A NEW LINKAGE BETWEEN CORPORATE
AND PUBLIC GOVERNANCE THROUGH
THE LENS OF INCREMENTAL CASH FLOWS

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ABSTRACT

While in the study of Corporate Governance we can avail ourselves of the incremental cash-flow model (ICFM), the analysis of Public Governance has been falling behind with this issue. The paper sets forth an innovative linkage between both fields of learning and practice, by means of a suitable framing of such model that would allow us to take advantage of a deeper research focus just within the interface of both governances. Firstly, the ICM is derived in the current shape that experts in Corporate Governance make use of it. Secondly, we sharpen up the ICFM to match variegated needs in research and applications of Public Governance.

Institutional disclaimer

INTRODUCTION

Governance in the public sector has been a growing concern in the last thirty years under the label of Public Governance[1]. On the one hand, global institutions like the World Bank (1994), the International Monetary Fund, and the United Nations, have delved into the manifold problems of governance, and provided sound courses of action to improve national standards. On the other, scholarship on this issue has been a thriving endeavor as shown by seminal contributions that laid the foundations for this field of learning and practice. Namely, the ones by Janos Kornai (1979), Gordon Tullock (1967), Osborne and Gaebler (1992), Andrew MacIntyre (2003), Robert Behn (2001), and Donald Kettle (1993, 2002) among many others[2].

Beginning with section 1, we will introduce the incremental cash flow model, whose usage has become widespread in the realm of Corporate Governance[3]. Afterwards, the model will be derived from the net worth structure of stocks and flows variables.

It is for section 2 to carry out a second reading of the incremental cash flow model, although at a deeper level of analysis, by means of a suitable framework for dealing with Public Governance issues. To accomplish our purpose, we are going to take advantage of accountancy categories currently in use, by following the International Monetary Fund standards. This approach will lead us towards a nurturing linkage between public and corporate governance.

**1. THE INCREMENTAL CASH FLOW MODEL
     IN CORPORATE GOVERNANCE**

Let us assume that we define a forward span of time, also called a budgetary horizon,

$$H = [t ; T]$$

with starting date at **t**, and ending date at **T**. Such a period could match, for instance, the fiscal year, a single month, or a semester.

For any organization in the private sector, the incremental cash flow model[4] predicates that

(1)

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[1] The reader interested in what amounts to an operational definition of Public Governance is referred to the Appendix, at the end of this paper.
[2] We have been contributing to this field through a series of papers for the last years (see References). In July 2007, it came out my book *Public Governance: A Blueprint for Better Governments and Political Action*, edited by Nova Science Publishers, New York (see references).
[3] On the semantics of the word Governance, see Apreda (2005d, 2003).
[4] Corporate Governance issues have extensively been developed in Apreda (2007b, 2005b).

$$\Delta \text{ CF (assets)} \ = \ \Delta \text{ CF (creditors)} \ + \ \Delta \text{ CF (equity-holders)}$$

provided that the following qualifications hold in full:

a) The assessment of components in relationship (1) is carried out at date **t** (in which case we would be choosing a budgeting approach) or at date **T** (when we would be pursuing the actual measurement of past performance).

b) The model deals with **incremental cash flows**. That is to say, cash flows that come to exist along the horizon and could not exist otherwise; in other words, they are expected to take place along **H** only.

c) Δ **CF (assets)** is a building block of cash flows that stands for the net change underwent in revenues against expenses (as well as maintenance provisions to working capital and fixed assets), along the horizon,

(2)
$$\Delta \text{ CF (assets)} \ =$$

$$= \Delta \text{CF(revenues)} \ - \ \Delta \text{CF (expenses and maintenance provisions)}$$

exclusive of interest payments to creditors and benefits earned by equity holders. It plays like a suitable measure of net worth, that is to say, value creation (or destruction) in **H** as we are going to stress later in sections 1.1 and 2.1.

d) Furtherly, Δ**CF (assets)** must be delivered to creditors and equity-holders, which entails manifold allocations in accordance with the following structures:

For creditors:

(3)
$$\Delta \text{CF (creditors)} \ = \ \Delta \text{CF (interest)} \ + \ \Delta \text{CF (debt repayment)} \ +$$

$$+ \ \Delta \text{CF (debt repurchase)} \ - \ \Delta \text{CF (new debt issuance)}$$

For equity-holders[5]:

(4)
$$\Delta \text{CF (equity holders)} \ = \ \Delta \text{CF (residual income)} \ +$$

$$+ \ \Delta \text{CF (equity repurchase)} \ - \ \Delta \text{CF (new equity issuance)}$$

We refer to equity-holders by resorting to a catchy expression which encompasses different kinds of owners or contributors of capital, under variegated organizational forms. For the sake of illustration: founders of sole proprietorships, limited partners

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[5] In the case of a corporation, "residual income" stands for expected dividends.

in partnerships, patronage stockholders in cooperatives, and shareholders in corporations[6].

