

VALUING THE IMPAIRMENT REVERSE LOSS EFFECT ON FIRM'S DEBT FINANCING

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ABSTRACT

One of the most important discussions in economic research is about how to provide the right incentives to individuals. Usually when a regulator defines a rule, she has to deal with some trade-off. This paper proposes to study a specific trade-off that emerges with the possibility of reverse in the impairment loss. It has been showed that at first, the firm is better off in a conditionally conservative accounting system (Göx e Wagenhofer, 2009), but, once an impairment is made, should the firm be allow to reverse losses in case of changes in the expectations? Empirical papers have pointed evidences for both sides, but not much theoretical papers have been discussed yet. This paper analyses how the lender value the asset over two different impairment rules and identify where the firm can maximize the funding capability. That guarantees the maximization of the firm value. We found that when the manager is allowed to reverse impairment loss she is more willing of making impairment in the first place. That will reduce the information asymmetry and create an environment where the lender are more comfortable and sees a bigger expected value in the asset that is been used as collateral for funding.

Key-words: impairment loss reversal; trade-off; information asymmetry; funding.

Área Temática do evento: Mercados Financeiro, de Crédito e de Capitais (MFC).

1 INTRODUCTION

When you think about giving the manager the opportunity to re-evaluate the company's assets, it always rises up a very important question: should the manager have this kind of discretion? When impairment loss is recognized, there is a direct effect in the earnings and profit reserves. If the reversal is possible, the manager guarantee a tool to make the earnings go up and down artificially and it can be a big issue. The possibility of reverse losses may give the opportunity of earnings management, but also reduces the information asymmetry. The effect of a well-made regulation is a guarantee of more efficient market, what maximizes the welfare of the society.

Empirical evidence shows that after the adoption of IAS 36, firms made used of impairment to manage the earnings and this behavior could mitigated with better corporate governance (Duh et al, 2009). It has been shown in Japan that the use of Appraisers restricts manager's discretionary power and generates more reliability in the financial report (Yamamoto, 2008). There is also evidence that in 2008-2009 crisis, the fair value rules and the

impairment reversal possibility generated benefits of transparency for investors (Bowen, 2014). In contrast, even with the non-possibility of reversal, write-offs have been made with the “big-baths” intuit after SFAS No 121. This behavior reflects opportunism on reports done by managers (Riedl, 2004). Thus, there is a big trade-off in the impairment rule establishment. The regulator faces three possible scenarios, should the rules be focus in avoiding earnings management in any cost, should be worried about enable the manager to provide the best information or should try to mix both and to try to monitor the manager behavior?

As this paper compares two different rules of impairment, it disregards the particularities of each regulation with no loss of generality. Although we are looking for a specific accounting rule, we are interested in how the possibility of a loss reversal can impact the funding capability. This is a major question since it can be seen as a proxy for funding constraint and directs the level of profitability that is possible in the economy. The consequence of this analysis is to bring more evidence for the debate of how each accounting standard makes a better job in impairment rules. Exists a strong correlation between regulatory quality and economic performance (Jalilian et al, 2007) and a good and reliable financial intermediary is important to reduce the financing constraint (Levine, 2005). These can be achieved with better incentives to make the manager provide good and reliable information.

However, a big player didn't made that move yet. The United States puts itself in a position of evaluate the pros and cons of a change in the standards. Evidences suggest that the differences about these two standards are narrowing (Street et al, 2000). For the analysis methodology we used a binomial model, which evaluates the expected value of an asset offered as loan collateral to finance a profitable and risky project, where the nature gives good news with probability p and bad news with probability $1-p$.

After sees the news, the manager chooses to use it or not. If the news is good, she can announce it, but the accounting standards don't allow to disclosure a value bigger than the historical, except in fair value accounting, but we are disregarding it in a matter of simplicity. If she sees bad news, she will make a choice: use the news and make asset impairment or ignore the news and disclosure the historical value. If she chooses the second option, the lender will know that something happened but she didn't report it. The lender knows that the news (good or bad) have impact in the asset value, but can't quite see the exactly amount. It's an asymmetric information context.

Therefore, she estimates an impact parameter that will shift the asset value according to the kind of news. First, we considered that the lender understands that the news, good or bad, have the same impact capability. Second, we bring the hypothesis that the manager is not completely reliable and tends to overvalue good news and undervalue bad news. Thus, the lender tries to adjust the manager's reports and estimates two different parameters, overvaluing the announced bad news and undervaluing good ones. We found that if the reversal is a possibility, there is a greater probability for the manager recognizes impairment lost, which triggers a greater expected value of the asset used as collateral. With the expanded capability and possibilities of funding profitable projects, is ensured greater returns and maximized firm value.

This paper continues with the following structure: section 2 revises the impairment literature; section 3 discusses the impairment rule; section 4 presents the model; section 5 presents empirical applications and section 6 concludes the discussion.

