ‘bad news’ or not is ultimately an organization’s own choice,” says Jennifer Iansen-Rogers of ERM Certification & Verification Services. “But what assurance can deliver is an external filter of such information and the ability to drive through the necessary balance of disclosure, either by providing a persuasive case for inclusion or, if not, through the assurance conclusion itself, providing stakeholders with a sense of what has (and has not) been achieved through the year.”<sup>8</sup>

### *Regulation Spurs Growth in CR Reporting*

While certain growth has occurred in the Americas and elsewhere, due to the general progression of social and environmental consciousness among both internal and external stakeholders, the most explosive growth can be attributed to an increase in regulatory requirements. In a 2012 survey of nearly all global companies producing CR reports, the majority stated that regulation was the top-driver behind spurring organizations to produce reports. It was further noted in the survey that reporting companies believe regulation should dictate that companies and organizations be required by law to report.<sup>9</sup>

High profile examples such as the United States’ S.E.C. Dodd-Frank Act of 2008 and France’s Grenelle II Act of 2012, requiring organizations to produce information on their social & environmental sustainability have led to huge upticks in national report output. Remarkably, 100% of France’s top-100 companies are now producing CR reports as of 2014.<sup>10</sup> Countries such as South Africa, Singapore, Denmark and India have had some of the biggest increases in CR reporting in recent history, all spurred on by sweeping regulatory reform (see further information about trends on Stock Exchanges in this report [see Appendix F, below]). In certain instances, companies are not simply required to report on their social impact, but in the case of India, are actually required to reinvest company profits into “Socially Responsible Projects.”<sup>11</sup>

While Canada and the United States were early leaders in the CR reporting field, report output in general has stagnated. This can largely be attributed to a lack of new government mandates for CR reporting over the past several years.<sup>12</sup>

### *Viewing CR in the Context of the Value Chain*

Due to growing regulation, public scrutiny and concern, another emerging trend is that companies are no longer culpable simply for their own social impact but for those connected to them in the value chain. Due to incidents such as the Rana Plaza Factory collapse in 2013 and the subsequent

7 CorporateRegister.com. (2015). CR Reporting Awards.

8 KPMG International. (2013, December), *supra* note 3.

9 *Ibid.*

10 *Ibid.*

11 Crifo, P, Forget, V.D., & Tevssier, S. (2015), *supra* note 1.

12 Initiative for Responsible Investment. (2015, 03 27). Corporate Social Responsibility Disclosure Efforts by National Governments & Stock Exchanges.

backlash at Loblaws for sourcing supplies from a sweatshop,<sup>13</sup> the social impact of an organization's suppliers has become increasingly important to a company's valuation of social impact. Most recently, Chipotle temporarily pulled popular menu items because their supplier was not complying with their animal rights and environment standards.<sup>14</sup> They were thus able to avoid negative publicity and maintain their high standards. While headlines like this are becoming more common, CR reports are still failing to integrate suppliers into their social impact valuations with less than a third of all companies including upstream factors in their CR reports.<sup>15</sup> Sectors with the highest societal impact—Oil & Gas, Chemicals & Synthetics, and Utilities—historically perform very poorly on this metric, which suggests that selective CR reporting and misleading social valuation is prevalent.

CR valuation is also selective and sporadic in its treatment of the downstream impacts of production. While 73% of European companies do so in detail, less than half of the companies in the Americas, and less than a third of Asian companies report downstream impacts.<sup>16</sup> Again we can see that selective reporting runs rampant amongst high-risk sectors.

The lack of quality discussion around supply chain sustainability is potentially the biggest red flag that legitimate CR valuation is still in its infancy, globally. It exposes that many companies are avoiding having the difficult conversations with stakeholders and thus still largely use the CR report as nothing more than a marketing tool.

### *The Future of CR Reporting*

As a whole, many companies and sectors are still greenwashing through selective reporting and using their CR report as more of a marketing tool than a self-evaluation. In regions where government regulation is lenient, companies allow unsavory social & environmental practices to persist under the radar, valuing short-term gains over long-term sustainability.

For social enterprises, however, transparency of social impact is crucial to their survival. As a result, a multitude of frameworks have emerged to help organizations internally measure their social impact.

---

13 Talaga, T. (2015, April 30). Bangladesh factory-collapse workers, families seek \$2 billion from Loblaws. *The Toronto Star*.