The qualifications listed above give a basic outline of the mainstream cash-flow model so widely used in Corporate Finance to assess future expected cash flows that are needed to valuate investment projects, whole companies, and equity. Lately, its usage has been advocated to handle corporate governance issues, mainly to prevent deviant behavior from arising out of any sort of organization (Apreda, 2005c, 2002, 2001).

1.1 FROM NET WORTH CHANGES TO THE INCREMENTAL CASH FLOW MODEL

Ultimately, changes in cash flows related to net worth can be assimilated to net changes in equity:

(5)

$$\Delta\, CF_{[t;\,T]}\, net\ worth\ =\ \Delta_{[t;\,T]}\, equity$$

denoting with $\Delta_{[t;\,T]}\, CF\,(\,.\,)$ incremental cash flows, and with $\Delta_{[t;\,T]}(\,.\,)$ changes in the balance sheet. On the one hand, the right side in (5) amounts to[7]:

(6)

$$\Delta\, CF_{[t;\,T]}\, net\ worth\ =\ \Delta_{[t;\,T]}\, equity\ =\ \Delta_{[t;\,T]}(assets)\ -\ \Delta_{[t;\,T]}(liabilities)$$

while the left side leads to a cash-flow construct:

(7)

$$\Delta\, CF_{[t;\,T]}\, net\ worth\ =\ net\ worth\ (T)\ -\ net\ worth\ (t)$$

To follow the whole process that ends up by creating net value at the end of the planning horizon, we must give thought to next relationship between stocks and flows[8]:

(8)

$$net\ worth\ (t)\ +\ \Delta CF_{[t;\,T]}(net\ worth\ due\ to\ transactions)\ +$$

$$+\ \Delta CF_{[t;\,T]}(net\ worth\ due\ to\ holding\ and\ volume\ changes)\ =$$

$$=\ net\ worth\ (T)$$

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[6] A broad-minded approach to these issues can be found in Hansmann's book*: The Ownership of Enterprise* (1996).

[7] Bear in mind that cash flows from assets stand for value creation as in (1) and (2), while net worth is value creation after cash flows to creditors are discounted, as in (5) and (6).

[8] **net worth (T) and net worth (t)** stand for a stock variable at date **t** and date **T**, while the remaining variables $\Delta CF_{[t;\,T]}$ **(net worth due to transactions)** and $\Delta CF_{[t;\,T]}$ **(net worth due to holding and volume changes)** perform like flows, along the horizon.

By blending (7) and (8) we get:

(9)

$$\Delta \, CF_{[\,t;\,T\,]} \, \text{net worth} \quad = \quad \Delta CF_{[\,t;\,T\,]} \, (\text{net worth due to transactions}) \, +$$

$$+ \, \Delta CF_{[\,t;\,T\,]} \, (\text{net worth due to holding and volume changes})$$

We should notice that the right side in (9) stresses the main sources of value creation: operational transactions, holding value reassessment and volume changes.

The discussion above raises the following question: could it be possible to start with (9) and bring about the incremental cash flow model as in (1)? If affirmative, the answer would show itself as a convenient approach for linking public with corporate governance.

Henceforth and through the subsequent stages, we are going to build up new constructs that will be called "incremental cash flows" $\Delta CF_{[\,t;\,T\,]}(\, . \,)$.

Stage 1: Equity structure

The basic accountancy structure of changes in equity, $\Delta_{[t;\,T]}\text{equity}$, can be tracked down to new issues, repurchases and retained earnings.

(11)

$$\Delta_{[\,t;\,T\,]} \, \text{equity} \quad = \quad \{ \Delta_{[\,t;\,T\,]} \, \text{new equity issues} \quad -$$

$$- \, \Delta_{[\,t;\,T\,]} \, \text{repurchases} \, \} \, + \, \Delta_{[\,t;\,T\,]} \, \text{retained earnings}$$

As from now on, and for ease of notation, we are dropping the symbol **[t; T]** in the subscripts.

Stage 2: Retained earnings

On the other hand, net income has two faces: the one we get from the sources of cash flows, the other one that deals with the application of cash flows:

(12)

$$\text{net income} \; = \; \text{Ebit} - \text{taxes} - \text{interest}[9]$$

$$\text{net income} \; = \; \Delta \, \text{retained earnings} \; + \text{dividends}$$

From this, we get:

$$\Delta \, \text{retained earnings} \; = \; \text{Ebit} - \text{taxes} - \text{interest} \; - \text{dividends}$$

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[9] We refer here to interest payments for mid- and long-term debt.