2 LITERATURE REVIEW

With the hypothesis that the restructuring of the financial reporting is important, based on a creditors' demand for more security for investment (Ball et al, 2008), here is assumed that the most advantageous accounting standard for a firm is the one that guarantees most expected value for the asset used as collateral to a loan. Thus, it is possible to implement risky projects

in moments that the firm is not able to finance it alone (Göx e Wagenhofer, 2009). The reason is the understanding that if an environment with more funding possibilities is created, that is why external lenders are more comfortable in investing their money as they have greater confidence in more reliable and transparent numbers presented by the accounting standards.

The importance of accounting standards is perceived on the possibility of making a better regulation that will create a good environment for investment (Levitt, 1998). With the standardization of numbers in the balance sheet, it is created a tripod that sustains a context of generating more investments and better decision making. In this terms, better governance (Voon, 2001), greater reliability and relevance (Kadous et al, 2012), guarantees, to the external agents, the information they need to make better investment decisions. With the universalization of accounting principles, is plausible to do better comparisons between similar companies and evaluate their financial health. The development of accounting standards took form in a way that the organizations take themselves along the way of clarity when make the decision of report information to external agents. This procedure has great importance to give safety for investors and for good management of the resources. Such guideline come to make unlikely the observers disorientation and deceives them with irrelevant data.

A restlessness that always exists when you talk about change in the values of assets is the concern of manipulation of numbers and it is no different with impairment. Empirical evidence indicates that write-offs have little correlation with economic factors and great association with big baths (Riedl, 2004).

The accounting conservatism reduces the interest rate charged by the lender (Zhang, 2008) and reduces the possibility of convenient discretionary decisions for the manager. An important fact is that the permission of reversal increases significantly the realizations of impairments, which wouldn't be made to reach the targets (Trottier, 2013). Empirical evidences in Thailand showed that managers recognize impairment loss to smooth the earnings (Peetathawatchai and Acaranupong, 2012). In Taiwan, evidences suggest that firms that re-evaluate more often their assets, make more reversals and reach their goals in the next periods, which is a consistent behavior with the cookie jar (Duh et al, 2009).

Allowing reversal of impairment loss can open more room for earnings management and must be careful to prevent the practice of malicious managers. In parallel, making a wisely reversal generates a good signalization for the market. Evidence of the United Kingdom suggests that upward revaluations indicates good financial health and are correlated with good performance in the future (Aboody et al, 1999).

An empirical analysis from China points out that rigorous monitoring mechanism reduces the capability of discretionary manipulation (Reidl, 2009). Corporate governance should assume a role of control and work to mitigate the agency problem (Duh et al, 2009) and should reach to prevent the asset in question from being presented with a value not incommensurate with the reality and give information with little transparency, leaving aside relevant facts for the external agent to make his decision. The regulation of long-lived assets impairment comes to put an end in the end in the controversial write-offs that was made indiscriminately in a matter of judgment (Razaee et al, 1996).

The government of China created a mixed legislation, CAS No 8, which allows reversal on short-term assets and prohibit it for long-lived assets. In the transition period, there were less impairments and more reversals to achieve profit targets (Zhang et al, 2010). After the law comes into force, there were evidence that firms reduced the number of write-downs they used to do and increased the number of reversals, but none of this practice was motivated by earnings management (Zhou and Habib, 2013). Also in China, were found evidences that reversal can lose reliability when it is done just to meet the legislation (Chen et al, 2009).

Both conducts for realization of asset re-evaluation has some particularities that will be discussed later in this paper, but one characteristic as strong as impairment loss reversal can

modify significantly the decision-making and the manager conduct. The literature still did not point out which standard would be better, existing evidences that support both sides. The debate still needs more information and arguments about the consequences that follow the decision for one standard or another. That is exactly how this paper contributes. The main result is that if the manager is allow to reverse impairment losses, she is more willing of telling the truth about bad news events, contributing with the accounting standards literature. Moreover, the lender has more information that is reliable, looks the collateral with a greater expected value, and agrees in financing more projects, contributing with the corporate finance and debt structure literature. These are important results and will help the regulator to make the best decision in deed.

3 IMPAIRMENT RULES

Impairment simply means a reduction of recoverable assets value. The rule was created to guarantee that the asset is not been recognized with an overestimated value, inconsistent with what can really give of return for the firm or the lender, if used as collateral.

With different natures and characteristics, there are specific rules for impairment of intangibles, goodwill or long-lived assets. In this paper, as we are analyzing the capability of funding, it is focused on the impairment rule for long-lived assets.

Therefore, every firm has to do the revaluation every time she identify signals of relevant change in the context she is inserted. Some external elements are strong indicatives that the revaluation should be done. They are structural or tendency changes in the economy, in the sector that the firm is part or macroeconomic and regional factors. There are also internal indicators that should be taken under consideration, physical damage or obsolescence also provides evidences of the need of revaluation the asset. When the impairment is done, these revaluations have a downward movement, but some accounting standards allow impairments loss reversal to be done. Once the firm is reporting the financials she always should make good specifications of all revaluations that were done in that period. That is important to give more transparency and clarity for the external agent. Thus, gives her more accurate information to make the valuation of the firm or the asset.

