



Revaluation of Tangible Fixed Assets and Its Implications for Shareholders' Equity: An Empirical Analysis of Banque Nationale d'Algérie

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Abstract

This paper investigates the relationship between the revaluation of tangible fixed assets and shareholders' equity at the Banque Nationale d'Algérie (BNA). The study employs a quantitative approach using non-parametric methods, specifically Spearman's correlation and the Mann-Whitney U test, to assess the link between asset revaluation and financial indicators, including net income, return on equity (ROE), and average equity. The findings reveal a moderate negative correlation between revaluation surplus and both net income and ROE, indicating that asset revaluations largely reflect accounting adjustments rather than operational gains. A weak positive relationship with the equity ratio suggests limited substantive improvement in financial health. While revaluation enhances balance sheet metrics, it does not translate into increased cash flows or real shareholder wealth, potentially serving cosmetic purposes.

Key Words: Asset Revaluation; Shareholders' Equity; Fair Value Accounting, BNA Bank; Bank Performance

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Introduction :

The revaluation of tangible fixed assets represents a critical issue in financial accounting, especially in the context of rapid economic changes and the fluctuations in asset values. Accuracy of asset valuation methods becomes increasingly essential for providing reliable financial information to stakeholders.

The Algerian Financial Accounting System (Système Comptable Financier, SCF) allows entities to revalue tangible fixed assets within one or more predefined asset categories, using their revalued amounts as the new measurement basis (Ministère des Finances [MdF], 2009, p. 10). Each asset subject to revaluation must then be reported at its fair value on the revaluation date, minus any accumulated depreciation and impairment losses recorded thereafter.

A subsequent focus is placed on the concept of fair value, which serves as a cornerstone of the IFRS framework. Unlike traditional accounting based on historical cost, IFRS emphasizes fair value measurement, requiring that assets be



reported at their market or realizable value. This approach promotes a more accurate representation of economic reality, as it prioritizes economic substance over legal form in financial reporting (Abbar, 2020, p. 9). Consequently, revaluation practices must align with this principle, ensuring that financial statements reflect the actual economic conditions of the entity.

Furthermore, equity serves a critical role in assessing a firm's financial health and performance. It bolsters financial stability by enhancing a company's ability to absorb losses and decreasing its reliance on debt financing, thereby reducing overall financial risk (International Accounting Standards Board [IASB], 2016). A robust equity structure also facilitates the attraction of investments, particularly from institutional investors such as pension funds and financial institutions, who often seek financially resilient companies (Phalippou & Gottschalg, 2007).

Thus, equity plays a central role in promoting business growth and facilitating expansion. By enabling companies to fund their development initiatives internally, equity reduces dependence on external debt, granting businesses greater financial flexibility. This internal financing capability contributes to sustainable financial strategies, strengthening a company's creditworthiness and enhancing its appeal to prospective investors (Harris et al., 2017). Ultimately, equity maximizes shareholder returns by influencing a firm's ability to issue dividends and repurchase shares, which are key determinants of overall investor satisfaction (Arnold & Kyle, 2020).

Accordingly, investors should carefully analyze revaluation decisions, considering financial transparency, managerial intentions, and the actual impact on economic performance to maximize shareholder benefits (Bae et al., 2019).

The revaluation of tangible fixed assets at the *Banque Nationale d'Algérie*, a leading institution in the Algerian financial sector, raises key issues concerning the role of such operations in enhancing the bank's equity base. It also addresses the extent to which these revaluation practices contribute to strengthening the bank's capacity to manage financial risks and attract investment, especially regarding its ambitions to expand banking activities and finance developmental projects. This underscores the need to conduct an empirical investigation into the relationship between asset revaluation and shareholders' equity.

In this context, the objective of the present study is to examine and compare the correlations between the following variables: revaluation surplus and net income; changes in revaluation surplus and return on equity; revaluation surplus and return on equity; revaluation surplus and average equity.

Based on the theoretical analysis of the relationship between fixed asset revaluation and shareholder returns, it is evident that the impact of revaluation is not uniform but depends on accounting, managerial, and market factors (Esen & Perek, 2016). Revaluation can positively influence shareholder returns when it enhances financial transparency and strengthens a company's investment potential. Conversely, if used opportunistically, it may mislead investors and increase financial instability (Darmawan et al., 2022).



