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## **Measuring performance of a pharmaceutical company in the MENA region by means of the cash flow statement**

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**Abstract:** Similar to a product an entity passes through four life-cycles stages. These stages reflect a set of financial characteristics of the flow of funds that leads to different measurements of income and cash flows. The cash flow statement supplies information about both income and cash flows. Therefore, a combination of the life-cycle theory, financial characteristics of income and cash flows, and an analysis of the cash flow statement may be useful as a performance measure and an indication of how the entity is managing their flow of funds. This paper evaluates an entity in the pharmaceutical sector in the MENA region by means of income and cash flow during the mature cycle. This paper uses steps for analysing the flow of funds and compares the application thereof to a benchmark in the mature phase of an entity's life cycle. In theory an entity will have typical income and cash flow patterns (financial characteristics) during each life-cycle stage. This study applies a model developed for performance evaluations during the different life-cycles. The results of this study show that the model may be used as an effective tool to illustrate the usefulness of the cash flow statement.

**Keywords:** accounting measures; cash flows; financial analysis; IAS 7; AC 118; income flow; life-cycle; performance evaluation.

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**Biographical notes:** Leonie Jooste is an Associate Professor in the Faculty of Business at University of Wollongong in Dubai. She started her career as a school teacher in South Africa. She left the teaching profession to join the Nelson Mandela Metropolitan University in Port Elizabeth. In January 2009, she joined UOWD in the UAE and teaches accounting to undergraduate and postgraduate students. She obtained her Doctorate in Financial Management Sciences from the University of Pretoria in South Africa. She presents workshops in accounting and publishes articles in international accredited journals. She is a reviewer for academic journals and published a chapter in an academic textbook.

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## **1 Introduction**

The life-cycle hypothesis, which was developed by Franco Modigliani (Nobelprize, 2017), is an economic theory that relates to the consumption patterns of an individual during their lifespan. The product life-cycle theory, derived from the life-cycle hypothesis, is a familiar business concept since the early 60s. It describes the stages of developing new inventions, products or ideas from introduction (birth) to its decline (death). Similar to the product life-cycle theory researchers agree that this theory is also significant to describe the life-cycles of an entity (Steyn and Hamman, 2008; Black, 1998a). This life-cycle theory suggests that each phase in the life-cycle faces different operational circumstances and financial characteristics which will give rise to different cash flow patterns during each phase. These financial characteristics will lead to different information on income and cash flows in each phase of the life-cycle (Steyn and Hamman 2008). Therefore, the income and cash patterns during each individual life-cycle may be used as a tool to evaluate the performance of an entity in its phase of the life-cycle (Black, 1998a; Hertenstein and McKinnon, 1997).

Literature indicates the importance of income and cash flow patterns during the different life-cycles of an entity to evaluate performance (Wild et al., 2007). Hertenstein and McKinnon (1997) supported the importance of the life cycle theory and suggested steps for a performance evaluation of the cash flow statement during these different life cycles. However, there is no evidence where the theory was applied to measure the financial performance of an entity. Therefore, using the income and cash flow patterns and steps suggested by Hertenstein and McKinnon (1997) a model was developed by Jooste (2011) to evaluate the performance of an entity. This study focuses on the implementation of this module by applying it to a listed entity in the pharmaceutical sector in the MENA region.

## **2 The research problem**

According to Black (1998b) research and statements in the financial press suggest a controversy as to which accounting measure is more value-relevant: earnings or cash flows. Many researchers (Gibson, 2011; Verschoor, 2002; Dechow, 1994) find the income statement to be the preferred statement. Other researchers (Vance, 2010; Brigham, 2009) state that earnings are not more important than cash flows.

The problem therefore is to decide which statement or measure is more useful for a performance evaluation. Jooste (2011) developed a model that accepts that both income and cash flows are important for analysing an entity and that income and cash flows have specific patterns in the different life-cycle stages. The question can be posed whether this model can be applied to evaluate the performance of an entity in each phase of the life-cycle by means of the flow of funds.

## **3 The purpose and objectives of the study**

Since the introduction of the cash flow statement in 1997 as a mandatory statement, ratios have been developed for evaluation of the cash flow statement. The problem with the cash flow ratios are that they were developed by researchers and academics but up to date

they are not as commonly used as the traditional ratios. Therefore, there is a lack of meaningful cash flow ratios. However, even with suitable cash flow ratios, these ratios have to be compared with traditional income statement and balance sheet ratios for a true reflection of the financial health and/or weaknesses of an entity.