Plugging last expression into (11), we attain:

(13)

$$\Delta \text{ equity } = \{ \Delta \text{ new equity issues } -$$

$$- \Delta \text{ repurchases } \} + \text{ Ebit } - \text{ taxes } - \text{ interest } - \text{ dividends}$$

Henceforth, we are going to define the construct "*incremental cash flows addressed to stockholders*", Δ **CF (stockholders)**, in the following way

$$- \Delta \text{ CF (stockholders) } =$$

$$= \Delta \text{ new equity issues } - \Delta \text{ repurchases } - \text{ dividends}$$

Therefore, in (13) it holds that

$$\Delta \text{ equity } = - \Delta \text{ CF (stockholders) } + \text{ Ebit } - \text{ taxes } - \text{ interest}$$

and taking advantage of (10 we reach to

(14)

$$\Delta \text{ (assets) } - \Delta \text{ (liabilities) } =$$

$$= - \Delta \text{ CF (stockholders) } + \text{ Ebit } - \text{ taxes } - \text{ interest}$$

Stage 3: Cash flows from operations

The next incremental cash flow is usually called "*cash flows from operations*" [10]:

$$\Delta \text{CF (operations) } = \text{ Ebit } - \text{ taxes } + \text{ depreciation}$$

which allows for the rewriting of (14):

(15)

$$\Delta \text{ (assets) } - \Delta \text{ (liabilities) } =$$

$$= \Delta \text{CF (operations) } - \Delta \text{ CF (stockholders) } - \text{ interest } - \text{ depreciation}$$

Stage 4: Splitting down Δ (liabilities)

The structure of liabilities can be divided into two components:

- medium- and long-term liabilities,
- current or short-term liabilities.

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[10] For ease of notation, let us assume that amortization charges over intangibles equal zero. This leaves us only with depreciation charges, which is not a cash-flow outlay.

That is to say:

$$\Delta \text{ (liabilities) } =$$

$$\{ \Delta \text{ new debt issues } - \Delta \text{ repurchases } - \Delta \text{ principal } \}$$

$$- \Delta \text{ (current liabilities)}$$

On the other hand, we are going to define "*incremental cash flows addressed to creditors*", Δ **CF (creditors)**, in the following way

$$- \Delta \text{ CF (creditors) } =$$

$$= - \Delta \text{ new debt issues } + \Delta \text{ repurchases } + \Delta \text{ principal } + \text{ interest}$$

and, replacing in (15)

(16)

$$\Delta \text{(assets) } + \Delta \text{ CF (creditors) } - \Delta \text{ (current liabilities) } =$$

$$= \Delta\text{CF (operations) } - \Delta \text{ CF (stockholders) } - \text{depreciation}$$

Stage 5: Splitting down Δ (assets)

Profiting from (16), it holds that

(17)

$$\Delta \text{ CF (creditors) } + \Delta \text{ CF (stockholders) } =$$

$$= \Delta\text{CF (operations) } - \Delta \text{(assets) } - \text{depreciation } + \Delta \text{ (current liabilities)}$$

Let us handle Δ **(assets)**, whose inner accountancy structure can be split down into three main components:

$$\Delta \text{(assets) } = \Delta \text{(current assets) } +$$

$$+ \Delta \text{(financial-assets portfolio) } + \Delta \text{(fixed assets)}$$

Going back to (17),

(18)

$$\Delta \text{ CF (creditors) } + \Delta \text{ CF (stockholders) } =$$

$$= \Delta\text{CF (operations) } - [\Delta \text{(current assets) } +$$

$$+ \Delta \text{(financial-assets portfolio) } + \Delta \text{(fixed assets) }] -$$

$$- \text{depreciation } + \Delta \text{ (current liabilities)}$$

We are going to denote "*provisions to working capital*" the following expression:

(19)

$$\Delta CF \text{ (provisions to working capital)} =$$

$$= \Delta \text{(current assets)} - \Delta \text{ (current liabilities)}$$

By the same token, we work out the category "*provisions to non-current assets*" as

(20)

$$\Delta CF \text{ (provisions to non-current assets)} =$$

$$= \Delta \text{(financial-assets portfolio)} + \Delta \text{(fixed assets)} + \text{depreciation}$$

Stage 6: Eliciting the incremental cash-flow model

By (19) and (20) we can reframe (18):

(21)

$$\Delta CF \text{ (creditors)} + \Delta CF \text{ (stockholders)} =$$

$$= \Delta CF \text{ (operations)} - \Delta CF \text{ (provisions to working capital)} -$$

$$- \Delta CF \text{ (provisions to non-current assets)}$$

We are going to label the right side of (21) "*cash flows brought about by assets*", which leads to:

$$\Delta CF \text{ (creditors)} + \Delta CF \text{ (stockholders)} = \Delta CF \text{ (assets)}$$