The remainder of the paper is structured as follows. Section I defines the key terms used in this study, while Section II provides a brief summary of related literature and outlines the theoretical framework concerning the relationship between fixed asset revaluation and shareholder returns. Section III presents an institutional overview of the Banque Nationale d'Algérie (BNA). Section IV provides and discusses the empirical results. Finally, Section V concludes the study and gives policy recommendations.

I- Key Terms and Definitions

1- Equity: Definition, Types, and Components

Equity is fundamentally defined as the residual interest in an entity's assets after deducting all its liabilities. It essentially represents the shareholders' claims on a company's net assets (IASB, 2016). As a pivotal element in financial statements, equity reflects the firm's capacity to generate long-term value for its shareholders (Metrick & Yasuda, 2010). However, it is important to note that equity does not necessarily mirror the market value of shares. Instead, it is grounded in accounting principles that determine how assets and liabilities are measured, making it more susceptible to accounting adjustments than to market fluctuations (Gilligan & Wright, 2020).

The classification of equity can be approached through the nature of investment and the structural composition of the company's finances. Common equity refers to the residual claim shareholders have after all obligations have been fulfilled. Holders of common equity typically possess voting rights, yet they are also subject to the greatest risk in the event of liquidation (Arnold & Kyle, 2020). Preferred equity, on the other hand, grants its holders priority in both dividend distribution and asset liquidation, albeit often at the cost of voting privileges (Gilligan & Wright, 2020). Private equity encompasses investments in firms not publicly traded, including venture capital and leveraged buyout funds (Phalippou & Gottschalg, 2007). Despite the perception of high returns, empirical studies suggest that actual private equity yields may be lower due to management fees and various investment constraints (Harris, Jenkinson, Kaplan, & Stucke, 2017).

In addition, retained earnings represent profits retained within the company instead of being distributed as dividends, thereby serving as a vital resource for reinvestment and growth (Arnold & Kyle, 2020). Reserves and surpluses are other forms of equity, referring to funds allocated for anticipated future obligations or designated investment projects (Arnold & Kyle, 2020).

Equity is composed of several essential components. Paid-in capital includes the funds invested by shareholders through the purchase of shares, encompassing both par value and share premiums (IASB, 2016). Retained earnings, as noted earlier, are accumulated profits reinvested in the business, contributing to self-financing and long-term expansion (Arnold & Kyle, 2020). Reserves are financial allocations set aside to mitigate operational risks or support strategic growth initiatives (Arnold & Kyle, 2020). Treasury shares, which are company shares repurchased from the market, reduce the number of outstanding



shares and may be utilized for resale or employee incentive schemes (Gilligan & Wright, 2020). Lastly, Other Comprehensive Income (OCI) incorporates unrealized gains or losses stemming from foreign currency translation, asset revaluation, or adjustments related to long-term financial liabilities (IASB, 2016).

2- Tangible Fixed Assets and Revaluation

This section addresses the treatment, measurement, and revaluation of tangible fixed assets within the Algerian financial system, in alignment with international accounting standards.

2-1- Tangible Fixed Assets: Initial Recognition and Measurement

According to the Financial Accounting System (*Système Comptable Financier*, SCF), a tangible fixed asset is defined as “a physical asset held by an entity for the purpose of production, the provision of services, leasing, or administrative use, and whose useful life is expected to extend beyond a single fiscal year” (MdF, 2009, p. 7).

At the initial recognition stage, fixed assets are recorded at their directly attributable cost. This includes all acquisition and setup costs, taxes paid, and other direct charges, while general and administrative expenses as well as start-up costs are excluded from the capitalized amount (MdF, 2009, p. 8).

Following recognition, a tangible fixed asset is measured at its historical cost less accumulated depreciation and any accumulated impairment losses (MdF, 2009, p. 10).

2-2- Revaluation of Tangible Fixed Assets

Revaluations of each tangible fixed asset must occur with sufficient regularity to ensure that the carrying amount does not materially differ from the asset's fair value at the reporting date (MdF, 2009, p. 10).