The primary objective of this study, therefore, is to use a benchmark and practical operational steps to measure performance by means of an evaluation of the cash flow statement of an entity during the mature cycle. The primary objective will be reached by:

- Comparing the cash flow patterns of an entity, during the mature life-cycle stage, against the benchmark.
- Using suggesting steps to measure the performance of the entity.
- Testing performance measure by means of a performance analysis of the cash flow statement.

#### **4 Literature review**

The designing of a benchmark and suggested steps for a performance evaluation of an entity by means of income and cash flows during different life cycles, as well as literature relating to the life-cycle theory, income and cash flows as performance measures were investigated. The life-cycle of an entity provides helpful insights about income and cash flow relationships. Therefore, both income and cash flow measures are useful for evaluation of growth and growth prospects that have implications for the value and performance of an entity.

##### *4.1 Income and cash flows*

According to Black (1998a), the income of an entity is a good indication of the earning power of the entity. Smart and Graham (2012) on the other hand agrees that managers and analysts track a variety of cash flow measures to estimate an entity's worth. Penman (2010) states that analysts forecast earnings rather than cash flows and stocks markets appears to value entities on the basis of expected earnings. When an entity fails to meet analysts' earnings forecasts it results in a drop in share price, while beating earnings expectations usually results in an increased share price. Furthermore, Penman (2010) believes, that when analysts have valuation in mind they forecast earnings rather than cash flows. The difference between earnings and cash flow from operations is the accruals. Although financial managers are interested in the information in an entity's accrual based financial statements, the primary focus is on cash flows.

Gibson (2011) states that the income statement is often considered being the most important financial statement. Vance (2010) on the other hand states that an entity will fail if runs out of cash. Deegan (2006) states that there can be much disagreement about which financial statement is more important and in recent times there has been much debate about how managers should value entities.

Many entities are only concerned in the bottom line or making the numbers (Verschoor, 2002). Whereas Dechow (1994) found that income is a better performance measure of an entity than cash flows. Brigham (2009) on the other hand states that earnings are not more important than cash flows.

Income figures of an entity should provide a good indication of the earning power of an entity. However, income may be a product of manipulations designed purely to increase the reported income of an entity. Inventory levels, the timing of inventory shipments or purchases, debtor policies may be adjusted by management to affect cost allocations and income (Dechow, 1994). One accounting measure, income or cash flows, may provide information content beyond that provided by the other, depending whether it has incremental or relative information content or both (Biddle et al., 1995). Ingram and Lee (1997) states that both income and cash flows are important for measuring performance when considered jointly and not separately) and, furthermore, suggest the use of income and cash flows during the life-cycle stages of an entity to measure performance.

The income of an entity provides information about future cash flows and future growth opportunities, whereas cash flow information provides information about the ability to generate cash flows and the need of an entity to utilise the cash flows. Therefore, to make economic decisions about an entity requires an evaluation of the ability, timing and certainty to generate income and cash flows. In other words, it requires a performance evaluation.

#### *4.2 The cash flow statement of an entity*

The cash flow statement is a dynamic statement and records the changes in the other statement over a period and focuses on cash available from primary operations and investments. The cash flow statement is constructed by using the income statement for a given year along with the beginning- and end-of year balance sheets. The procedure involves classifying balance sheet changes as inflows or outflows of cash. The income statement is also obtained and all relevant values are classified into operating, investment and financing cash flow in a proper format in the cash flow statement (Smart and Graham, 2012).

According to Steyn and Hamman (2008), entities that consume cash consistently are on the way to disaster and therefore make the cash flow statement a vital set of information for assessing financial health. The statement of cash flows allows the financial manager and other interested parties to evaluate an entity's cash flow over time. Unusual changes in either of the major activities of cash flow or in specific items offer clues to problems an entity may be experiencing. Smart and Graham (2012) agree that an unusually large increase in accounts receivable or inventory, resulting in major cash outflow, may signal credit or inventory problems. Financial managers and analysts use the cash flow statement to determine if an entity will need additional external financing or will generate excess cash that could be reinvested or distributed to shareholders.

Financial ratios that relate to the cash flow statement were slow in being developed. This was related to several factors. For one thing, most financial ratios traditionally related an income statement item(s) to a balance sheet item(s) and this became the normal way of approaching financial analysis. The cash flow statement did not become a required statement until 1987 in USA. Thus, it took a while for analysts to become familiar with the statement (Gibson, 2011).