The outcome is referred to as the incremental cash flow model, which is widely used in Corporate Finance and Governance (Apreda, 2007b, 2005c, 2002a)

2.   THE PUBLIC SECTOR AND THE PROBLEM OF NET WORTH

Trying to define the Public Sector certainly conveys a daunting task because of the wide variance of national idiosyncrasies regarding statistics and accountancy standards. In the need of making a choice, we are going to stick with the manual on *Government Finance Statistics* (2001, 2007), issued by the International Monetary Fund. It was with this methodology in mind that we introduced relationships (8) and (9), to ease the transition from the private to the public realm. Taking advantage of such analytical framework, the Public Sector is divided into two wide-ranging categories:

a) **General Government**, which comprises all government units as well as non-profit institutions that are controlled and financed by government units[11].

b) **Public Corporations**, encompassing financial and nonfinancial units. Furthermore, financial public corporations can be split down into nonmonetary financial public corporations, and monetary public corporations (plus the Central Bank).

My main concern here will be the general government sector, setting apart public corporations. The need of narrowing down our focus to such sector stems from the following rationale:

– It is our purpose to link Public Governance with Corporate Governance through the incremental cash flow model. On the other hand, Public Governance actually deals with the general government sector (more background on this issue in Apreda, 2007a and 2005a).

– Public corporations are hybrid organizations, whose governance I labeled elsewhere[12] "***dual governance***". In many ways, their internal architecture and performance bring them together with private organizations whose analysis comes under the scope of Corporate Governance[13].

If we wished to follow up the whole process that takes place from the starting net worth, **net worth (t)**, in the balance of the government sector throughout the **horizon H = [t; T]** to lastly becoming the ending net worth, **net worth (T)**, we should deal firstly with stock, and later with flows variables. For general background, the reader is referred to Exhibit 1.

Our point of departure will be the mix of stock and flows disclosed by (8) but, as from now, within the context of the general government sector:

$$\textbf{net worth (t) + } \Delta\textbf{CF}_{[t; T]}\textbf{ (net worth due to transactions) +}$$

$$\textbf{+ } \Delta\textbf{CF}_{[t; T]}\textbf{ (net worth due to holding and volume changes) =}$$

$$\textbf{= net worth (T)}$$

▪ *STOCKS*

At date **t**, stocks in the opening balance sheet are rendered by:

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[11] Needless to say, the study of the general government sector must be carried out through three levels of organizational analysis: central, state, and local subsectors.
[12] Apreda (2007a)
[13] On this topic, OECD's paper (2006) on state-owned firms is extremely useful.

EXHIBIT 1   STATEMENT OF GOVERNMENT OPERATIONS

Transactions affecting net worth

- REVENUE   by revenue it is meant an increase in net worth resulting from a transaction.

Taxes
Social contributions
Grants
Other revenues

- EXPENSE   by expense it is meant a decrease in net worth resulting from a transaction.

Compensation of employees
Use of goods and services
Consumption of fixed capital
Interest
Subsidies
Grants
Social benefits
Other expenses

- NET OPERATING BALANCE = REVENUE – EXPENSE

Transactions in nonfinancial assets

- NET ACQUISITION OF NONFINANCIAL ASSETS

Fixed assets
Changes in inventories
Valuables
Nonproduced assets
Other nonfinancial assets

- NET LENDING/BORROWING = NET OPERATING BALANCE – – NET ACQUISITION OF NONFINANCIAL ASSETS

Transactions in Financial Assets and Liabilities (Financing)

- NET ACQUISITION OF FINANCIAL ASSETS

Domestic
Foreign

- NET INCURRENCE OF LIABILITIES

Domestic
Foreign

Alternatively:

- NET LENDING/BORROWING = NET ACQUISITION OF FINANCIAL ASSETS – – NET INCURRENCE OF LIABILITIES

Source: *Government Finance Statistics Manual*, 2001, version 2007 (www.imf.org).