When the carrying amount of an asset increases due to revaluation, the increase should be credited directly to equity under the heading “revaluation surplus.” However, any portion of the increase that reverses a previous revaluation decrease recognized in profit or loss should itself be recognized in profit or loss (MdF, 2009, p. 10).

2-3- Impairment Losses, Depreciation, and Fair Value

An impairment loss occurs when the recoverable amount of an asset is lower than its carrying amount net of depreciation (*amortissement*). In such a case, the asset must be written down to its recoverable amount, and the difference is recognized as an impairment loss (MdF, 2009, p. 7). Conversely, if the recoverable amount subsequently exceeds the carrying amount, any previously recognized impairment loss must be reversed through profit or loss (MdF, 2009, p. 7).

Depreciation represents the systematic allocation of the cost of a tangible or intangible asset over its useful life, thereby reflecting the consumption of its economic benefits. This expense is generally recognized in the income statement unless it is capitalized into the cost of producing another asset (MdF, 2009, p. 8). The selected depreciation method must reflect the expected pattern of consumption of future economic benefits. The SCF recognizes several methods, including: the straight-line method (yielding a constant charge), the declining balance method



(decreasing charge over time), the units of production method (usage-based charge), and the progressive method (increasing charge) (MdF, 2009, p. 8).

II- Theoretical Framework and Review of Related Studies

1- Review of Related Empirical Studies

Several studies have examined the impact of revaluing tangible fixed assets on companies' financial statements, particularly focusing on equity value in diverse economic and regulatory contexts. Through these studies, various financial and structural factors influencing firms' decisions to adopt asset revaluation models have been identified, revealing differing implications based on the chosen model and market conditions.

Özgür M. Esin and A. Atila Berk (2016) conducted a study on companies listed on the BIST 100 in the Istanbul Stock Exchange. Their research analyzed the impact of applying the Revaluation Model in line with International Financial Reporting Standards (IFRS) on financial statements. They found that asset revaluation provides more accurate information about fixed assets, which aids better financial decision-making. However, the study also revealed that in Turkey, companies tend to prefer the Cost Model due to regulatory and tax-related complexities. Additionally, the revaluation led to an increase in equity rather than profits, as revaluation gains are recorded in Other Comprehensive Income (OCI) and not in the Profit and Loss Statement. This increase in asset value also results in higher depreciation, reducing reported profits over time.

In contrast, Jefriyanto, S.E., & Mulya, H. (2019), who analyzed companies listed on the Indonesia Stock Exchange (IDX) between 2012 and 2016, highlighted those factors such as asset intensity and company size positively influence revaluation decisions. Liquidity and leverage, however, did not significantly affect revaluation choices, contrary to some earlier studies suggesting that highly leveraged firms are more inclined to revalue assets to improve debt ratios. Their study further confirmed that revaluation primarily influences equity without directly affecting profits, aligning with Esin and Berk's findings.

Similarly, Aris Riantori Faisal and Eti Murwaningsari (2019), who examined firms listed on the IDX between 2013 and 2017, found that firms with foreign or majority ownership are more likely to adopt asset revaluation, as external investors demand greater transparency. The study also demonstrated that revaluation positively impacts corporate market value, as investors perceive it as a signal of financial strength. This is consistent with the general idea that asset revaluation enhances the overall financial standing of companies.

The study by Fakhraddin Mohammad Rezaei, Iman Khosrovian, and Ehsan Dolat Zarei (2020), which focused on companies listed on the Tehran Stock Exchange (TSE) from 2007 to 2017, investigated the relationship between asset revaluation and earnings management. The authors found a direct relationship between asset revaluation and earnings management, with firms adjusting reported earnings post-revaluation to achieve certain financial objectives. Non-depreciable assets such as land were often revalued to inflate earnings without affecting



depreciation. This opportunistic behavior was found to influence audit metrics and financial ratios, allowing earnings management to occur with reduced risk of detection.

Jinchul Bae, Jaehong Lee, and Onsoo Kim (2019) also examined the impact of revaluation on financial transparency and trust-building between management and investors. Their study, which analyzed 6,277 firm-year observations from companies listed on the Korea Stock Exchange (KSE) between 2007 and 2017, found that asset revaluation generally enhances financial transparency and reduces the risk of stock price crashes. However, for firms with weak financial health or high information asymmetry, revaluation may increase stock price crash risk, suggesting that revaluation is sometimes used opportunistically by companies facing financial difficulties.

