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MULTI ENTRY FRAMEWORK FOR FINANCIAL AND RISK REPORTING

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² According to the resolution of Chairman of Polish Financial Supervision Authority („PFSA”) number 71/2009 as of November 15, 2009 in respect of the employee of PFSA the dealing with external entities this article has been subject to bounding recommendation of the Director of External Affairs of PFSA.

Summary

Author challenges one of the oldest accounting double bookkeeping rules, used since 1494, and proposes instead application of the quadruple accounting entry. He presents the concept of the multiply accounting entry for the risk financial statements and risk management. The development gap concept is described and introduces a simplified entry and reporting example. Model is illustrated with a number of financial-risk statements and attributes including the journal entries. The potential completion edge for users is weighted against costs and benefits.

Key words /Tags:

Audit, CRD, COREP, FINREP, IFRS, BASEL, NUK,CRD, reporting, financial accounting, double-entry, , risk management, fair value, conceptual framework, accord

JEL: M41, G32, K23

Type o research: theoretical

Introduction

A basic function of the accounting and reporting system is to provide information to settle a mutual investment. Already Cowan raised the argument of utility functionality of reporting (Cowan 1968). Historically the task was to value the contribution and commitments into a project by capital providers and stakeholders (e.g. foreign investment to acquire rare ingredients) (Petram 2011) and then to value the result and its fair allocation among the capital providers. The activity presented above is sensitive to time constraint, errors (both intentional and unintentional) and subject to some level of judgment. Therefore the important function of reporting is its credibility. The reporting should be unambiguous as well. To enhance the credibility, a system of the financial assurance has been developed. The beginning of the system is backdated to British Company Act (Anon 1856), where first instances of the audit requirements (early in form of the internal audit) has been enacted. Application of the assurance system opened a technical matter: assurance is functional unless methods and documents are deterministic. In consequence the deterministic postulate manifested itself with the historical accounting principle, where the value of assets and liabilities has been established as a past cash outflow, verifiable directly to the accounting documents like invoices, good dispatch notes etc. The usual period for reporting represents one year or twelve subsequent months. In order to perform a full scope substantive audit all accounting evidences must be traced back to records - it is possible but this is a time consuming exercise. On the other hand the financial statements users need the relevant and quick information for their decisions, therefore, by introducing the level of correctness (materiality) a timing of information could be provided.

In line with the economic development and changes in the financial environment the fundamentals for the historical values and materiality's were a little out of date. The economic value of an asset was defined as the expected present values of cash flow generated by this asset. In case of the long term assets the fragility of this definition was linked to the volatility of the discount factor. The unequivocal value of discount factor could not be stated without further assumption on the capital provider preferences like cost of capital, risk *appétit* and so on. The accounting itself by using the historical value of assets stands in contrary to economic values. In order to decrease the gap the accounting adapted firstly the link to market values by reference to the foreign exchange year end rates, than indexation for the capital gains, revaluation of the fixed assets, impairment correction and provision for liabilities and finally valuation of assets and liabilities to their fair values. Due to the increase of the judgment and underlining assumption the values reported through the profit and loss account tended to be more stochastic than deterministic. In practical terms it shifted the attention from historical to fair values accounting. The consequences were to change audit procedures from the reconciliation to the underlining documents, to judgments on the valuation assumption applied. By application IAS 39 was build a bridge between historic and fair value accounting for financial instruments and a transmission channel for the fair value volatility what further investigated as the 2008 crisis occurred by others (Barth and Landsman 2010; Bischof et al. 2010; Strampelli 2011).

The free-market societies based its early warning system for financial systems on the accounting financial reports (e.g. going concern disclosure, bankruptcy procedure) or recently the capital requirements procedures, where starting point is the financial statements. Since any changes in the reporting system transmits itself widely into the real economy processes. The above outlined trends give right to consider the alternatives in financial reporting, however before that a short review of key assumption must be outlined.

Basic characteristic of the applied financial and risk reporting system

Currently used system of financial and risk reporting is based on numbers of compromises summarized below.