It has to be done a periodic evaluation of the life time of the asset and its residuals values. The productive time impacts directly on the asset depreciation, which is an important matter when we will discuss the reversal of impairment loss. The residual value impacts on the impairment realization need and it is object of more immediate analyzes. After the revaluations are done, in case there is some evidence that the historical value of the asset is bigger than the recoverable value, it should be conduct an impairment test, that will determine the effective realization or not of impairment.

To do the asset exam, it has to be identified the assets that could generate return on operations in the future. The test is the verification of the expected cash flows (some standards indicate that the cash flow should be discounted and in others, they shouldn't) or if the sales value (the bigger between the two) is consistent with the reported value. If not, the value that has been reported exceeds its fair value. For the accounting conservatism, it should be recognized the smaller value between then to avoid possible problems of analysis. Some steps should be followed the eventual change of the asset value.

At this point, it shows up the first difference between the standards: how to conduct the test. Since this is not part of our discussion, we are not going deeper in this subject (IASB 31, 2004 & FASB 144, 2001). This paper approaches a specific impairment rule the impact, the capability of reversal or not. They both have some resemblance and differences that we will discuss later.

Afterward the impairment, the focus of analyzes emerges. When you are doing the periodic evaluation, the results can indicate an asset valorization. In some standards, the firm is

allowed to reverse the loss until the historical cost depreciated (IASB 31, 2004). For instances, in IFRS, in the end of the fiscal year it should be done a verification whether exists any evidences about old losses reduction or elimination.

In case of findings, the reversal should be made direct in the results, with the exception of assets that have the clerk value revaluated. Other standards don't give the opportunity of going back. For example, in US-GAPP after the impairment happened, nothing can be done in case of good news. Thus, the recommendation is a greater conservatism to avoid future problems (FASB 144, 2001).

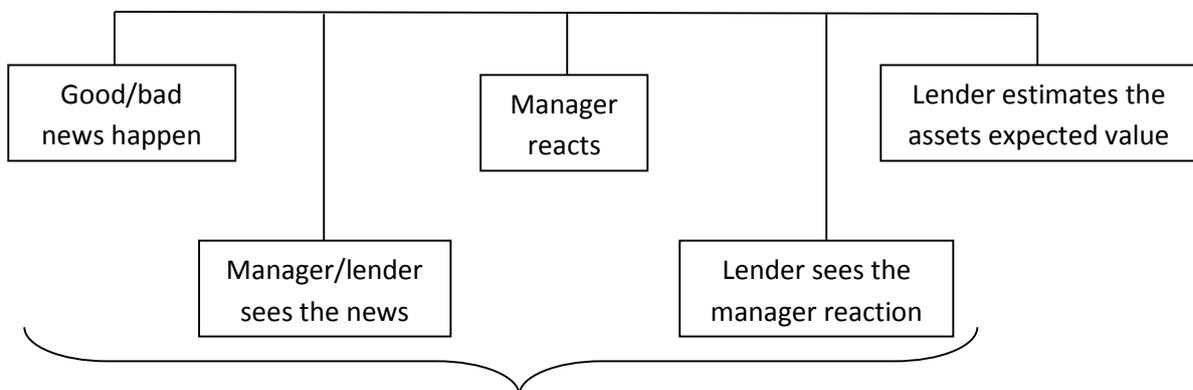
4 THE MODEL

We use a two period model and before it is introduced, considerations are in order for clarification of some points. We considered that the value of the firm is its capacity of generate profit and it is provided by the capacity of implementing projects with $NPV > 0$. To be able to implement such projects, the firm's need is financing from external agents and in counterpart, offers assets as collateral. Hence, to maximize firm's value it's necessary to implement as much as projects that she can. For that, the assets available for collateral should appear for the external agent as valuable as possible. Also, the expected value of the assets in the viewpoint of the lender is a function of the real value of the assets, of the events that occurs in the economy (good or bad) and the firm's credibility when the report is disclosed.

Consider an economy with two representative agents: a firm that needs financing, and an external agent that can finance the firm. We used a decision tree that represents first the events of the economy, which starts with nature playing that the news is good with a probability p and bad with probability $1-p$. In case of bad news, the manager of the firm faces a decision point. With probability i , she uses the bad news, and reports the real value of the assets and with probability $1-i$, she doesn't. In case of good news, the firm reports the true. In the appendix is represented one decision tree for each model.

The sequence of events repeats until the point that the firm asks the lender for funding. She sees the history of news and the manager reactions, but can't be sure about the real influence of the news in the assets or about the honesty of the manager. So, after analyzing the history of the manager responses to news, the lender creates a conviction about these uncertainties and then estimates the assets expected value. We present this process in two ways: first, she overvalues the discount factor and then she undervalue good news and overvalue bad news, because the manager has the incentive to skew in its own favor. To be clearer, a timeline is presented below.

