

Reconstructing the Accounting Measurement Logic for Data Assets: A Dual Perspective on IAS 36 and IFRS 15

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Abstract: The incorporation of data resources into the structure of corporate assets puts in question the financial accounting frame. In contrast to the empirical studies, this normative paper re-builds the logic of the measurement for the data asset from the point of view of the balance sheet (IAS 36) and income statement (IFRS 15). We show that the non-rivalrous, iterative nature of the data, voids the traditional discounted cash flow (DCF) model for the test of the impairment. At the same time the continuous service contract for the data creates an insurmountable ambiguity for the performance obligation and the transfer of control. The theoretical deduction of this study is grounded in the information asymmetry and not in the traditional utility functions. This shows how the elusiveness of the regulation is increasing the space of the professional judgment of the management which allows the opportunistic earnings management. This manipulation directly drives the inflation of the absolute discretionary accruals (|DA|). In this framework |DA| is used exclusively as the definitive dependent variable representing the quality of the accounting information, that captures the financial distortion in a different way from the independent variable of the disclosure of the data asset.

Keywords: data assets; impairment test; revenue recognition; information asymmetry; absolute discretionary accruals

1. Introduction

With the vigorous development of the digital economy, data has become a key factor of production driving enterprise value creation. According to data released by the China Academy of Information and Communications Technology, China's digital economy surged from 11 trillion yuan in 2012 to over 50 trillion yuan in 2023, accounting for more than 40% of the country's GDP. The contemporary global economy is in a process of fast move from the industrial paradigm where the production is based on material physical stocks to the digital paradigm where the production is based on data resources. Algorithms, computing power and big data are the current engine of the value creation of the companies. Contrarily to any physical inventory, data is a non material, non exhaustible factor of production, a factor of production with massive positive externalities and with complex network effects.

This paper deals with the reconstruction of the accounting measurement logic for the data assets from the delicate point of view of a double regulatory point of view: the balance sheet constraint under IAS 36 (Impairment of Assets) and the income statement difficulties under IFRS 15 (Revenue from Contracts with Customers). The classical present value of expected future cash flows model (DCF) breaks down when we do the impairment test, because the data asset will be subject to risks of non linear obsolescence. At the same time, the modern way of commercialising the continuous data is difficult to the framework IFRS 15 for the performance obligations and the control transfer. These shortages are the institutional holes that the management use for the earnings management and in a systematic way the degradation of the capital market transparency.

The study is based on the following three propositions: (1) the DCF model is a priori invalid for the impairment of data asset; (2) the continuous data service makes a cross-difficult to transfer control; (3) the standard elasticity pushes the inflation of absolute discretionary accruals (|DA|).

2. Institutional background and global regulatory evolution

The International Accounting Standards Board (IASB) has kept a conservative posture about internally generated intangible assets. IAS 38 was thought for the traditional IP where the legal limits are strict and the future economic benefits can be assumed. Data assets are very replicable and very contextual, they do not respect these assumption. Because of the IASB reluctance to create a specific standard for digital resource, there is a deep regulatory gap.

The absence of such a unifying framework has led to the cross-jurisdictional divergence : the national tax authorities move more and more towards the real time transparency in order to capture the digital value created independently from the financial accounting[1]. The friction of the modern, aggressive tax reporting requirement on the conservative financial

accounting standards makes the environment that is more prone to a regulatory arbitrage the management can operate to have a tax burden as small as possible and publicly reported earnings as large as possible.

3. Conceptual framework: Deconstructing data assets from a normative accounting perspective

One of the rigorous theoretical boundary that must distinguish data resources, data products, and data assets is the following: a data asset is an accounting construct which has rigorous recognition criteria: it is controlled by the enterprise as a result of past events and it is probable that it will generate an inflow of future economic benefits[2].

While, for physical assets, we have rivalry, for data assets we have non-rivalry, moreover it is exceptionally costly in term of technological and legal to establish an absolute exclusion. Thus, the usual criterions of "control", which is an ex-ante demand the power of the entity to unilaterally restrict the others access, is questioned. Moreover, the fact that the mining of data is quite technical implies a very severe information asymmetry between the management and the others in the outside. Management has indeed a tremendous informational advantage regarding the risks of obsolescence, the enforceability of the contract, etc. which is a good ground for one opportunistic reporting[3].