$$\text{(22)}$$

$$\text{net worth (t) =}$$

$$= \text{ net nonfinancial assets (t) + net financial worth (t)}$$

$$= \text{ assets (t) } - \text{ liabilities (t)}$$

or, equivalently[14],

$$\text{net worth (t) } = \text{ net nonfinancial assets (t) +}$$

$$+ \text{ [financial assets (t) – liabilities (t)]}$$

whereas, at date **T**, stocks in the closing balance sheet are spelled out by

$$\text{(23)}$$

$$\text{net worth(T) } = \text{ net nonfinancial assets(T) + net financial worth(T)}$$

$$= \text{ assets (T) } - \text{ liabilities (T)}$$

or, equivalently, by (22) and (23),

$$\text{net worth (T) } = \text{ net nonfinancial assets (T) +}$$

$$+ \text{ [financial assets (T) – liabilities (T)]}$$

▪ *FLOWS*

Net worth stands for a flow, that is to say:

$$\text{(24)}$$

$$\text{net worth (T) } - \text{ net worth (t) } = \Delta \text{ CF }_{[t;\,T]} \text{ net worth } =$$

$$= \Delta\text{CF }_{[t;\,T]} \text{(net worth due to transactions) +}$$

$$+ \Delta\text{CF }_{[t;\,T]} \text{(net worth due to holding and volume changes)}$$

Cash flows due to transactions are linked with transactions stemming from the government sector. By the same token, other economic flows stand for changes of equity, liabilities, and net worth arising from sources other than transactions, generally constrained to holding gains or losses, as well as changes in volume of assets (for instance, due to depletion of assets or new discoveries).

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[14] Bear in mind that it holds

$$\text{net worth (t) } = \text{ [net nonfinancial assets (t) + financial assets (t)] } - \text{ liabilities (t)}$$

a) Cash flows from operations:

At this point, we recall (12):

$$\text{revenue} - \text{expenses} =$$

$$= \Delta CF_{[t;T]} \text{(change in net worth due to transactions)} =$$

$$= \Delta CF_{[t;T]} \text{(transactions in nonfinancial assets + net lending/borrowing)}$$

We must notice that:

$$\text{net lending/borrowing} =$$

$$= \text{transactions in financial assets} - \text{liabilities}$$

b) Cash flows from other economic sources:

$$\Delta CF_{[t;T]} \text{(change in net worth due to other economic flows)} =$$

$$= \Delta CF_{[t;T]} \text{(holding gains and volume changes in nonfinancial assets)} +$$

$$+ \Delta CF_{[t;T]} \text{(change in net financial worth due to other economic flows)}$$

We must take into account that

$$\Delta CF_{[t;T]} \text{(change in net financial worth due to other economic flows)} =$$

$$= \Delta CF_{[t;T]} \text{(holding gains and other volume changes in financial assets)} -$$

$$- \Delta CF_{[t;T]} \text{(holding gains and other volume changes in liabilities)}$$

2.1 FRAMING THE INCREMENTAL CASH FLOW MODEL FOR APPLICATIONS IN PUBLIC GOVERNANCE

In this section, we intend to derive a suitable model of incremental cash flows to fit the framework of analysis needed in Public Governance. To attain this goal, we are going to take advantage of (8).

$$\text{net worth (t)} + \Delta CF_{[t;T]} \text{(net worth due to transactions)} +$$

$$+ \Delta CF_{[t;T]} \text{(net worth due to holding and volume changes)} =$$

$$= \text{net worth (T)}$$

that leads to an expression of incremental net worth[15]

$$\Delta\, CF_{[t;T]}\ \text{net worth} = \Delta_{[t;T]}(\text{assets}) - \Delta_{[t;T]}(\text{liabilities})$$

(25)

As we have already seen, an in contradistinction with the private sector, the public sector splits into two units of analysis:

a) the general government that has no equity conveying ownership rights over residual cash flows;

b) the public corporations, which are entitled to equity.

In this paper, we are dealing with the government sector only. So, instead of equation (19)[16]

$$\Delta\, \text{equity} = \{\Delta\, \text{new equity issues} - $$

$$ - \Delta\, \text{repurchases}\} + \Delta\, \text{retained earnings}$$

we can proceed directly towards the following assimilation:

$$\Delta\, CF\ \text{net worth} = \Delta\, \text{equity} = \Delta\, \text{retained earnings}$$

(26)

while the system of relationships given by (12) for net income expressions, they turn out to be[17]

$$\begin{cases} \text{net income} = \Delta\, CF\ \text{net worth} \\ \text{net income} = \Delta\, \text{revenue} - \Delta\, \text{expense} \end{cases}$$

Therefore, from (25) it also holds that

$$\Delta\, \text{revenue} - \Delta\, \text{expense} = $$

$$ = \Delta\, \text{assets} - \Delta\, \text{liabilities}$$

(27)

However, we have to build up some adjustments for the expression above, which seem more suitable for a Public Governance approach.