Figure 1: chronology of events



This sequence is repeated until the firm seeks financing for funding

The intuition is that the firm needs to create credibility so the expected value of the asset is not much penalized by the uncertainty. With that in mind, the firm will choose to do impairment or not, willing to maximize the expected value of the assets that will be used as collateral for funding and be able to schedule projects that the investment necessary is greater than available cash. For analysis motive, this paper is going to adopt a sequence of two period's models starting in the simplest, with rational expectations, to the most complex.

The model assumes some hypotheses that will give directions about the analysis. First, the real impact of the news is symmetric for good and bad and is weighing A , the original value of the asset, in a discount factor γ . We consider $1 > \gamma > 0$ as the news impact. Second, if the firm happens to receive a bad news and decides to re-evaluate the assets, she wills disclosure the real value, accumulated with all history that the assets has.

The regulation demands this procedure and the founder has no reason to doubt the reported value. Third, when the external agent believes that the manager reaction is biased, she infers the impact two discount factors. This hypothesis will be discussed further ahead when we present the second model, where this hypothesis is valid.¹ It's also known that the manager chooses to do an impairment or not with the intention that the lender see the asset with the according to his willing of maximize firm value. As she doesn't have any control in the lender willing of funding, she's tries to interfere in the evaluation of the assets that are available for collateral. Then, her variable of choice is "i".

With all these in mind, there are two different possible scenarios. Depending on the accounting standard that the firm is in, there is a different context in the impairment regulation, and the manager that chose to make a downward revaluation may or may not reverse the impairment if he receives good news after.

For simplicity depreciation e costs of evaluation will be disregarded and, when it happens, there is a full reversal of losses.

4.1. Asymmetry Information

At this point, it's introduced the information asymmetry, and the lender knows that the value of the assets is not the same value disclosed by the firm. Therefore, it looks the report and the manager may evaluate the assets as function of the original value. It will be considered two model variations.

First, the external agent sees the firm's report and responds. The discount factor has the same magnitude, for good and bad news. He can't see a difference between the news impacts but knows something happens. As the manager is cheap talker and trying to reduce her risk exposition she overvalues the discount factor and estimates γ^* , where $\gamma^* = \eta\gamma$, with $1 < \eta$.

Therefore, it can be seem the expected value of the assets in each possible scenario. Table 1 presents these results for the two period models. For instance, if two good news in a row, the expected value of the asset is A/γ^{*2} , associated with the probability p^2 . If we look for two bad news in a roll, probability $(1 - p)^2$, there is a chance i^2 for the manager to choose to make an impairment in both cases, the asset is evaluated in $\gamma^2 A$. The tree of decisions for each model is presented in appendix.

The problem that the manager faces is making impairment or not, with the aim to maximize the value of the asset that she wants to use as collateral to be able to guarantee funding. In this context, we are looking to the problem, $\max_i E[A]$

¹ For simplicity, this paper ignores the matter of differences in impairment test and considers that if the news is bad, the impairment could be done and any kind of regulation has the same rules for the test.

Table 1: expected value of the assets for each possible scenario of sequence of news

				Expected value of assets		
Sequence of news				Non-Reversal	Reversal	
Good	---	Good	---	A/γ^{*2}	A/γ^{*2}	
Good	---	Bad	---	A	A	
		Good	---	$\gamma A/\gamma^*$	A	
	Impairment		Impairment	$\gamma^2 A$	$\gamma^2 A$	
		Bad	No impairment	$\gamma^* \gamma A$	$\gamma^* \gamma A$	
Bad		Good	---	A	A	
	No impairment		Impairment	$\gamma^2 A$	$\gamma^2 A$	
		Bad		No impairment	γ^{*2a}	$\gamma^{*2} A$

For non-reversal accounting, the expected value of the asset is

$$\begin{aligned}
 E[A]_{NR} = & p^2 A_{GG} + p(1-p) A_{GB} + p(1-p) i A_{BG} + (1-p)^2 i^2 A_{BB} \\
 & + (1-p)^2 i(1-i) A_{BB} + p(1-p)(1-i) A_{BG} + (1-p)^2 (1-i) i A_{BB} \\
 & + (1-p)^2 (i-i)^2 A_{BB}
 \end{aligned}$$

And we will solve the optimization for the variable of choice, i , for non-reversal accounting,

$$i_{NR1} = \frac{\gamma^2 \eta + \gamma^2 \eta^2 + p(1-\eta - \gamma^2 \eta - \gamma^2 \eta^2)}{2(-1+p)\gamma^2(-1+\eta)\eta^2} \quad (1)$$

For reversal accounting she faces the same problem if a twist in one scenario, as we saw in table 1.

$$\begin{aligned}
 E[A]_R = & p^2 A_{GG} + p(1-p) A_{GB} + p(1-p) i A_{BG} + (1-p)^2 i^2 A_{BB} \\
 & + (1-p)^2 i(1-i) A_{BB} + p(1-p)(1-i) A_{BG} + (1-p)^2 (1-i) i A_{BB} \\
 & + (1-p)^2 (i-i)^2 A_{BB}
 \end{aligned}$$

And solving for i ,

$$i_{R1} = \frac{-1-\eta}{2(-1+\eta)\eta} \quad (2)$$

An important analysis looks if a firm is inserted in a reversal accounting, with a possibility of reverse losses, really has a greater chance to opt for the re-evaluation.