Timing versus correctness (materiality)

The issue could be described as the ration of the timing of preparation and validation of the financial statements to its credibility. For audit procedures the preliminary financial statements is used, usually prepared after the year-end. The shortening of the time available between the date of preparation of the reports and the date of it's publication (including beforehand the verification) results in limitation of the scope and substantive of the procedures volatility , which in turns yield in application of the higher tolerance for errors. However there are many procedures which are not adjustable in respect of time e.g. financial statement closing process and disclosure.

Principles versus rule based system

In practise there are two basic frameworks a principle based and a rule based accounting. The first approach is based on the fair and true concept and general rules, while the rule based approach is more procedural and specific. In the principle based approach there is a significant space for interpretation while the rule based approach is very accurate. On the other hand the rule based approach tends to be large and complex, which results in spheres of contradictory regulation.

Method of valuation and ability of its verification

Valuation methods could be grouped into fair values methods – representing the value of assets in normal course of business exchange between willing not related parties. Amortized costs methods, which represent the value of the assets and liabilities under assumption on negligible credit risk exposure. The historical cost methods represent the most conservative approach, while the assets value is an historical cash outflow. The preference of the financial statement user is an equivocal, verifiable, prompt and long standing valuation method. Majority of the above mentioned attributes possess the fair value derived from the effective market. The existence of effective market is not necessary a case of small market e.g. Polish one (Dobija and Klimczak 2010). In the case of the lack the effectiveness in the market, the historical costs tends to be equivocal and verifiable however this is not a time and inflation resistant method. The alternative approach is a fair value derived from the model while input data is from the semi-efficient market. In consequence the model assumptions , distribution of input variables constitute the space for volatility of the model results. Scarifying the functionality of the results it is gained the time and environment benchmark dimension. To illustrate the case let us examine the example with using the Gordon model: a stock of carrying value of \$2000 pay off stable dividends in value of \$100, cost of equity amounts to 5% p.a., has a normal distribution and standard deviation of 1% therefore the value of stock varies with 95% likelihood within the range of \$1437 and \$3289 ($100/(5\%+1\%*1,96)$; $100/(5\%-1\%*1,96)$).

In case the above mentioned stock would be the only assets on the balance sheet the entity could report either loss of \$563 or gain of \$1238 with equal probability.

Communication credibility against the competition edge

If, for a given entity, all economic transaction would be disclosed than the investor would possess all information to take a investment decision. Such a model would however impact the ability of the entity to create a competition edge. Another aspect of the model would be quantity of information to be processed and aggregated. Thus the reporting should be disaggregated enough to provide manageable information and aggregated to such a level not to jeopardize the entity commercial position.

Taking into account the above stated boundaries , is it possible to create an alternative reporting framework to limit the compromise, which must be made.

Model

Problem definition

Development of the reporting system started from the single reporting sheet of balance and profit and loss statements towards the set of financial reporting including accounting policies, balance sheet, cash flow, capital movement, notes. As the result of that the size of the financial statements itself reached a significant level (e.g. consolidated financial statements of PZU group consist of 115 pages, as of December 31, 2010). Overformalization and complexity of financial statements compromised a communication and credibility postulate. In order to safeguard standards for medium and small entities the limit for auditing requirements has been established together with a dedicated standards for SME's. Current pressure to shorten the time available for financial statements closure process results in increase of the detection risk.

The risk management practice requires more dedicated standards, therefore, based on the Basel Accords the European Commission recommends with CEBS (now EBA – European Banking Authority) a set of the supervisory reporting standards FINREP and COREP. Both standards are released with non binding recommendation for application of xml or XBRL technical standards. Those trends require however skilled staff and significant investments.

Systemic postulate

The research problem is to construct the reporting system, which is used to settle the stakeholders, is credible, and verifiable, short, compact understandable, quick and economical, describes both historical aspect of value and addresses the risk profile of an entity. (the “systematic postulate”).