### *4.3 The life-cycle theory*

According to Berman (2013) life-cycle assessment dates back to the 1960s. In the late 1970s interest in these studies declined and in the late 1980s attention was again focused on the life-cycle assessment as a potentially valuable environmental management tool. Berman (2013) recognises that it is hard for an entity to get to the top and therefore suggest adopting a business life-cycle management model where businesses will find it easier to reach and build on great success.

A doctoral study by Wang (2005) states that business functions indicate the life cycle of an entity. Therefore, the size, product or length in the industry, does not indicate the life-cycle, but the interaction of business functions, profitability, sustainability and competitiveness. Furthermore, industries experience similar life-cycles. The stages are the same for all industries, but every industry will experience these stages differently, they will last longer for some and pass quickly for others. Therefore, an entity's strategic plan is likely to be greatly influenced by the stage in the life cycle at which the entity finds itself (Inc, 2013).

The stages in the life-cycle theory are known as the introduction, growth, maturity and decline stages and were originally developed to assist marketers to forecast future events and suggest appropriate strategies during each stage (McDaniel et al., 2006). During these life-cycles the income and cash flows of an entity will follow a certain pattern (Mueller, 1972; Myers, 1977). Therefore, at each stage in the life-cycle of an entity, different measures of financial performance, whether income or cash flows, will take on different degrees of importance (Biddle et al., 1995).

#### *4.3.1 Introduction stage*

The introduction stage frequently takes the form of an idea for developing a new invention, a new marketing technique or a more efficient organisational structure for an entity (Mueller, 2001). A large portion of an entity's value in its introduction stage is a function of its growth opportunities. Therefore, financing is required to invest in growth opportunities and as a result, inflow from financing will be high. The feasibility of growth proceeding is investigated, and on acceptance only can the entity move on to the next stage (Burke, 2007). Van den Brande (2011) also agrees that entities will rely on cash from owners.

During the introduction and early growth stages, the cash flow generated from operations (CFO) is negative, because of the cash outflows needed to launch the entity. Expenditures on product development and marketing, coupled with relatively low sales levels (low cash levels), can result in operating losses and negative returns on assets. Therefore, the entity will have a cash outflow for investments, resulting from the need to build productive capacity (Stickney and Brown, 1999).

Negative cash flow from investing activities (CFI) also occurs during the early stages, as the entity builds productive capacity. The level of this negative CFI depends on the degree of capital intensity of the entity. Entities must obtain the cash needed for operating and investing activities during these early stages from external sources, such as debt and equity (Black, 2003). As a result inflow from financing will be high, therefore an outflow from CFI.

### 4.3.2 *Growth stage*

Similar to the introduction stage, the growth stage also requires a significant amount of capital. Funds are required for continued investment in property, plant and equipment and to facilitate the growth required by the market demands (Inc, 2013). The investment in growth opportunities has begun, some financing has been obtained and the entity is generating income and cash flows. Productive assets are needed to generate growth opportunities and obtaining the necessary financing is still a concern of the entity.

During this stage, an entity should be generating income and cash flows from operations and the value of its assets will be higher than in the introduction stage (Black, 1998a). The life cycle curve is very steep, indicating fast growth. Growing demand will create sales growth and earnings and accompanying assets will also grow and profits will be positive (Inc, 2013; Van den Brande, 2011).

During the introduction and growth stages, an entity focuses on product development (R&D spending) and capacity enlargement (capital spending). The objective is to gain market acceptance and market share. There may be considerable uncertainty during these stages regarding the market viability of an entity (its products). As sales accelerate during the high growth stage, operating income and return on assets turn positive and the need for investments will decrease (Stickney and Brown, 1999).

As the growth stage accelerates, operations become profitable and begin to generate cash. Entities use the cash generated to finance debtors and build inventories for expected higher sales levels in the future. Thus, NI usually becomes positive earlier than CFO. The negative flow of CFI depends on an entity's rate of growth and its degree of capital intensity. As in the introduction stage, entities obtain most of the cash needed during the growth stage from external sources.

### 4.3.3 *Mature stage*

As an entity moves through the maturity stage, the cash flow changes dramatically. Operations become a net provider of cash, both because of market acceptance of the product and a levelling off of working capital needs. Also, with revenues levelling off, entities invest to maintain rather than increase productive capacity. During later stages of the maturity stage, net CFI may even become positive as cash inflows from sales of unused or obsolete assets exceed new investments. Entities can use the excess CFO, and to a lesser extent, the sale of investments, to repay debt incurred during the introduction and growth stages and to pay dividends. During the decline stage, income CFO and CFI tail off as sales decrease and entities repay their remaining debt (Wild et al., 2007).