Stage 1: Revenue – Expense

Adjustment to expense means that we have to set apart not only interest payments but depreciation charges (see Exhibit 1). We can draw out both items from expenses, while keeping the latter label for the remainder, this way:

(28)

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[15] On this account, see footnotes (7) and (8).
[16] In the remainder of this appendix we drop subscripts, for ease of notation.
[17] Notice that dividends equal zero.

$$\Delta \text{ revenue } - \Delta \text{ expense } \Rightarrow$$

$$\Rightarrow \Delta \text{ revenue } - \Delta \text{ expense } + \text{ depreciation } - \text{ interest}$$

Stage 2: Assets

We include within this category nonfinancial as well as financial assets:

$$\Delta \text{ assets } =$$

$$= \text{ nonfinancial assets } + \text{ financial assets}$$

Working out the right side of his last expression, we can isolate short-term assets from non short-term assets, either for nonfinancial or financial. In other words:

(29)

$$\Delta \text{ assets } =$$

$$= \Delta \text{ short-term assets } + \Delta \text{ non short-term assets}$$

Stage 3: Liabilities

For the International Monetary Fund, as it is explained in the referred Manual (IMF, 2001, 2007), the category "liabilities" comprises domestic and foreign categories:

$$\Delta \text{ liabilities } = \Delta \text{ domestic liabilities } + \Delta \text{ foreign liabilities}$$

Working out the last expression, we can rearrange the underlying categories, regardless of their being domestic or foreign, into the following ones:

(30)

$$\Delta \text{ liabilities } =$$

$$= \Delta \text{ short-term liabilities } + \Delta \text{ non short-term liabilities}$$

Lastly, we can split down the non short-term liabilities in the conventional components as they are currently used in Corporate Finance:

(31)

$$\Delta \text{ non short-term liabilities } =$$

$$= \Delta \text{ new debt issues liabilities } -$$

$$- \Delta \text{ debt repurchase } - \Delta \text{ debt repayment}$$

Now we can plunge (28) into (27) to get

(32)

$$\Delta \text{ revenue } - \Delta \text{ expense } + \text{ depreciation } - \text{ interest } =$$

$$= \Delta \text{ assets } - \Delta \text{ liabilities}$$

Stage 4: Cash flows from operations

Next, we are going to define a new construct of cash flows brought about by operations:

(33)

$$\Delta \text{ CF(operations)} =$$

$$= \Delta \text{ revenue } - \Delta \text{ expense } + \text{ depreciation}$$

and we introduce (33) into (32) to get

(34)

$$\Delta \text{ CF(operations)} - \text{ interest} = \Delta \text{ assets } - \Delta \text{ liabilities}$$

and profiting from (29) and (30) it holds:

$$\Delta \text{ CF(operations)} - \text{ interest} =$$

$$= \Delta \text{ short-term assets } + \Delta \text{ non short-term assets } -$$

$$- \Delta \text{ short-term liabilities } - \Delta \text{ non short-term liabilities}$$

rearranging, it follows that

(35)

$$\Delta \text{ CF(operations)} - \text{ interest} =$$

$$= (\Delta \text{ short-term assets } - \Delta \text{ short-term liabilities }) +$$

$$+ \Delta \text{ non short-term assets } - \Delta \text{ non short-term liabilities}$$

Stage 5: Towards cash flows from assets

We re-label some items introduced in section 2 and 3, in the fashion of the corporate governance model:

Firstly the items in brackets on the right side of the last equation:

$$(\Delta \text{ short-term assets } - \Delta \text{ short-term liabilities }) =$$

$$= \text{ provisions to working capital}$$

Secondly, the non short-term assets

$$\Delta \text{ non short-term assets } =$$

$$\textbf{=} \quad \textbf{provision to non short-term assets}$$

and back to (33), it will hold:

$$\Delta\textbf{CF(operations)} \ \textbf{– interest} \ \textbf{=}$$

$$\textbf{=} \quad \textbf{provisions to working capital} \ \textbf{+}$$

$$\textbf{+ provision to non short-term assets} \ \textbf{–}$$

$$\textbf{–} \ \Delta\textbf{ non short-term liabilities}$$

Rearranging the information:

(36)

$$\Delta\textbf{CF(operations)} \ \textbf{– provisions to working capital} \ \textbf{–}$$

$$\textbf{– provision to non short-term assets} \ \textbf{=}$$

$$\textbf{=} \ \textbf{–} \ \Delta\textbf{ non short-term liabilities} \ \textbf{+ interest}$$

Thereupon, from (36) we define a new construct of cash flows, those generated by assets, in the following way:

$$\Delta\textbf{CF(assets)} \quad \textbf{=} \quad \Delta\textbf{CF(operations)} \ \textbf{–}$$

$$\textbf{–} \ \textbf{provisions to working capital} \ \textbf{–} \ \textbf{provision to non short-term assets}$$