First, looking for the asymmetric information model, and subtracting (2) – (1), the result presented is

$$i_{R1} - i_{NR1} = \frac{p(\eta-1)}{2(1-p)(\eta-1)\gamma^2\eta^2}$$

As $0 < \gamma < 1$ and $\gamma^* = \eta\gamma$, with $\eta > 1$, we can see that the fraction above is positive and this gives us three conclusions about this model.

Proposition 1: If the firm is inserted in an accounting standard that allow losses reversals, the assets expected value offered as collateral is greater.

If the manager knows that the impairment is made and the scenario changes and nature gives good news, she'll be able to do a reversal and reevaluates the asset. Supposes that she is planning to do an investment in the future, it is important that the asset is valuable as it can be. Being able to reverse the lost, she feels comfortable doing the impairment, in the first place. If she can't reverse and expects good news in the future, she will try to postpone the impairment as long as she can. That will creates uncertainty and the lender will penalize the value of the asset for that. Although the asset really has the same value in the two accounting standard possibilities, the lender doesn't feel comfortable in an uncertain scenario and charges a fee that undervalues the asset.

Proposition 2: The possibility of reverse the impairment encourages the firm to report their losses.

The manager knows that if the lender is not security about the asset value, it will undervalue the declared amount and consider a smaller capability of payment for the funding that she will ask to make the investment. Thus, if she can reverse the impairment, she will be better off if she always tells the truth and report the losses.

Corollary 1: In periods of good economic conjuncture that is a bigger difference in impairment probabilities.

In periods of greater economic growth, the manager in non-reversal accounting expects a better scenario in sequence of a bad one, what incentives her to postpone bad news announces as she expects them to be reverted.

4.2. Asymmetric Information With Manager Bias

Next, the model presents a twist of the external agent behavior and he will be more risk averse. He knows the manager may not be honest and can overvalue the assets in case of good news, and undervalue if the news are bad. With that in mind, for precaution, he uses two different discount factors. When the news are good, he will undervalue the firm's disclosure and the founder will undervalue the value disclosure, estimating $\gamma^{**} = \theta\gamma$, with $0 < \theta < 1$. Now, when the news are bad, it will be overvalued the discount factor and she will estimates γ^* , where $\gamma^* = \eta\gamma$, with $\eta > 1$.

Thus, we can see how the external agent will estimate the value of the assets in each possible combination of news. The interpretation of the expected value of the asset follows the one we did in table 1 and will be omitted. Table 2 presents these estimations.

The problem of the manager stills the same of the first model. She has to choose to do impairment or not, with the aim of when she needs funding, the value of the collateral is valuable as it can be.

Table 2: expected value of the assets for each possible scenario of sequence of news

				Expected value of assets	
Sequence of news				Non-Reversal	Non-reversal
Good	---	Good	---	A/γ^{**2}	A/γ^{**2}
Good	---	Bad	---	A	A
		Good	---	$\gamma A/\gamma^{**}$	A
Impairment	Bad	Impairment		$\gamma^2 A$	$\gamma^2 A$
		No impairment		$\gamma^* \gamma A$	$\gamma^* \gamma A$
Bad	No impairment	Good	---	A	A
		Bad	Impairment	$\gamma^2 A$	$\gamma^2 A$
	No impairment			$\gamma^{*2} A$	γ^{*2a}

Again, for both accounting standards, the expected value of the asset is

$$\begin{aligned}
 E[A]_{NR} = & p^2 A_{GG} + p(1-p) A_{GB} + p(1-p) i A_{BG} + (1-p)^2 i^2 A_{BB} \\
 & + (1-p)^2 i(1-i) A_{BB} + p(1-p)(1-i) A_{BG} + (1-p)^2 (1-i) i A_{BB} \\
 & + (1-p)^2 (i-i)^2 A_{BB}
 \end{aligned}$$

And

$$\begin{aligned}
 E[A]_R = & p^2 A_{GG} + p(1-p) A_{GB} + p(1-p) i A_{BG} + (1-p)^2 i^2 A_{BB} \\
 & + (1-p)^2 i(1-i) A_{BB} + p(1-p)(1-i) A_{BG} + (1-p)^2 (1-i) i A_{BB} \\
 & + (1-p)^2 (i-i)^2 A_{BB}
 \end{aligned}$$

For non-reversal accounting, solving the optimization for i ,

$$i_{NR_2} = \frac{p-p\eta+\gamma^2\theta-p\gamma^2\theta+\gamma^2\eta\theta-p\gamma^2\eta\theta}{2(-1+p)\gamma^2(-1+\eta)\eta\theta} \quad (3)$$

And for reversal accounting, solving for i ,

$$i_{R_2} = \frac{-p\eta + p\theta + \gamma^2\theta - p\gamma^2\theta + \gamma^2\eta\theta - p\gamma^2\eta\theta}{2(-1+p)\gamma^2(-1+\eta)\eta\theta} \quad (4)$$

Again, we can make the comparison of the probabilities of her making the impairment. For the rational agents, the subtraction is (4) – (3). The different in the probability of actually do the impairment is

$$i_{R_2} - i_{NR_2} = \frac{p(1-\theta)}{2(1-p)(\eta-1)\gamma^2 \eta^2}$$

Note that, under the hypotheses made before, the expression above is greater than zero and it can see that if the firm can revert an impairment followed by a good news, she is more willing of telling the true. This leads us to similar prepositions that we made before

Proposition 3: If the firm is inserted in an accounting standard that allow losses reversals, the assets expected value offered as collateral is greater.