Currently used system does not necessary meet all characteristics of systematic postulate.

Today the key concept in accounting is double-entry, a system which represents all business transitions in the form of transaction date, value, change in assets, change in passive (dr., cr.). Double entry has been described already in 1494 (Pacioli and Paganini 1974). This atomic entry mechanism gives controls over the completeness of records, values and reacts with the precision of a single business transaction, which builds the fundament for further aggregation. The generic version of double-entry allows for a comprehensive aggregation within balance sheet, profit and loss account etc., although it allows to enhance system to multilateral duplication of entries and its aggregation into the different grouping formats e.g. profit and loss by nature and by calculation (application of #490 account). This solution is based on the single value of the transaction. Conceptually the application of different grouping is just an extension of the double-entry mechanism, thus it is obtained a mechanisms of multi-main ledger system.

An attempt for a triple accounting has been presented by Ijiri (Ijiri 1986), who added up the momentum aspect to the double-entry. The proposal was criticized (Fraser 1993). Lack of utility and practical application has been raised. Another attempt to enhance Pacioli proposal was a quadruple - entry applied for the national accounts (Postner 1988). This concept linked the micro and macro accounting for national account, Postner's proposal turn out to be a not necessary practical one.

Solution proposal

Let us enhance a classical double-entry by additional value so called risk value (RW)³. Doing so a an additional dimension of reporting is obtained. Each transaction would be recorded in addition to traditional double-entry with value end risk entries risk debit and risk credit (RDr., RCr.).Thus it is obtained not a double-entry but a quattro-entry (this is not a multiplication of the double-entry because the additional value is attached to the record). As a result of this, each business transaction is described by two values, one based on the classical accounting rules, second on the value of risk. Used are at least four accounts, two of them being the accounting records, two of them being the risk accounts. By creation an integrated balance sheet and profit and loss and risk profile, it is possible to merge the reporting with classical scalar of values and risk. This single approach utilizes the basic characteristic of accounting approach this is verifiability. It opens the possibility to apply historic accounting to the financial reporting and fair values to the risk measurements. This in turn allows to separate the auditing procedures both for finance and risk. Therefore for the system with higher quality reporting both auditing system could be applied while for SMS's companies the first only (any other criteria like the dilution of shareholdings, public companies etc. could be applied). For risk valuation the existing already procedures could be adapted like Basel accord implemented with 48 and 49/2006 directive for EU or Solvency II for insurances with adjustment while the risk value of single transaction would be an incremental part of risk portfolio. By separating those two systems of reporting it yields more coherent with the systemic postulate in terms of financial reporting equivocality.

³Without taking into account any given value.

An application example

Currently applied reporting techniques could be outlined as follows:

Table 1 Extract from financial statement – standard used

Balance sheet and profit and loss statement for the period ended 31 December 20X2

			Note (extract)
Asset	(Notes)	EUR	
A. Fixed assets		100	(1)
B. Current assets	(1)	200	Current assets include the securitized receivables of 50 EUR valued at cost
Total assets		300	
Liabilities and equities			
A. Capital		50	(2)
B. Liabilities and provisions	(2)	250	Provision for jubilee and retirement payments in amount on 180 EUR is discounted with technical rate at 3% p.a.
Total liabilities and equities		300	
Revenues		500	
Costs		480	
Profit (loss) net		20	

By enhancing the above shown financial statements with the risk dimension it is obtained the following reporting:

Table 2 Extract from financial statement – standard used and risk entry.