14 Associated Press. (2015, April 22). Chipotle pork shortage leads to not enough carnitas to go around.

15 Crifo, P., Forget, V.D., & Tevssier, S. (2015), *supra* note 1.

16 *Ibid.*

## **APPENDIX D: EXISTING MEASUREMENT FRAMEWORKS USED FOR NON- FINANCIAL REPORTING—ADDITIONAL DETAIL**

*Excerpt from “Social Impact Measurement in Firm Valuation: A look at how social impact is currently reported and measured” produced by NeXus Consulting for DecisionModel.*

### *Internal Tools*

The concept of a “double bottom line” (DBL) business emerged in the early 2000s. As the idea of measuring social return concurrent with traditional financial accounting has increased in popularity, these businesses are entrepreneurial ventures that strive to achieve measurable social and financial outcomes. Below are the most prevalent frameworks used by social enterprises and non-profits to measure and report their social impact (in no particular order).

### *Acumen Fund’s Best Alternative Charitable Option*

Acumen Fund, an organization that focuses on tackling world poverty by looking at operations in developing economies, developed a methodology for quantifying social impact. The Best Alternative Charitable Option (BACO) tool helps to inform investors where their philanthropic capital will be most effective. The methodology uses a BACO ratio and looks to quantify an investment’s social impact and compare it to the universe of existing charitable options for that explicit social issue.<sup>17</sup>

The BACO is based on charities providing similar goods and services, and is driven by: 1) financial leverage, 2) enterprise efficiencies, and 3) technology leverage. However, it neglects to consider long-term impact (beyond 5-7 years) and relies on alternative charities. If there are no alternative charities or comparables, it is inapplicable.

### **Pacific Community Ventures’ Social Return Assessment**

Pacific Community Ventures (PCV) is a non-profit organization that manages for-profit investment funds and invests in companies that provide jobs, role models, and on-the-job training for low-income people, and that are located in disadvantaged communities in California.

In 2000, PCV developed a method for its own use in assessing the social return of each investee and of its overall portfolio. The system entails tracking progress specifically on the number and quality of jobs created by PCV’s portfolio companies. It helps the fund target and improve its services to its investees and to a group of companies to which it provides business advisory services. The method is separate from financial performance assessment, and can be quite costly.<sup>18</sup>

### **Social Return on Investment (SROI)**

Social return on investment (SROI) is a principles-based method for measuring extra-financial value (i.e., environmental and social value not currently reflected in conventional financial accounts) relative to resources invested. It was standardized by Social Value, formerly The SROI Network, an organization that works with its members to increase accounting, measuring and managing social value through the Social Value Principles. The framework, or Guide for Social Return on Investment, is used for measuring and accounting for a broader concept of value based on social generally

<sup>17</sup> Team, A. F. (2007). The Best Available Charitable Option. New York City: Acumen Fund.

<sup>18</sup> Rosenweig, 2004

accepted accounting principles (SGAAP). It was originally written in 2009 by the UK Cabinet Office, and updated in 2012.<sup>19</sup>

There are 2 types: 1) Evaluative and 2) Forecast. The framework attempts to calculate all the quantitative benefits of the firm and factor those into future cash flows to determine NPV. It emphasizes the importance of connecting and consulting with key stakeholders to gain their insight regarding which outcomes of a given project are important to them (participatory research methods), and assigns financial proxies to outcomes (which cost-benefit analysis may or may not do).

### **Global Impact Investing Rating System (GIIRS)**

Global Impact Investing Rating System is powered by B Impact Assessment (BIA), a free third-party tool that assesses a company's overall social and environmental performance. It is run by B Lab, a non-profit organization dedicated to using the power of business as a force for good. The GIIRS measures the overall impact of a business on all of its stakeholders, and each company receives an overall score and two ratings; one for its impact models and the other for its operations.<sup>20</sup> Certified B Corporations meet rigorous standards of social and environmental performance, accountability, and transparency. The organization also developed B Analytics, a customizable platform for benchmarking, measuring and reporting on impact. It hosts the world's largest database of verified social and environmental performance data for private companies, and is used by leading impact investors, fund managers, and impact entrepreneurs globally.

### **Guidelines for Good Impact Practice**

A set of guidelines was developed by the Working Group on Impact Measurement and convened by the Social Impact Investment Taskforce, which was established under the UK's presidency of the G8 in 2013. The Working Group collaborated with hundreds of industry professionals to illuminate trends and elicit tips for long-term impact measurement planning. The document provides a set of guidelines and leading questions to help advance impact measurement approaches.