Proposition 4: The possibility of reverse the impairment encourages the firm to report their losses.

Corollary 2: In periods of good economic conjuncture that is a further difference in impairment probabilities.

The analysis and conclusions about the results of this model are the same as the previous model.

5 EMPIRICAL APPLICATION

In this section, we try to connect theory and facts and leave the theoretical world to take our discussion to the actually real world. We saw earlier that when the manager has the flexibility in impairment rules, she has incentives to tell the truth more often. That would be a better place for both the lender and the firm. How that fits outside the theoretical discussion? Well, we have today a movement from the GAPPs standard to IFRS. Most of the countries already did the convergence, but a very important player is still analyzing pros and cons. The United States has his own standards, the US-GAPP, and is not convinced about the improvement that could have in making the change to IFRS. What we discuss in this paper is a matter that can be seen as one of the differences between the two standards and may be used for regulators to evaluate matters of efficiency in the rule.

Leaving aside the particularities of performing the impairment test, the IFRS gives the manager the possibility of reverse the losses when a better scenario appears. The US-GAPP is more rigid and once the loss is recognized, the manager cannot go back, so it is indicated to do impairment only when she is sure about it. As this is a discretionary decision, the external agent may be suspicious over the reported value and a distrust scenario could be created, which can result in adverse selection in the debt market.

Here is how this paper can contribute with the accounting and corporate finance literature and for accounting standards regulators. If the earnings management problem can be solved with regulation and incentives, the possibility of reverse the impairment lost increases the market confidence and allows the firm to implement a new range of profitable projects that were not getting funding.

6 CONCLUSIONS

In this paper we are looking a little deeper in how the impairment regulation affects the capability of implementing risky profitable projects, shifting the funding constraint according to how the lender estimates the asset expected value that will be available as collateral. For this analysis, we proceeded modeling how the lender looks for the financial reporting, for the nature's events and estimated the impacts in the assets, when the manager ignores the events. We saw in both models that whether the manager has the reversal possibility, she chooses to make the impairment because it gives her the biggest value of the asset offered as collateral. When she does that, the lender will provide a greater amount of funds and she will be able to implement more profitable project. If the firm can implement a greater amount of profitable projects, she will increase the capability of generating future cash flows and will create an institutional environment that enables more profitable projects to be implemented. Thus, the firm is better off in the accounting system that guarantees the maximization of the capacity of funding.