In the mature stage there is an inflow of money from customers, the entity is making profits as well as investments (Van den Brande, 2011). Operations generate cash and investing levels decline to the point of maintaining the asset base, rather than increasing capacity. Therefore, it will be in a stage of moderate or low growth. The entity will have more productive assets than in the earlier stages with many of its cash flow needs internally generated.

### 4.3.4 *Decline stage*

Van den Brande (2011) suggests that management should consult with accountants and financial advisors for the best strategy to sell or close down the entity. During the decline

stage, an entity exits the industry as sales decline and profit opportunities diminish (Stickney and Brown, 1999).

The life-cycle of an entity provides helpful insights about income and cash flow relationships. Many conflicting statements are made by what information is needed to evaluate and entity.

#### *4.4 Income and cash flow patterns*

Many entities fail within the first year or two owing to cash flows (Berman, 2013). As financial viability will depend on the ability of an entity to realise its growth opportunities, financing cash flows will provide information about the ability to obtain financing for growth and development. Investing cash flows provide information about investment in long-term assets to develop growth opportunities. Operating cash flows, on the other hand, measures the ability to generate cash internally to fund growth opportunities (Black, 1998a). Furthermore, the income of an entity is a good indication of the earning power of the entity.

##### *4.4.1 Income*

The value of net income (NI) will provide information about the size and risk of future cash flows from assets as well as size, risk and future investment in growth opportunities. In the introduction and later life-cycle stages of an entity, income is expected to be negative, whereas in the middle stages, it will be positive (Stickney and Brown, 1999).

In the introduction stage, the entity will have few assets that will generate little if any income. Expenses will be high and an entity will initially incur a loss or profits will be low. During the growth stage, business operations will become more profitable and only in the later growth and mature stages, is income expected to be more permanent. Income is internally generated from productive assets and the returns on asset ratios are also the highest in the mature stage. When an entity is in the declining stage, income is again expected to be negative, which is also a reflection of an entity's economic realities, the size and risk of future cash flows (Black, 1998a).

##### *4.4.2 Cash flows*

The CFO is an important variable as it represents the cash generated before dividend pay-outs and should be positive to signify a healthy entity. An entity must generate sufficient CFO to repay loans and pay-out dividend and to replace long-term assets (CFI). If CFO is negative cash must be obtained through new loans or a share issue which is cash flow from financing activities (CFF). According to Steyn and Hamman (2008) some analysts maintain that CFO must be positive while the CFI and CFF are negative. This will indicate that an entity is generating enough cash to finance investment and redeem debts.

In the late maturity and decline stages, the CFI will be positive when the entity divests its assets, generating positive CFI (Wild et al., 2007). However, an entity can regenerate by investing in new products and going back into the growth stage, with the result that the CFI will decline again (Black, 1998a).

CFI, in normal circumstances, is expected to be negative as entities are regularly replacing long-term assets and investing in new growth opportunities. A positive CFI will



indicate that an entity is selling long-term assets to finance operating activities and therefore may be depleting its operational resource base. When a CFI flows from restructuring, for example the sale of a subsidiary, it may be acceptable (Steyn and Hamman, 2008). Similar, according to Steyn and Hamman (2008), a positive CFF is questionable when CFO is negative. It will imply that long-term financing is necessary to fund daily activities. A positive CFF may be acceptable when CFO is positive and the entity is securing external finance as leverage.

Dickinson (2010), states that in the introduction entities suffers both from negative income and cash flow. Profit margins are maximised during increases in investment and efficiency which means that CFO is positive during the growth and maturity stages. Furthermore, when growth rates decline it will eventually lead to declining income and the CFO will decrease and become negative as the entity enters the decline stage. The CFI are negative for introduction and growth entities while mature entities decrease investment relative to growing entities, therefore, they will invest to maintain capital. CFI will be negative for mature entities whereas CFI will liquidate assets in order to service debt and to support operations which will result in positive CFI (Dickinson, 2010).

According to Dickinson (2010) the CFF are positive for introduction and growth stage. However, mature entities will begin to service debt and distribute cash to shareholders which results in a negative CFF. Dickinson (2010) found a void in the literature with respect to whether CFF will be positive or negative during the declining stage. CFF also provides information about the future cash flows from assets. Cash flow has to be produced to service debt obligations or to obtain additional funding.