4. Asset-side friction: The capitalization dilemma and the failure of IAS 36 impairment testing

Transforming raw data resources into verifiable data assets, enterprises are pushed to deal with strict criteria. But it is very difficult to delineate the research phase (which has to be expensed) from the development phase (which is allowed to be capitalized) because of the continuous and agile way in which we are refactoring the algorithms. The subjectivity here gives a management power to make it a mechanism of selective income smoothing of the capitalization threshold[4].

For the capitalized data assets, the DCF model which is required to be used by IAS 36 is subject to risks of being theoretically invalid. Firstly, it is difficult to identify the independent CGUs, since the data asset is all synergistic. If we define the CGUs to be too big, it is easy to hide the impairment of some specific obsolete data assets. Secondly, the parameters in the DCF method are very speculative. The projecting of the sustainable growth rate over multi years horizon is totally based on the subjective strategic forecast of the management. Thus the impairment test is a very flexible tool. For the case that the data privacy legislation come suddenly, the management can play with the DCF model by lower the discount rate in order not to have a big impairment loss.

5. Income statement friction: Deconstructing performance obligations and control transfer under IFRS 15

Transaction models for data businesses are of course ranging from static data packages to continuous API calls and customized joint modeling services. The following extreme heterogeneity of data business makes the IFRS 15 five-step revenue recognition framework question.

The identification of distinct performance obligations is controversial. It is often the case that the provider is in a position to deliver the initial algorithmic access while taking on in the law, at least in some jurisdictions, the responsibility of continuously desensitising the data and maintaining the security of the data. If separated, this creates artificial allocations, which do not reflect the economic reality[5]. Moreover, the separation of legal ownership and the continuous usage rights complicate the transfer of control. In a model of a continuous subscription of an API, the decision between a "point in time" or "over time" transfer, creates large operational dilemmas. Finally, the constraining of the estimates of the variable consideration on the volume of the data calls is of a mathematical difficulty as the uncertainty is extreme, and it would allow the management to delay or accelerate the recognition of the revenue.

6. Economic consequences: Standard elasticity, earnings management, and accounting information quality

The dual ambiguities across IAS 36 and IFRS 15, therefore, extend the space for management's professional judgment to an unprecedented degree. Indeed, motivated by information asymmetry, management makes use of this space by capitalising aggressively data development costs and manipulating the allocation of the transaction price to shift the revenue across the reporting periods.

The most severe consequence is that of the systemic degradation of accounting transparency. Absolute discretionary

accruals (|DA|) is the unique dependent variable that represents (the quality of) accounting information, and it captures the whole financial distortion due to the opportunistic exploitation of the standard loopholes by management. The inflation of |DA| works completely in independent from the corporate act of information disclosure of data asset.

7. Reconstructing the framework: Policy recommendations and disclosure mechanisms

The standard-setters have to substitute or strongly supplement with dynamically and activity-based impairment triggerings of the value of the asset, for example, a drastic decline in the number of API calls, to constrain the manipulation of the value of the asset[6]. For the issue of revenue recognition, the IASB should define very tough typologies for the data service contracts, for example, between a transfer of values that can be considered as static and a form of continuous transfer of access. Finally, the regulators have to enforce a full multi-dimensional off-balance-sheet disclosure framework including the quantitative disclosure of capitalized versus expensed development costs, of the applied discount rate and of the volatility of the number of calls of APIs[7].

8. Conclusion

In recent years, the importance of data assets in corporate operations has become increasingly prominent[8]. The inclusion of data resources as part of corporate assets is a deep challenge to the accounting conceptual framework of the traditional idea of accounting. The fact that the data is non rivalrous and networked makes that the traditional models of impairment testing are not valid and the heterogeneity of the data service contract spreads the demarcation of the performance obligations and of the transfer of the control. The elasticity of the regulation is a system mechanism of earnings management, which is a degradation of accounting information quality. It needs a reconstruction of the logic of the impairment and the revenue logic for the digital reality, and strong off-balance-sheet disclosure requirements.

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