Stage 6: Towards cash flows addressed to creditors

Taking advantage from (31):

$$\textbf{–} \ \Delta\textbf{ non short-term liabilities} \ \textbf{+ interest =}$$

$$\textbf{=} \ \textbf{–} \ \Delta\textbf{ new debt issues liabilities} \quad \textbf{+} \ \Delta\textbf{ debt repurchase} \quad \textbf{+}$$

$$\textbf{+} \ \Delta\textbf{ debt repayment} \ \textbf{+} \ \textbf{interest}$$

we can translate these items in the fashion of Corporate Finance:

(37)

$$\Delta\textbf{CF(addressed to creditors)} \ \textbf{=}$$

$$\textbf{=} \ \textbf{–} \ \Delta\textbf{ new debt issues liabilities} \quad \textbf{+} \ \Delta\textbf{ debt repurchase} \quad \textbf{+}$$

$$\textbf{+} \ \Delta\textbf{ debt repayment} \ \textbf{+} \ \textbf{interest}$$

Stage 7: Eliciting the incremental cash-flow model in Public Governance

Afterwards, and from (34) and (37), we are led to:

$$\Delta CF(\text{ generated by assets}) \ = \ \Delta CF(\text{ addressed to creditors})$$

And this is the incremental cash flow model to be used in the analysis of the general government sector. (see Exhibit 2)

$$\Delta CF(\text{ operations}) \ =$$
$$= \ \Delta \text{ revenue} \ - \ \Delta \text{ expense} \ + \ \text{depreciation}$$

$$\Delta CF(\text{ assets}) \ = \ \Delta CF(\text{ operations}) \ -$$
$$- \ \text{provisions to working capital} \ - \ \text{provision to non short-term assets}$$

$$\Delta CF(\text{ generated by assets}) \ =$$
$$= \ \Delta CF(\text{ addressed to creditors})$$

$$\Delta CF(\text{ addressed to creditors}) \ =$$
$$= \ - \ \Delta \text{ new debt issues liabilities} \ + \ \Delta \text{ debt repurchase} \ +$$
$$+ \ \Delta \text{ debt repayment} \ + \ \text{interest}$$
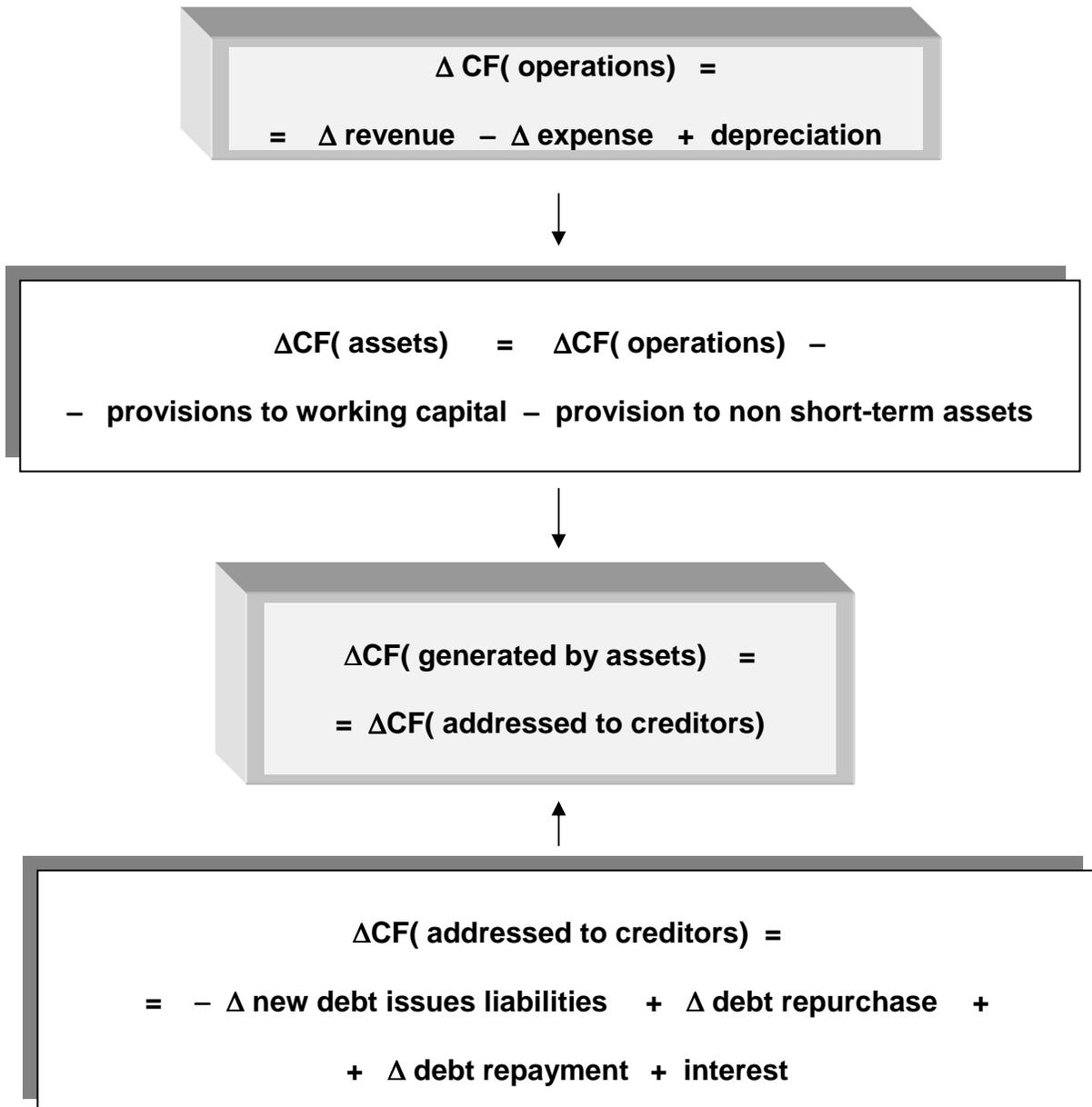
Exhibit 2   Incremental Cash-Flow Model in Public Governance