Balance sheet and profit and loss statement for the period ended 31 December 20X2

Asset	Financial notes	EUR	<i>Risk</i> <i>EUR</i>	Risk notes	
A. Fixed assets		100	30		(1)
B. Current assets	(1)	200	500	(a)	(1)
Total assets		300	530		Current assets include the securitized receivables of 50 EUR valued at cost
Liabilities and equities					
A. Capital		50	330		(a)
B. Liabilities and provisions	(2)	250	200	(b)	(a)
Total liabilities and equities		300	530		Credit risk of securitized assets valued at nominal value of Receivables
Revenues		500	200		(2)
Costs		480	280		Provision for jubilee and retirement payments in amount on 180 EUR is discounted
Profit (loss) net		20	-80		(b)
					Value of receivables before discounting

In comparison with double-entry, the quattro-entry allows for presentation both the value of the item and its value of risk. Because the Quattro-entry inherits the vertical and horizontal decomposition of accounts e.g. revenue risk position of profit and loss account can be disclosed in various risk. Revenue of 500 EUR (financial value); while 200 EUR (risk value) allocated to 120 EUR – market risk, 50 EUR operational risk, 20 EUR credit risk 10 EUR – other non measurable risks.

Another consequence of application of the quattro-entry is the ability to discriminate the financial statements against risk profile. It allows as well to disclose the profile of the off-balance sheet risk exposure. An illustration of this attribute is shown in table 3.

Table 3 Extract from financial statement – standard used and risk entry; discrimination ability.

Balance sheet and profit and loss statement for the period ended 31 December 20X2

	Entity A		Entity B	
	EUR	<i>Risk</i> EUR	EUR	<i>Risk</i> EUR
Asset				
A. Fixed assets	100	30	100	30
B. Current assets	200	500	200	30
Total assets	300	530	300	60
Liabilities and equities				
A. Capital		330	50	0
B. Liabilities and provisions	250	200	250	60
Total liabilities and equities	300	530	300	60
Revenues	500	200	500	10
Costs	480	280	480	10
Profit (loss) net	20	-80	20	0

The entity A indicates in general higher risk accumulation position than the entity B. Both entities disclosed the same financial position and different risk structure. A similar characteristic can be observed while making a time series analysis.

Table 4 Extract from financial statement – standard used and risk entry; discrimination ability for time series analysis

Balance sheet and profit and loss statement for the period ended 31 December 20X2, X1, X0

	20X2		20X1		20X0	
	EUR	<i>Risk</i> EUR	EUR	<i>Risk</i> EUR	EUR	<i>Risk</i> EUR
Asset						
A. Fixed assets	100	30	100	30	100	30
B. Current assets	200	500	200	400	200	30
Total assets	300	530	300	430	300	60
Liabilities and equities						
A. Capital	50	330	50	400	50	0
B. Liabilities and provisions	250	200	250	30	250	60
Total liabilities and equities	300	530	300	430	300	60
Revenues	500	200	500	130	500	10
Costs	480	280	480	160	480	10
Profit (loss) net	20	-80	20	-30	20	0

While the same results and financial position are observed, the risk profiles indicates a strong fluctuation on the entity level.

Technical matters for quattro-entries

Application of quattro-entry encompasses some practical assumptions regarding the risk calculation. In general the risk bearing part of balance sheet is the assets position and off balances sheet guaranties⁴ and in some cases liabilities (actuarial and operational risk).

Thus the main reason for increase or decrease the value of risk (or changes in risk profile) is due to the assets composition. Each asset entry could be presented in the form of accounting value and changes in risk value.

In table 5 is show a typical set of the financial and corresponding risk entries.

Table 5 Journal entries extract

No	Description	Value	Dr.	Cr.	Risk value	RDr	RCr
1	Payment of capital	100	Bank	Capital	20	Bank	Increase.* risk
2	Newspaper purchase	5	Cost	Bank	1	Risk decrease	Bank
3	A transfer between bank accounts to the account with a 0% risk charge.	95	Bank	Bank	a) 19	Change of risk.**	Bank
3b					b) 0	Bank	risk increase.
4	Option issue	1	Instruments for trade	Financial incomes	a) 0,1	Instruments for trade	risk increase.

⁴ Under assumption on the valuation of equity in historic values, and liabilities at cost or amortized costs.