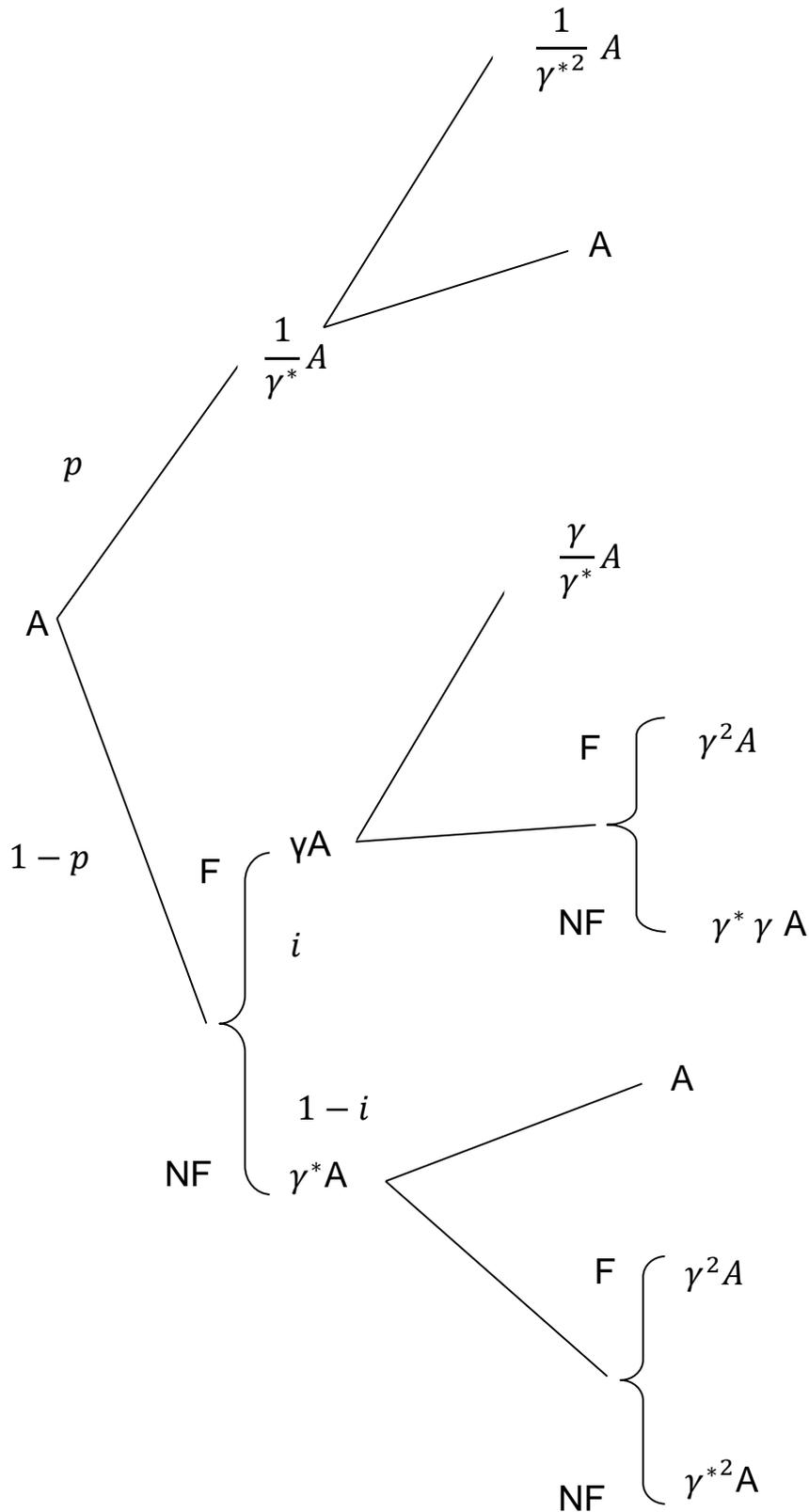
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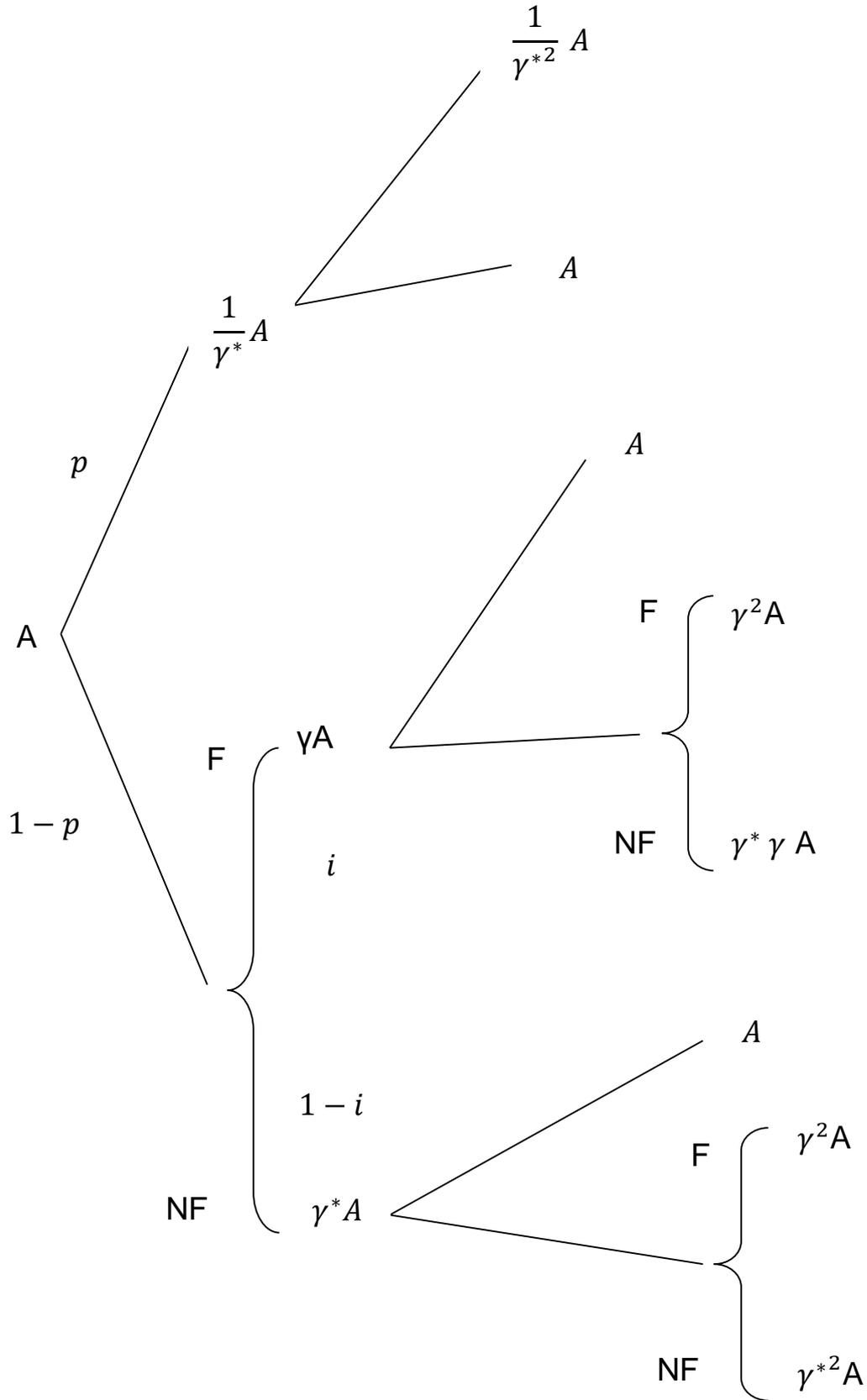
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APPENDIX:

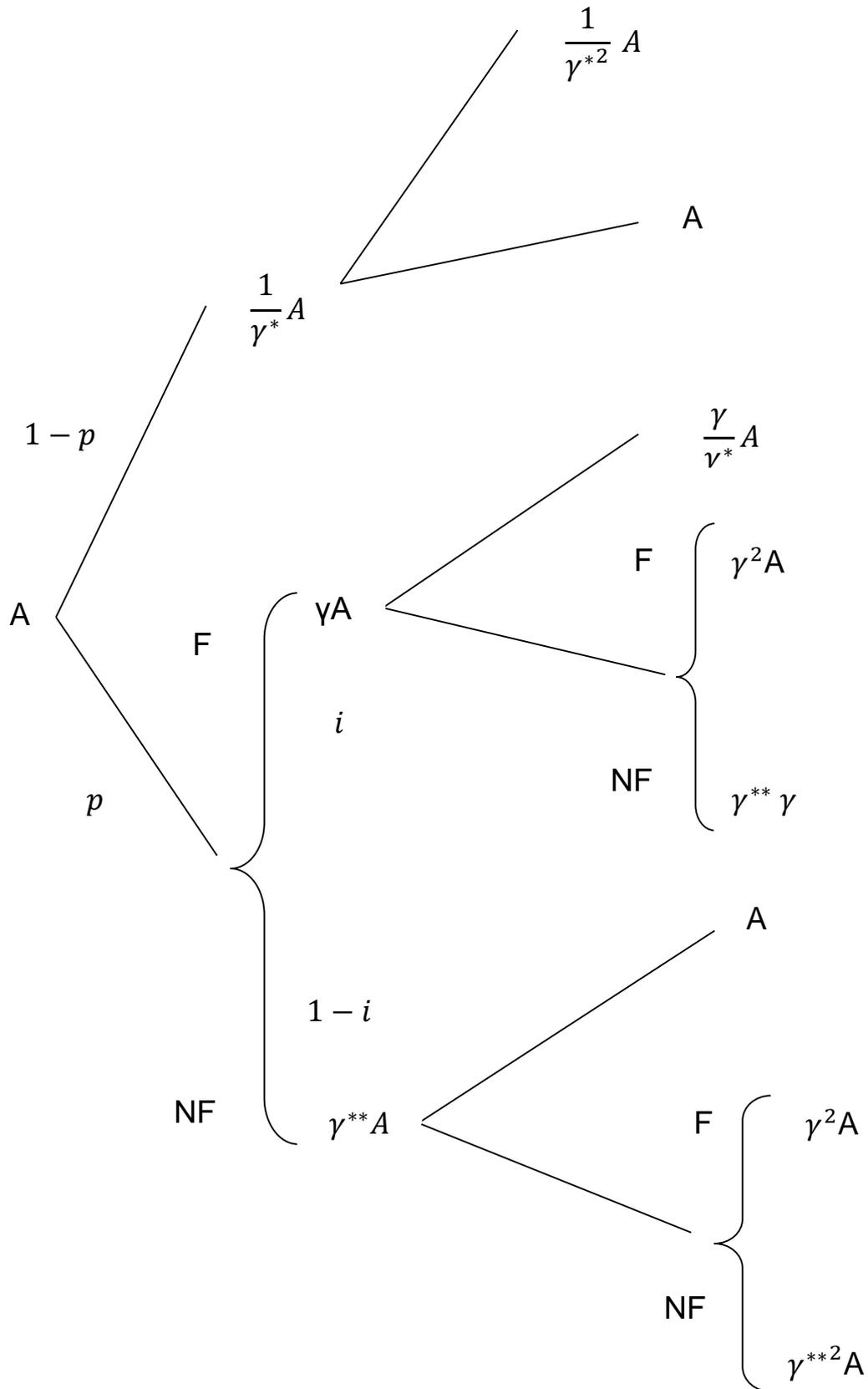
Asymmetric information– Non-reversal accounting



Asymmetric information – Reversal accounting



Asymmetric information with manager bias – Non-Reversal accounting



Asymmetric information with manager bias – Reversal accounting