The life cycle theory is therefore helpful for understanding these patterns and why it differs over time. Dickinson (2010) suggests using the cash flow patterns as a proxy for identifying an entity's life cycle stage. Steyn and Hamman (2005) states that entities in different sectors have different attributes and every entity moves through its own life-cycle. Even though the lengths of these life-cycles within the different sectors may vary, the expected relationship between the income and the cash flow from operating, investing and financing activities within each stage are similar. This specific income and cash flow patterns, therefore, may serve as a benchmark against which the income and cash flows of individual entities can be compared to measure performance (Black, 1998b; Hertenstein and McKinnon, 1997).

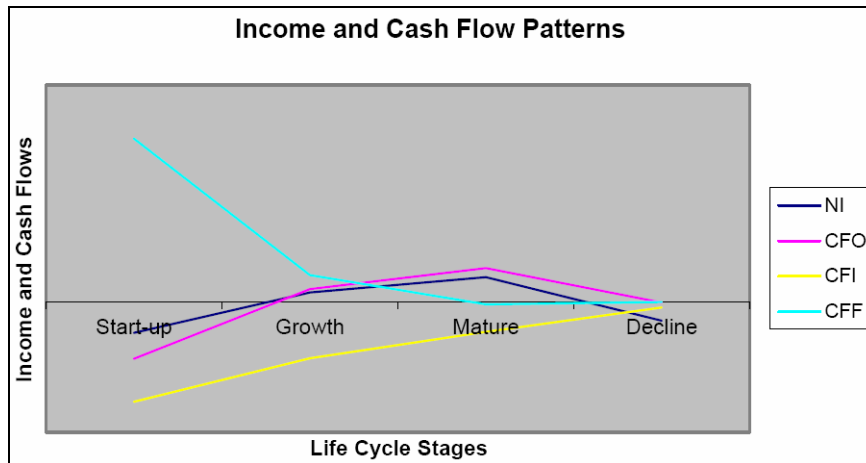
#### *4.5 A benchmark for income and cash flow during the life cycle stages*

Steyn and Hamman (2005) and Hertenstein and McKinnon (1997) suggest combining the theory of an entity's life-cycle with an analysis of its cash flow statement. Such a combination is useful, especially to non-specialists' users, as key variables may be measured by looking at the actual characteristics of the entity, its income and cash flows patterns during the life cycle stages.

Wang (2005) describes benchmarking as a process of comparing an entity's performance with that of others, identifying comparatively well-performing entities, and learning what they do that allows them to achieve a high level of performance. The literature review indicates that there is agreement between researchers that income and cash flows have a particular pattern during each phase of the life cycle of an entity. Therefore, the benchmark used in this study was derived from the typical patterns of income and cash flows during each life cycle (Jooste, 2011). Stickney and Brown (1999) and Wild et al. (2007) illustrate the income and cash flow patterns during the life-cycle

stages of an entity by means of a chart. Figure 1 outlines the income and cash flow patterns during the life-cycle stages of an entity as suggested by Stickney and Brown (1999) and Wild et al. (2007). The chart (Figure 1) indicates the typical income and cash flows of a normal healthy entity.

**Figure 1** Income and cash flow patterns over the life-cycle of an entity (see online version for colours)



Source: Stickney and Brown (1999) and Wild et al. (2007)

## 5 Research methodology

Jooste (2011) used typical income and cash flow patterns during the different life-cycles of an entity to develop a benchmark. This benchmark indicates how the income and different cash flows of an entity should be during each life-cycle. Furthermore, steps are included for an evaluation of the cash flow statement to use with the benchmark as an overall performance evaluation. These steps and methods will be employed in this study to investigate the performance evaluation by means of income and cash flows during life cycles

Industry ratios or ratios of other entities are not always available for comparisons in financial evaluations. Therefore, as an alternative to a ratio analysis this study uses the benchmark and steps suggested by Jooste (2011) in an empirical evaluation of an entity. The evaluation of the entity in this study is in the mature cycle. The consolidated cash flow statements of a listed company in the pharmaceutical sector in the MENA region for 2015 is used in the performance evaluation and applied to the model.