Lastly, Tafik Atig's Study (2017) on Algerian companies from 2010 to 2015 explored the relationship between revaluation of fixed assets at fair value and future returns, represented by operating income. Atig found a statistically significant positive relationship between revaluation and future operating income, suggesting that asset revaluation can serve as a reliable basis for predicting future performance. The study also concluded that revaluing assets at fair value enhances the quality of financial information, making it more useful for forecasting future performance.

The reviewed studies collectively highlight the significant role of fixed asset revaluation in enhancing financial transparency, improving equity value, and providing more reliable information for decision-making. While asset revaluation contributes to an increase in equity, its effects on profitability are nuanced. Revaluation tends to elevate equity values by reflecting fair market values of assets, yet the resulting higher depreciation expenses can lead to reduced reported profits over time. This trade-off is an essential consideration for companies deciding between the Revaluation and Cost models.

Furthermore, the studies underscore the role of external factors such as ownership structure, regulatory environments, and market conditions in influencing revaluation decisions. For instance, companies in markets with stronger legal protections for investors, such as Singapore, are more likely to adopt the Revaluation Model, as revaluation is perceived as a signal of financial robustness. Conversely, in markets like Turkey, where regulatory and tax complexities exist, firms may prefer the Cost Model despite the potential advantages of revaluation.

One important observation across these studies is that while asset revaluation enhances the quality of financial reporting and aids in better financial forecasting, it can also be used opportunistically, especially by firms aiming to manage earnings or influence investor perceptions. This dual nature of revaluation—both as a financial tool for enhancing transparency and as a potential vehicle for earnings manipulation—highlights the importance of regulatory oversight in ensuring that revaluation decisions are made in the best interests of investors and other stakeholders.



2- Theoretical Framework

Modern companies rely on a variety of influential accounting practices, among which fixed asset revaluation stands as one of the most pivotal. This practice enables companies to report their assets at fair value instead of historical cost. Such revaluation affects corporate performance by increasing asset values, lowering leverage ratios, and consequently augmenting equity, which may influence shareholder returns (Rahman et al., 2021). However, this effect depends on several factors including financial transparency, investor confidence, and the firm's ability to utilize the revalued asset base to generate future economic benefits (Bae et al., 2019).

2-1- The Impact of Revaluation on Stock Prices and Shareholder Returns

Stock prices are a critical indicators investors use to gauge expected returns from equity investments in the financial market. Fixed asset revaluation can contribute to stock price appreciation by enhancing the company's financial position (Faisal & Murwaningsari, 2019). When asset values increase, shareholders' equity correspondingly rises, improving the price-to-book (P/B) ratio, which is a fundamental valuation metric used by investors to assess stock attractiveness (Rahman et al., 2021).

Accordingly, shareholders in companies announcing asset revaluation may realize capital gains due to short-term stock price appreciation, as the market interprets revaluation as a positive signal of improved financial health (Esen & Perek, 2016). Nonetheless, the effect varies across jurisdictions and market environments. Some studies suggest that revaluation may not necessarily lead to stock price increases, particularly if it is applied mainly to enhance accounting appearances without substantial operational improvements (Darmawan et al., 2022). Additionally, in some contexts, revaluation is viewed merely as an accounting adjustment that does not generate actual cash flows, thereby limiting its long-term influence on stock valuation (MohammadRezaie et al., 2020).

2-2- Financial Transparency and Its Effect on Shareholder Returns

Financial transparency functions as a key governance mechanism and significantly impacts investor decision-making by enabling more accurate evaluation of a company's performance. When firms revalue their assets, they provide investors with a clearer reflection of true economic asset values (especially under the fair value measurement framework), which can bolster investor confidence and increase demand for shares, thus potentially enhancing shareholder returns (Bae et al., 2019). Conversely, if management uses revaluation opportunistically to obscure financial distress or inflate accounting earnings artificially, the result can be erosion of investor trust and heightened stock price volatility (MohammadRezaie et al., 2020).

Hence, the positive effect of revaluation on shareholder returns largely depends on the integrity, transparency, and ethical application of this accounting tool by management (Darmawan et al., 2022).