### **Compass Assessment for Investors**

Developed by AtKisson Inc., an international sustainability consultancy, this framework is designed to integrate with the reporting guidelines of major CSR standards, particularly the Global Reporting Initiative (GRI) and the Dow Jones Sustainability Index (DJSI), as a venture matures. The method incorporates a structure with five key areas: N = nature (environmental benefits and impacts) S = society (community impacts and involvement) E = economy (financial health and economic influence), and W = well-being (effect on individual quality of life), and a fifth element, + = Synergy (links between the other four areas and networking). This framework includes a point-scale rating system on each of the five areas.<sup>21</sup>

### **Sustainable Livelihoods**

The Sustainable Livelihoods model was developed by the UK's Department for International Development, and adjusted for use in Canada.<sup>22</sup> An asset mapping process measures the specific financial, social, personal, physical and human assets an individual or community may have. The framework then helps to identify what assets must be built through intervention and re-assess these

<sup>19</sup> Social Value UK, 2015.

<sup>20</sup> B Impact Assessment, 2015.

<sup>21</sup> Rosenweig, 2004.

<sup>22</sup> Sustainable Livelihoods. (n.d.). The Sustainable Livelihoods Framework. Retrieved from [http://tamarackcommunity.ca/downloads/vc/Sustainable\\_Livelihoods.pdf](http://tamarackcommunity.ca/downloads/vc/Sustainable_Livelihoods.pdf).

assets to measure progress towards poverty reduction. The model has been used by the Canadian Women's Foundation, SEED Winnipeg and Momentum in Canada, among others.

### *Third Party Metric Providers*

Third party metrics service providers add credibility to findings and address an organization's own lack of capacity and/or expertise. In some cases, third party service providers can help to alleviate the pressure that measurement may place on entrepreneurs or investors. Most third party services are fee-based. Below are some examples of third party services.

#### **Sustainalytics, Canada**

Sustainalytics, a global leader in sustainability research and analysis, provides comprehensive, timely and relevant ratings, rankings and analysis of corporate environmental, social and governance (ESG) performance.

#### **SiMPACT Strategy Group, Canada**

SiMPACT offers consulting, advisory and capacity building services to clients seeking to understand social impact as essential to strategic community investment, to maximizing the value of the Corporate Social Responsibility (CSR)/Sustainability agenda and those seeking a Social Return on Investment (SROI) analysis.

#### **Purpose Capital**

While primarily for investors, Purpose Capital performs financial and impact due diligence on investment opportunities to inform decision-making, and monitor financial and social performance to targets.

#### **Social Asset Measurements (SAM)**

SAM helps clients understand what social impact they are creating and how they are achieving it. Reporting is tied to a clear theory of change and embedded into the business process of social enterprises, resulting in better understanding and management outcomes.<sup>23</sup> In 2013, Alterna Savings & Credit Union used SAM's measurement framework for its microfinance program, becoming the first of its kind in the Canadian banking system.<sup>24</sup>

---

<sup>23</sup> Social Asset Measurement, 2014.

<sup>24</sup> Alterna Savings & Credit Union Ltd., 2013.

## **APPENDIX E: LOAN PROGRAMS FOR SOCIAL ENTERPRISE**

*Excerpt from “Social Impact Measurement in Firm Valuation: A look at how social impact is currently reported and measured” produced by NeXus Consulting for DecisionModel.*

### *Ontario Catapult Microloan Fund*

This Fund is a partnership between the Centre for Social Innovation, the Province of Ontario, Alterna Savings, Microsoft Canada, TD Bank Group, KPMG, and Social Capital Partners and is designed to help promising social entrepreneurs and innovators with low interest loans of \$5,000-\$25,000.<sup>25</sup> It undertakes a full impact assessment of the investments over a two-year period. Previous loan recipients include: ZooShare, Fresh City Farms, Peekapak, Survey Graph, Twenty One Toys, and Grantbook, among others.