## 6 The evaluation of income and cash flows during the life-cycle stages of an entity

According to Jooste (2011), the value of growth opportunities compared to the value of assets in the mature stage, is relatively lower than in the previous two stages. Operations

generate cash and investing levels decline to the point of maintaining the asset base, rather than increasing capacity. Therefore, it will be in a stage of moderate or low growth. The entity will have more productive assets than in the earlier stages with many of its cash flow needs internally generated.

Table 1 outlines the steps for analysing the cash flow statement. Each process in the analysis is addressed as an individual step. This differs from Hertenstein and Mckinnon (1997) who included sub-steps in some of their four steps.

**Table 1** Steps for an analysis of the cash flow statement

<i>Analysis of the cash flow statement</i>	
1	Analyse trend in NI <ul style="list-style-type: none"> <li>• Determine trends in income or losses over the past few years</li> <li>• Determine whether income (loss) is growing or shrinking</li> <li>• Scan comparative figures for the past three years for unusual items that needs explanation</li> </ul>
2	CFO analysis: <ul style="list-style-type: none"> <li>• CFO drives the entity; it should be positive and should contribute toward investing activities</li> <li>• Check major adjustments to net income:               <ol style="list-style-type: none"> <li>a Depreciation and amortisation</li> <li>b Restructuring</li> <li>c Impairment losses</li> <li>d Major changes in inventories, receivables and payables</li> </ol> </li> </ul>
3	Compare NI with trend in CFO. CFO should exceed net income and should be growing, unless the entity is in the early introduction stage or the late decline stage
4	CFI analysis <ul style="list-style-type: none"> <li>• Inflows show shrinkage in business</li> <li>• Outflows show growth</li> <li>• Determine whether growth is through PPE expansion or through acquisitions</li> <li>• Compare PPE expenditures with depreciation and amortisation PPE should exceed depreciation and amortisation</li> </ul>
5	CFF analysis <ul style="list-style-type: none"> <li>• How is the entity financing operations or investing activities (i.e., are they relying on borrowing or issuing shares)?</li> <li>• Is the entity buying back stock? If yes, why?</li> <li>• Outflows show shrinkage of debt or equity</li> <li>• Inflows show growth in financing</li> </ul>
6	Significant change in cash balance <ul style="list-style-type: none"> <li>• What does the change suggest? (Plans for expansions? Acquisitions? More liquidity needed?)</li> </ul>

## 7 Results of the evaluation of the cash flow statement by means of the suggested model

When analysing an entity, all the available information needs to be put in a usable context to supply an overall picture of the entity. Table 2 presents a set of consolidated cash flow statements that was available of a listed entity in the pharmaceutical industry in 2015. The indirect method is used for the cash flow statement as it includes information from the income statement that otherwise will have to be search for.

**Table 2** The consolidated cash flow statement for the year ended 31 December 2015

<i>Consolidated cash flow statement</i>	<i>2015 \$m</i>	<i>2014 \$m</i>
Operating activities:		
Profit before tax	318	362
Adjustments for:		
Depreciation, amortisation, and impairment of:	51	49
Property, plant and equipment	22	23
Intangible assets	7	-
Investment in associates	(11)	1
(Gain)/Loss on disposal of property, plant and equipment	-	(1)
Gain on disposal of intangible assets	3	5
Gain on disposal of intangible assets	15	8
Movement on provisions	(3)	(4)
Cost of equity-settled employee share scheme	57	38
Financial income	2	6
Interest and bank charges		
Results from associates		
Cash flow before working capital	461	487
Change in trade and other receivables	(78)	(16)
Change in other current assets	(1)	-
Change in inventories	4	2
Change in trade and other payables	28	24
Change in other current liabilities	3	7
Cash generated by operations	417	504
Income tax paid	(51)	(79)
Net cash generated from operating activities	366	425
Investing activities:		
Purchases of property, plant and equipment	(82)	(91)
Proceeds from disposal of property, plant and equipment	31	1
Purchases of intangible assets	-	1
Proceeds from disposal of intangible assets	-	(5)
Investment in financial and other non-current assets	(1)	-
Investment in available for sale investments	(20)	-