CONCLUSIONS

We have framed the incremental cash-flow model, so widely used in Corporate Finance and Governance, in order that this powerful devise in budgeting as well controlling both uses and sources of cash flows, could cope likewise with distinctive issues arising out of Public Governance.

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APPENDIX 1
PUBLIC GOVERNANCE

Governance in the public sector of any country refers to the running of the State, taking into account the design of its architecture and the variegated mechanisms by which the government should work well[18].

Whereas Public Governance is a latecomer, Government has been a time-honored field of study and practice since human beings built up structures and arrangements for living in society. A turning point in this learning process was the **Peace of Westphalia** (1648) that stands for a watershed in History and Political Science. As a matter of fact, it added to a new framework for the understanding of international relations, whose main features were the following:

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[18] This Appendix draws out of our latest book: *Public Governance: A Blueprint for Political Action and Better Governments* (2007a), chapter 1.

a) there are a set of sovereign states which behave like autonomous and rational actors any time they relate with each other;

b) these states claim the right for a distinctive territory, within which they exert full authority and control, that is to say, they become sovereign.

The territorial issue amounts to the exercise of political authority over a geographical unit. Autonomy constrains any other state to not intrude in the domestic affairs of a certain state.

It was from the Peace of Westphalia onwards that the world has been witnessing to what extent such global arrangement evolved through an endless process of compromising its basic tenets, as Krasner (1995) so acutely remarked in his oft-quoted paper. It is hardly surprising that such a process might have fostered the interest in encompassing topics around the State and its government to the extent of laying the foundations for a scholarly field of inquiry and practice, to be undertaken independently from philosophical analysis.

As regards Public Governance, however, academic and political involvement with this matter goes further back only three decades ago. It focuses neither in what the nature of government adds up to, nor intends to provide a theory about the management of government, both topics primarily found in the realm of the Political Science. Instead, Public Governance deals with governing structures and attempts to cope with a set of distinctive issues that overlap with Economics, Political Science, International Relations, Public Administration, and Law.

After these prefatory remarks, we intend to frame a suitable meaning of Public Governance setting forth a definition over which we expanded in length elsewhere[19].

Definition   Public Governance

*By **Public Governance** is meant the kind of governance that deals with organizations in representative democracies, bringing the following levels of analysis into focus:*

- *The Founding Charter, Bill of Rights and the legal system of the underlying political system.*
- *Institutional design: electoral system, representation mechanisms, the structure of separation of powers and the exercise of authority.*
- *The processes by which government officials, representatives, and the judiciary are appointed, monitored, and replaced; the design of the governmental bureaucracy and its management.*
- *The fiduciary role, agency relationships, agenda-building, accountability and transparency, as well as the whole array of checks and balances.*
- *Integrity of the Judiciary; law enforcement; property rights.*
- *The role of collective action: participation and opposition, political parties, groups of interest, veto-players, gatekeepers, and the media.*
- *How to avoid rent-seeking, soft-budget constraint, political clientelism, state-capture, tunneling, and corruption.*

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[19] Apreda, R. (2007a) *Public Governance: A Blueprint for Political Actions and Better Governments.* Nova Science Publishers, New York, chapters 1 and 2.

We have to bear in mind, however, that public governance also refers to smaller units in the State, like provinces (states), councils in towns and cities, legislative branches, government agencies, governors or mayors' offices, defense and security's structures, and the like.