### *Ottawa Community Loan Fund*

The Ottawa Community Loan Fund, established in July, 2000, is meant to provide micro-credit in the community of Ottawa. Their Social Enterprise Demonstration Fund helps social entrepreneurs/enterprises who are tackling Ontario’s most pressing social and environmental issues, and creating jobs, and partners include The Centre for Innovative Social Enterprise Development (CISED).<sup>26</sup>

### *Social Enterprise Fund, Edmonton, Alberta*

SEF was established in 2008 through a unique collaboration between the Edmonton Community Foundation and the City of Edmonton. Since its inception, the SEF has placed just over \$8M with more than twenty organizations working in various sectors of the community.

### *La Fiducie du Chantier de l’économie sociale, Quebec*

Established in 2007 as Quebec’s first patient capital quasi-equity fund, and has so far invested over \$15.7 million. The debentures are offered with a 15-year term. Fonds de Solidarité FTQ is known as one of the most important sources of risk capital in Canada. Worth \$8.3 billion in assets, it also invests in La Fiducie du Chantier de l’économie sociale.

<sup>25</sup> The Ontario Catapult Microloan Fund for Social Ventures, Centre for Social Innovation, 2015. Website: <http://socialinnovation.org/catapult>.

<sup>26</sup> The Ottawa Community Loan Fund, 2015. Website: <http://oclf.org/social-enterprise/>.

## **APPENDIX F: SOURCES OF MARKET COMPARABLES**

*Excerpt from “Social Impact Measurement in Firm Valuation: A look at how social impact is currently reported and measured” produced by NeXus Consulting for DecisionModel.*

### *Johannesburg Stock Exchange*

In 2010, The Johannesburg Stock Exchange (JSE) (South Africa) was the first stock exchange to introduce a sustainability index measuring companies on indicators related to ESG practices.<sup>27</sup> Companies have to report on the extent to which they comply with the principles of the King Code on Corporate Governance. The JSE mandates companies to move towards integrated reporting or explain why they are not doing so.

### *United Kingdom’s Social Stock Exchange*

The UK’s Social Stock Exchange is an information website that focuses on assessing the social impact of listed companies. Through its announced partnership with FCA-regulated Angels Den and its agreement subject to regulatory approvals with ISDX, it will be able to offer both investors and companies access to the impact investing space via a ‘cradle to scale’ model.<sup>28</sup>

### *Canada’s Social Stock Exchange (SVX)*

In September 2013, Canada, led by MaRS Centre for Impact Investing, launched the Social Stock Exchange, a program that originated in UK to connect socially driven businesses with investors.<sup>29</sup> It is registered as a restricted dealer with the Ontario Securities Commission. It is a private investment platform built to connect impact ventures, funds and investors in order to catalyze new debt and equity investment capital. The aim of the platform is to enable impact ventures and funds based in the province of Ontario to raise investments of \$100,000–\$10m from accredited impact investors.

### *Asia’s Impact Investment Exchange (IIX), Singapore*

The AIIX is a Singapore-based organization with a mission to provide Social Enterprises (SEs) in Asia greater access to capital, allowing them to more rapidly expand the impact of their activities.<sup>30</sup> IIX offers three investment platforms: 1) Impact Accelerator, 2) Impact Partners and 3) Impact Exchange. The Impact Accelerator provides seed-stage SEs with mentorship and private capital through a structured and customized process over a period of about eight months. IIX also recently announced the launch of Impact Exchange, operated by the Stock Exchange of Mauritius in collaboration with IIX. Impact Exchange is the world’s first “social stock exchange,” a regulated stock exchange dedicated to listing and trading securities issued by mature SEs and other socially-driven organizations.

### *The Sustainable Stock Exchanges (SSE) Initiative, Global*

This Initiative is a P2P learning platform on how exchanges can enhance corporate transparency on ESG issues and encourage sustainable investment. In 2009, it was named by Forbes Magazine

<sup>27</sup> Johannesburg Stock Exchange, 2015.

<sup>28</sup> Social Stock Exchange, 2014.

<sup>29</sup> Social Stock Exchange in Canada, 2015.

<sup>30</sup> Asia IIX, 2015.



as one of “the world’s best sustainability ideas.”<sup>31</sup> In 2012, participating stock exchanges made a public commitment to sustainability in their markets, thereby becoming a SSE Partner Exchange (19 exchanges currently). Joining offers exchanges an array of resources for support and implementation of sustainability initiatives (events, webinars, workshops, publications, research, etc.). Every two years, there is a Global Dialogue and a release of the SSE Report on Progress (with the next one in 2016).