**Table 2** The consolidated cash flow statement for the year ended 31 December 2015 (continued)

<i>Consolidated cash flow statement</i>	<i>2015 \$m</i>	<i>2014 \$m</i>
Investments designated at fair value	-	(225)
Acquisition of business undertakings net of cash acquired	3	4
Finance income	(38)	4
Acquisition related amounts held in escrow account		
Net cash used in investing activities	(162)	(342)
Financing activities:		
Increase/(decrease) in collateralised and restricted cash	6	(1)
Increase in long-term financial debts	529	5
Repayment of long-term financial debts	(91)	(121)
(Decrease)/increase in short-term borrowings	(270)	241
Dividends paid	(64)	(55)
Dividends paid to non-controlling shareholders of subsidiaries	(2)	(1)
Interest paid	(49)	(38)
Proceeds from issue of new shares	1	-
Proceeds from co-development and earn out payment agreement	17	-
Net cash generated by financing activities	77	30
Net increase in cash and cash equivalents	281	113
Cash and cash equivalents at beginning of year	280	168
Foreign exchange translation movements	(8)	(1)
Cash and cash equivalents at end of year	553	280

Financial statements allow an analyst to identify the stage in the life-cycle of an entity and whether it is in the earlier or latter part of that stage. The analysis requires information about the life-stage, size and industry in which the entity functions. To determine the stage in which the entity is the analyst can assess the product or the industry. If it is a mature industry, the time that the entity is functioning in the industry should suggest the stage of the life-cycle. During the mature stage entrepreneurs are faced with the choice to further expand or to exit the business. Therefore, to continue to grow and to increase the market share will be one indication of being in the mature cycle (Entrepreneur, 2017).

Placing the entity in a life-cycle is the starting point of the performance measure. The entity in this study is in the mature stage of its life-cycle. During this stage, NI and CFO will reach their highest figures, CFO may be used to pay off debt (CFF is zero) and investment in assets may decrease (CFI increase).

#### Step 1 Analyse trends in income

NI (profit or loss for the year) is a key measure of financial health. In the mature stage income is expected to be more permanent and internally generated from productive assets. The NI peaks during the maturity stage, and then begins to decline.

To determine if the NI figure is an effective measure of performance, it should be compared with the NI in Figure 1. In this instance, the mature stage, the NI should be positive and have reached its peak. However, the NI (profit/loss for the year) of this entity has decreased from 2014 to 2015. An entity's income pattern can also provide evidence about the quality of income. The NI of this entity is positive but decreased from 2014 to 2015. This does not indicate a poor income quality. A further analysis indicated that profits and revenue increase but that the 3% shrinkage is due to a decrease in one segment (generics) of the entity which only presents 10% of the total revenue. When compared over four years there was an increasing trend in the net profit. Therefore, an assumption may be made that income is a reliable measure of performance. There was no erratic movement in NI.

**Step 2 Analyse cash flows from operating activities**

Similar to trends in NI, it is essential to determine whether CFO is positive, negative, growing or shrinking and whether it can support the cash flow demands. This is the most important section of the cash flow statement as CFO drives the entity and is expected to be positive. According to Figure 1, the CFO should be positive and the highest in the mature stage. The amount of CFO and the trend is also important as it is the primary cash generating activity and should contribute towards investing and financing activities.

In this analysis the CFO is positive and have increase since 2012. However, there has been a decrease in CFO from 2014 to 2015. Similar to the income flow revenue decreased during this period which may have the negative effect on CFO. Furthermore, after a further analysis it showed that interest and bank charges increased with 50% since 2014 and accounts receivables tripled. Since 2012 the cash flow before working capital almost doubled. The only item that is of concern is the changes in trade and other receivables. The changes in this item are erratic and have no increasing or decreasing trend and may contribute to the decrease in CFO from 2014. The increase in interest paid indicates the increase debt rose. The inflow from CFF more than doubled since 2014. Finally, the CFO seems to be a reliable measure of performance.

**Step 3 Compare the NI with trends in cash flow from operating activities**

Stable, positive cash flows, especially from operations, are positive for the quality of income. Both the NI and the CFO increased since 2012 to 2015 and both of the items decreased from 2014 to 2015. The analyst needs to determine if the NI or CFO is the better performance measure. The NI and CFO need to be compared to the income and cash flows in Figure 1 during the mature life cycle. In Figure 1 the CFO needs to be higher than the NI which is similar in this entity. Therefore, this comparison indicates that the entity, according to Figure 1, seems to in the mature stage and growing. The entity is not in the declining stage as the NI and CFO is positive.

A further analysis of the cash flow statement indicates that both the NI and CFO are good indicators for performance. The NI and CFO are similar to the benchmark in Figure 1 and indicate that the entity is in the mature cycle.