2-3- Reducing Leverage Ratios, Increasing Equity, and Implications for Shareholder Returns

To achieve specific financial objectives, some companies employ asset revaluation as a means to enhance critical financial ratios, notably the debt-to-equity ratio. A reduction in this ratio—implying lower financial leverage—improves the firm's capacity to secure financing under more favorable conditions, achieved through the uplift in asset values (Rahman et al., 2021). Improving financial ratios as a result of revaluation may enhance creditworthiness and financial stability, indirectly benefiting shareholders (Faisal & Murwaningsari, 2019).

However, these benefits are not automatic. Sometimes, revaluation results in higher depreciation charges due to increased carrying amounts of assets, which can suppress reported earnings and reduce distributable cash dividends to shareholders (Esen & Perek, 2016).

2-4- Opportunistic Use of Revaluation and Its Effect on Shareholder Returns

Revaluation can also be misused as a tool for earnings management, whereby companies selectively adjust asset values to inflate accounting profits without corresponding real economic gains (MohammadRezaie et al., 2020). Such practices might temporarily elevate stock prices, but once investors discern the absence of genuine improvement, share prices may fall sharply (Darmawan et al., 2022). Moreover, firms with high levels of information asymmetry may exploit revaluation to conceal financial risks, which amplifies stock price volatility and negatively affects long-term shareholder wealth (Bae et al., 2019).

2-5- Long-Term Impact of Asset Revaluation on Shareholders

Although asset revaluation (reflected in increased book values) may have no immediate or only a positive short-term effect, its long-term impact depends on how the company deploys the increased capital base. If the revaluation surplus is invested in productive assets yielding sustainable returns, it can lead to genuine long-term profitability and enhanced shareholder value (Rahman et al., 2021). Conversely, if used merely to inflate asset values without real investment, it may lead to serious financial distortions in the market followed by a steep correction causing significant shareholder losses (MohammadRezaie et al., 2020).

Thus, the impact of revaluation on equity and shareholders is context-dependent, influenced by the accounting policies, managerial intentions, and market conditions surrounding the revaluation event (Esen & Perek, 2016). Consequently, investor decisions concerning revaluation disclosures should be informed by a thorough analysis of financial transparency, managerial objectives, and the actual economic consequences to maximize shareholder benefits (Darmawan et al., 2022).



III- Presentation of the Case Institution: The BNA

The Banque Nationale d'Algérie (BNA) stands as the first national commercial bank established in Algeria. Founded in 1966, BNA operates as a joint-stock company with a share capital of 150 billion Algerian dinars. Its headquarters are located at Che Guevara Street, Algiers. The bank offers a comprehensive range of banking and insurance products and services, supported by a workforce exceeding 5,000 employees, actively contributing to the financing of projects and the promotion of national economic development. BNA's portfolio includes 31 subsidiaries, six of which operate internationally.

1- Historical Development

BNA was established in 1966 as a universal bank entrusted with financing diverse economic sectors. In 1982, a major restructuring led to the creation of the Bank for Agricultural Development and Rural Support (BADR). In 1988, following the economic liberalization reforms, BNA was reorganized to align with the new independent framework for economic entities. The enactment of the Monetary and Credit Law in 1990 marked a pivotal milestone by granting the bank full operational autonomy. BNA obtained its first official accreditation from the Monetary and Credit Council in 1995. Subsequent increases in share capital occurred in 2009 and 2018, ultimately reaching 150 billion dinars. In 2020, the bank expanded its service offerings by officially launching Islamic finance operations.

2- Organizational Structure and Committees

To ensure sound governance and operational efficiency, BNA relies on a robust system of specialized committees. The key bodies include the Executive Committee for General Management, the Audit Committee, the Credit Committee, the Treasury Committee, and the Information Systems Security Committee (COSSI). Additional committees oversee commitment monitoring, account settlement, implementation of external audit recommendations, network development, staff recruitment, and the management of Islamic finance activities. This committee structure reflects BNA's commitment to operational excellence and regulatory compliance.