### *S&P/TSX Renewable Energy & Clean Technology Index, Canada*

In 2010, Standard & Poor’s and TMX Group Inc. announced the launch of the S&P/TSX Renewable Energy and Clean Technology Index. It measures performance of companies listed on the TSX whose core business is the development of green technologies and sustainable infrastructure solutions. Constituents are screened by Sustainalytics through its Clean Technology Classification System. Sustainalytics screens TSX listed securities according to a methodology which first evaluates companies for inclusion based on involvement in and strategic commitment to five environmental themes: Renewable Energy, Specialized Suppliers, Energy Efficiency, Waste Reduction, and Water Management and Low Impact materials and products.

### *Jantzi Social Index®*

In January 2000, Jantzi Research (now Sustainalytics) launched the Jantzi Social Index®, and partnered with Dow Jones Indexes. The JSI, a socially screened, market capitalization-weighted common stock index is modeled on the S&P/TSX 60, and consists of 60 Canadian companies that pass a set of broadly based environmental, social, and governance rating criteria.

### *Meritas Mutual Funds*

Meritas Financial Inc. was incorporated in 1999 as an investment management firm that was designed to focus exclusively on creating and distributing socially responsible investments for individuals and institutional investors. In April 2001, Meritas Mutual Funds launched the Social Index® Fund, an RRSP eligible mutual fund that invests in common shares of the 60 companies that comprise the JSI®. Meritas is the only SRI manager in Canada to employ Community Development Investments (CDI) as a key part of its process. In 2010, Meritas Financial Inc. and Qtrade Fund Management merged to form OceanRock Investments Inc.

### *iShares ETF*

In May 2007, iShares launched the first socially responsible Exchange Traded Fund (ETF) in Canada, iShares Jantzi Social Index® Fund (XEN). XEN is designed for socially responsible Canadian investors to help attain diversification in their portfolios. In Canada, iShares trade on the Toronto Stock Exchange, delivering a variety of options for your asset allocation needs.

### *Dow Jones Sustainability™ World Index (the DJSI World)*

Launched in 1999, the index was the first global sustainability index and is highly recognized within the investment community. The inputs used to construct the index are provided by RobecoSAM, a high-profile investment specialist focused exclusively on sustainability investing. The DJSI World is

---

31 Sustainable Stock Exchanges Initiative, 2013.



constructed by selecting the top 10% of companies with the highest sustainability rating within their respective industries.<sup>32</sup>

### *S&P Carbon Efficient Indices*

The carbon footprint of each company within the benchmark is determined by an independent specialist research provider, Trucost, and it is adjusted by the revenue of the company. In deciding the carbon footprint of a company where data is not available, Trucost considers a number of factors, such as the sector that the company operates in, the company's supply chain, and the products the company makes.

### *SXI Switzerland Sustainability 25\**

Launched in June 2014, the top 25 companies in terms of the highest sustainability score, as indexed by Sustainalytics, were selected to compose the Index. The Index is reviewed and adjusted once a year in September. Some companies listed as of the writing of this report are: Lindt, Richemont, and UBS Group.

---

<sup>32</sup> S&P Dow Jones Indices, 2015.