**Step 4 Analyse cash flows from investing activities**

According to the benchmark in Figure 1, the CFI should decrease in normal circumstances. In this entity the CFI in continuing operations is increasing which indicates growth. In the mature stage of the life cycle the CFI should be positive and investments in assets maintained rather than increased. The entity invested in assets from 2012 to 2015. Furthermore, there was a major investment in the acquisition of business undertakings in 2014. The investment almost tripled since 2013. This indicates that the entity is growing or expanding as opposed to an inflow which indicates shrinkage and selling off assets to maintain operations, as will be in the decline stage. An entity in the mature cycle is continuously faced with the choice of expanding or to exit the market. Growth in this stage is through acquisitions. Furthermore, the investment in assets is more than depreciation and amortisation which also indicates expansion and growth and not the maintenance of assets.

**Step 5 Analyse cash from financing activities**

The CFF does not compare favourably to the benchmark in Figure 1. This entity is paying off debt but there have also been major increases in long term borrowings. In 2014 the entity increased short term borrowings to supplement CFI and repayments of long-term borrowings. Therefore, in 2015 there was a major increase in long term borrowings to supplement CFO to finance CFI, and the repayment of short- and long term borrowings. This is also an indication of an entity in the mature cycle that is expanding and growing to increase its market share.

Figure 1 indicates that mature entities must retire debt. The entity is retiring debt but raising funds for acquisitions in the CFI which indicate growth. Steyn and Hamman (2008) agree that the decision to grow and expand may be costly to an entity. In this entity the CFO is sufficient to cover the CFI and CFF and supplement the expansion.

**Step 6 Significant changes in cash balance**

There were significant changes in cash balances from 2012 to 2015. The cash and cash equivalents tripled during this period. This is also an indication of an entity in the mature stage that has made the choice to expand its operations. The entity has no reason to be concerned about their liquidity position and long term solvency.

At this stage, the analyst can use ratios to determine the financial health of the entity in terms of short-term liquidity and long-term solvency. The evaluation at this point is sufficient to indicate future increases in profits and cash flows.

**8 Summaries, conclusions and recommendations**

In this study an entity in the mature stage was evaluated by means of its income and cash flows during this stage with specific income and cash flow patterns during each life cycle. This entity was compared to a benchmark (Figure 1) to evaluate and to determine

the performance of the entity. The evaluation indicated that the entity is in the mature stage but seems to be expanding, growing and increases its market share by the acquisition of business undertakings in 2014. When an entity reaches the mature stage it has the option to either remain in this stage, grow or decline and exit the market.

In this evaluation both the NI and CFO are reliable indicators of performance. Even though the NI and CFO decreased from 2014 to 2015 it has doubled since 2012. This decrease may be as a result of the additional acquisitions of business activities in 2014. Steyn and Hamman (2008) agree that the CFO must be positive while the CFI and CFF are negative. That is the case with this entity regarding the CFI. CFF is positive but only due to the short and long term borrowings in 2014 and 2015.

The CFI compares favourably to the benchmark and it also indicates a growing entity with a negative CFI and a positive CFO. When analysing the CFF a negative CFF is acceptable if the CFO is positive. This is the case in 2013 but in 2014 to 2015 the positive CFF was as a result of increases in borrowings.

An analysis of an entity in the mature cycle raises questions because the challenge in the maturity stage is preserving maturity or slowly expanding the market share while avoiding the decline stage. CFO could not finance the CFI and CFF which may indicate that the entity could not afford the growth and the entity was discontinuing operations. This analysis therefore indicates that the entity is in the mature stage and the characteristics of mature entities may apply to this entity. Another option may be to also evaluate this entity as if in the growth stage.

The economic decisions made by investors and shareholders require an evaluation of the financial statements of an entity. The cash flow from operating activities indicates the true cash-generating ability from the business activities of an entity (Moorhead, 2001). It is, therefore, evident that income and cash flows provide information and support for the usefulness of the cash flow statement for evaluating financial performance of an entity. Therefore, to get an overall view of the entity, income and cash flow patterns must be examined along with traditional ratios. Furthermore, if the analyst finds unusual items in a year, different from other years, statements or information in the financial statements need to be investigated for answers.

To conclude, the model suggested by Jooste (2011) can be applied and it will yield answers as to how to incorporate life-cycles into performance analysis using the cash flow statement. In future studies the benchmark may be change according to the economic climate. A benchmark may be developed using averages of entities in their different life cycles in an industry. This will make the benchmark more industry specific and will include averages for different economic conditions, such as whether the economy in a business slump or a growth recession.

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