3- Financial Performance and Financial Inclusion Indicators

In 2023, BNA demonstrated solid financial performance with a total balance sheet amounting to 6,106,310 million dinars and customer deposits totaling 2,940,935 million dinars. Banking revenues reached 212,358 million dinars, while banking expenses amounted to 114,371 million dinars, resulting in a net banking income (NBI) of 104,846 million dinars. The operating income stood at 52,413 million dinars, and the net income was reported at 50,378 million dinars. Key financial ratios reflected strong financial stability: the capital adequacy ratio stood at 26.01%, the ratio of own funds and permanent resources at 70%, and the liquidity ratio at a robust 414% (Banque Nationale d'Algérie, 2023). Regarding financial inclusion, BNA operated 228 physical branches and 31 digital branches, servicing more than 2,557,780 customer accounts. The bank also maintained a network comprising 100 Automated Teller Machines (ATMs), 169



cash dispensers (DABs), 7,046 Electronic Payment Terminals (TPEs), and had 346,190 active bank cards, supported by a workforce of 5,851 employees.

IV - Results and Discussion

1- Study Results

1-1- Correlation Coefficient

Correlation coefficient of variables x and y shows how strongly the values of these variables are related to one another. It is denoted by (r) and $r \in [-1, 1]$. If the correlation coefficient is positive, then both variables are simultaneously increasing or simultaneously decreasing (Florentin, 2009).

The choice of an appropriate correlation coefficient depends on several key factors, as outlined by Asuero, Sayago, and González (2006, pp. 45–46):

- Nature of the data: For ordinal variables, non-normal distributions, or datasets with outliers, non-parametric alternatives such as Spearman's rank correlation coefficient (ρ) are recommended.
- Shape of the relationship: Pearson's coefficient assumes linearity. If the relationship is nonlinear (e.g., quadratic), Pearson's r may misrepresent the strength of the association, even when a strong monotonic relationship exists.

1-2- Distributional Analysis of Data

The following variables were analyzed over the period 2014–2023. Abbreviations were assigned for clarity and ease of processing and reference:

AE: Average Equity; **R:** Net Income; **ROE:** Return on Equity; **RE:** Revaluation Surplus; **RER:** Annual Change Rate in Revaluation Surplus.

The results of conducting distributional analysis are reported in Table 1.

Table 1: « Distributional Analysis of Study Data »

Variables	JB Statistic	p-value	Distribution
ROE	22.73	0.000012	Non-normal
RE	1.18	0.552739	Normal
AE	22.73	0.000012	Non-normal
R	7.24	0.026770	Non-normal

Source: Author's calculations based on EViews outputs.

1-3- Spearman Correlation Analysis

Due to the non-normal distribution of most variables—as indicated by the Jarque–Bera test—this study adopted non-parametric tools to ensure analytical consistency. Spearman's ρ was used to assess monotonic relationships, especially when data contain outliers or are not linearly associated. The Mann–Whitney U test was employed to compare financial metrics across high and low revaluation groups, serving as a robust alternative to the t-test in non-normal conditions. These methods allowed for context-appropriate inference given the nature and distribution of the data.

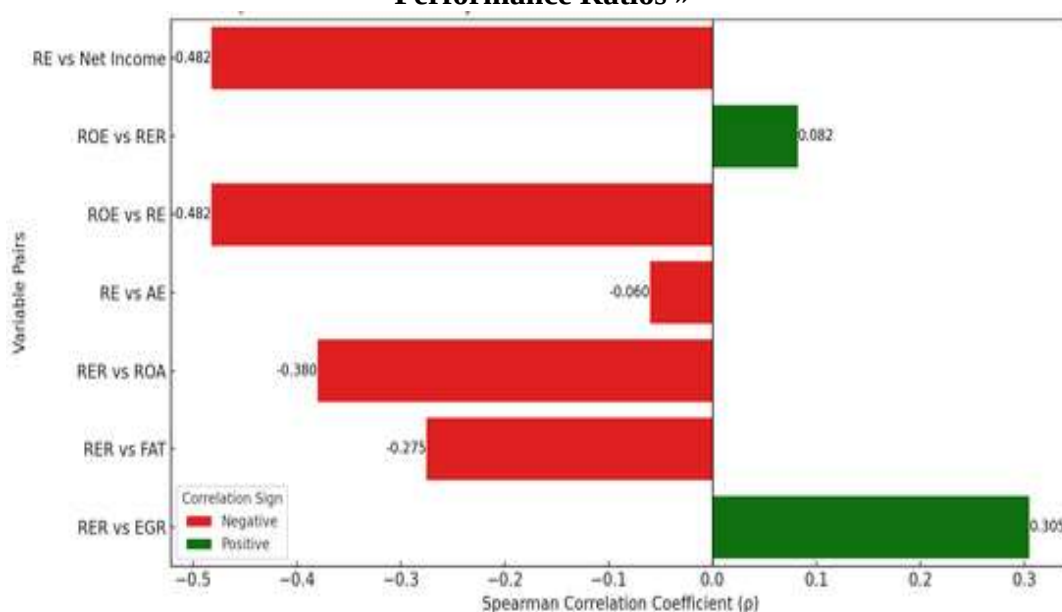
The correlation coefficient measures the degree of line association between two variables. Actually, we have strong relationship if $r \in [0.8, 1]$ or $r \in [-1, -0.8]$; moderate relationship if $r \in [0.5, 0.8]$ or $r \in [-0.8, -0.5]$; and weak relationship if $r \in [-0.5, 0.5]$ (Florentin, 2009).