## Figures and Tables

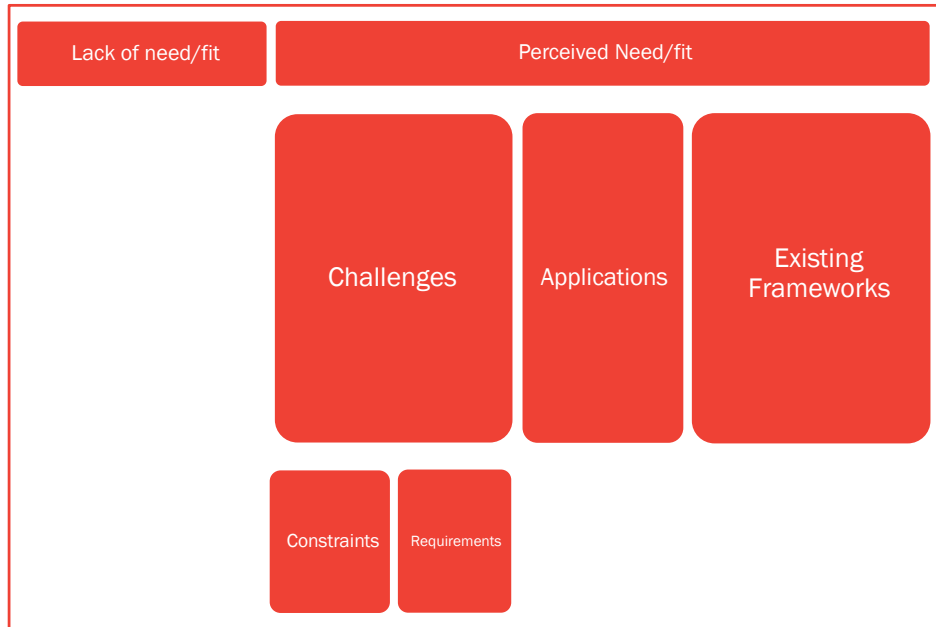
**Table 1: Interview Details**

STAKEHOLDER	CONDITIONS	LENGTH (MIN:SEC)	RECORDING	NOTES
<b>Investment Manager</b>				
<b>CEO</b>	Conducted by phone 7/20/2015	19:11	Audio	Concurrent notes, corroborated by reviewing audio
<b>Managing Partner</b>	Conducted by phone 7/23/2015	18:00	Audio	Concurrent notes, corroborated by reviewing audio
<b>Director</b>	<No response>	N/A	N/A	
<b>Vice-President</b>	<No response>	N/A	N/A	
<b>Co-founder/Director</b>	<No response>	N/A	N/A	
<b>Funding Agency or Government</b>				
<b>Executive Director</b>	Conducted by phone 7/14/2015	20:24	Audio	Concurrent notes, corroborated by reviewing audio
<b>Lead</b>	Conducted by phone 7/16/2015	22:02	Audio	Concurrent notes, corroborated by reviewing audio
<b>Investment Associate</b>	Conducted by phone 7/30/2015	22:57	Audio	Concurrent notes, corroborated by reviewing audio
<b>Policy advisory</b>	Responded by email 8/7/2015	N/A	N/A	Response provided directly in writing
<b>Director</b>	<No response>	N/A	N/A	
<b>Service Provider or Professional Association</b>				
<b>Director</b>	Conducted by phone 7/16/2015	23:46	Audio	Concurrent notes, corroborated by reviewing audio
<b>CEO</b>	Conducted by phone 7/29/2015	15:41	Audio	Concurrent notes, corroborated by reviewing audio
<b>Partner</b>	Conducted in person 8/18/2015	30:53	Audio	Concurrent notes, corroborated by reviewing audio
<b>Partner</b>	Conducted by phone 8/21/2015	24:24	Audio	Concurrent notes, corroborated by reviewing audio

STAKEHOLDER	CONDITIONS	LENGTH (MIN:SEC)	RECORDING	NOTES
<b>Publicly-Listed Corporation</b>				
<b>Sustainability Manager</b>	Conducted by phone 7/21/2015	22:21	Audio	Concurrent notes, corroborated by reviewing audio
<b>Global Director</b>	<No response>	N/A	N/A	
<b>CSR Specialist</b>	<No response>	N/A	N/A	
<b>AVP of Sustainability</b>	<No response>	N/A	N/A	
<b>Director of Environmental Sustainability</b>	<No response>	N/A	N/A	

### Figure 1: Themes & their Interconnectedness

A visual representation of the themes that emerged during the interviews, and the interconnectedness that existed between these themes. The size of each box is roughly proportional to the amount of response received for topics under each theme.



### Acknowledgments

Appreciation is extended to the Canadian Institute of Chartered Business Valuator's Ian R. Campbell Research Initiative, which provided support for this research project. Also to NeXus Consulting who conducted many primary interviews. And last but not least to the peer reviewers of this article and to the interviewees, who took the time to share information, feedback and insights. I hope you all remain engaged in this topic going forward.

### About the Author

Jackie is a professional engineer, facilitator, entrepreneur and valuation enthusiast. In addition to researching her areas of passionate interest, she is a Lecturer at the Ted Rogers School of Management of Ryerson University, an Entrepreneur-in-Residence at OASIS Centre des Femmes, and Facilitator in the areas of entrepreneurial finance and business strategy at Ontario's network of Regional Innovation Centres. She is inspired by the growing number of new venture entrepreneurs who are choosing to make social impact an important part of their business model. Are we doing our best to help social entrepreneurs capture all the value of the social impact that they are creating? Your feedback is welcomed at [jcsonka@decisionmodel.ca](mailto:jcsonka@decisionmodel.ca).