4a	PB notional value of option	100		Off balance sheet	b) 0	Off-balance sheet	risk increase.
5a	Purchase of the instruments for trading	20	Instruments for trade	Bank	0	Change of risk.**	Bank
5b					35	Instruments for trade	risk increase.
6	Issue of the zero coupon bonds by the entity	200	Receivables	Financial liabilities	60	Receivables	risk increase.
7	The closure of the general a and closing entry for the profit and loss account and risk statement.						

*Risk increase **Risk decrease (results accounts)

The financial entries are valued in accordance with generally accepted standard (e.g. IFRS, US GAAP, PL GAAP etc.). The risk entry value is valued in accordance with risk standard e.g. Basel or it's implementation⁵. For the example purposes the simplified methods were used, there is no split between credit, market or operational risk.

After the processing all entries it is possible to obtain the following combined financial and risk sheet (comparatives balances has been omitted for simplification purposes):

⁵ But the risk measured on the portfolios are recalculated for the trans action purposes as the incremental value.

Table 6 Balance sheet, profit and loss and risk profile statement base on the journal entries.

Financial balance sheet		Risk statement		Profit and loss account	
Off balance sheet		Off balance sheet		Revenues	1
Option	100	Option	0	Cost	5
Asset		Asset			
Bank	75	Bank	0		
Instruments for sales	21	Instruments for sales	35,1		
Receivables	200	Receivables	60		
Total	296	Total	95,1		
Equity		Risk ⁶			
Basic capital	100	Increase	115,1		
Results	(4)	Decrease	(20)		
Liabilities	200				
Total	296	Totsl	95,1	Result	(4)

As the results of the above procedures a comprehensive financial and risk statement is built. The off balance sheet positions are equal both for risk and financial statements. The risk statement could be presented disaggregated between various types of risk like market, credit, operational. The risk profit and loss statement can be aggregated against financial position of profit and loss or against types of risks. The reconciliation of the financial equity to the supervisory capital might give the right to present capital requirement coverage.

⁶ Position possible to disclose in risk profit and loss statement or as the extension of the financial presentation for basic types of risk.

Proposal discussion

The model allows to split information between the financial and risk data, what in consequence influences speed and correctness of information flow. The application of the dual system for financial and risk reporting brings higher precision to the financial part of reporting while on the other hand the valuation risk stays untouched with risk reporting.

The potential benefits of Quattro-entry is outweighed by universal application of double entry accounting for the tax settlements, international standards, Basel standard measurements etc. The potential benefits for dual reporting is linked to the uncertainty generated by application both judgmental entries (fair values without efficient market references) and verification effort and timing. The change in financial reporting of this magnitude , unlikely to happen, however a attempt for managerial reporting seems to be more likely. Another set of potential issues arises from the technical matters for Quattro-entry, the journal entry system needs additional intellectual investments as the number of issues would only arise under practical life application of it. Until this the moment, the untypical entries have not been challenged. The basic model does not refer to the hard-quantifiable risk like reputation, legal and other similar risks. As the dual system is an external system to the entity, therefore the intra-group risk generated by the structure (Staszkievicz 2011) might be difficult to reconcile.

The dual system of disclosure inherits material attributes of the double-entries such as its variability, ability to reconcile between financial and risk reporting . It is comprehensive, compact in terms of presentation, but it requires additional time and workload as each entry needs not double but quattro entry. Currently applied methods for risk calculation are often based on calculations such as the average results for the operation risk, portfolio of instruments or policies for market and actuarial risk respectively. This and many other facts makes the model rather theoretical than practical.

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Streszczenie:

Zaproponowano koncepcje rozszerzenia zapisu podwójnego do zapisu poczwórnego, jako mechanizmu pozwalającego na integrację sprawozdawczości finansowej i ostrożnościowej. Wskazano na zalety i wady zastosowania mechanizmu dualnej prezentacji wartości ryzyka i wartości finansowej w sprawozdaniach zintegrowanych. Zaprezentowane koncepcje luki postulatu systemowego. Omówiono bieżące tendencje w sprawozdawczości finansowej. Artykuł ilustruje uproszczony przykład zastosowania zapisów dla celów sprawozdawczych.