The results of conducting Spearman correlation analysis are as follows:

- RE and Net Income (R): $\rho = -0.482$, indicating moderate negative correlation, and supporting the hypothesis that revaluations may be cosmetic in nature, not reflective of actual performance improvements.
- ROE and RER: $\rho = 0.082$, which suggests a very weak positive correlation. This indicates minimal impact of changes in revaluation surplus on ROE, suggesting that asset revaluations do not significantly enhance shareholder returns, knowing that Mann–Whitney U test between high and low RER groups for ROE yielded $p = 0.0727$, indicating statistical significance at the 10% level.
- ROE and RE: $\rho = -0.482$; this indicates moderate negative correlation, and suggests that increases in revaluation surplus tend to be associated with reductions in ROE, potentially due to asset base expansion without proportional operational improvement.
- RE and AE: $\rho = -0.060$, which suggests negligible negative correlation, indicating no meaningful association between revaluation surplus and average equity levels. Mann–Whitney U test comparing AE across high and low RE groups yielded $p = 0.0727$, implying weak significance.

Fig. 1 : « Correlation Patterns of Asset Revaluation with Equity and Performance Ratios »



Source: Author's elaboration based on EViews output

2- Discussion of Results

2-1- Interpretation of Correlation Patterns

The correlation analysis provides critical insight into how asset revaluation activities relate to key financial performance metrics at BNA. The findings reflect a spectrum of associations—ranging from weak to moderate, and both positive and negative—each offering implications about the economic consequences of revaluation decisions.



The relationship between Return on Equity (ROE) and the annual change in the revaluation surplus (RER) was found to be weak and positive ($\rho = 0.082$), suggesting that the increase in revalued asset values does not substantially improve the bank's profitability relative to shareholder equity. This minimal impact may be attributed to the non-cash nature of revaluation adjustments and the limited operational leverage gained through such accounting measures. Furthermore, macroeconomic conditions, regulatory frictions, or fluctuations in asset markets may induce increases in book values without delivering sustained enhancements in earnings. Although the Mann–Whitney U test indicated statistical significance at the 10% level ($p = 0.0727$), the magnitude of the correlation remains insufficient to suggest a meaningful influence of RER on shareholder returns.

In contrast, the moderate negative association observed between revaluation surplus (RE) and return on equity (ROE) ($\rho = -0.482$) reinforces the notion that upward adjustments in asset values do not inherently lead to enhanced profitability. This inverse relationship stems from the mechanics of the ROE formula—where a rising equity base, inflated by asset revaluation, is not matched by a proportional increase in net income. Consequently, ROE may decline. Importantly, revaluation is a non-cash accounting procedure that does not generate distributable earnings or tangible financial returns unless followed by improved operational performance. When revaluations are implemented without strategic asset utilization, they risk becoming cosmetic adjustments, enhancing the appearance of financial strength without delivering corresponding economic value. This interpretation aligns with the work of MohammadRezaie et al. (2020), who noted that revaluations often reflect superficial financial fortification rather than substantive gain.

Similarly, the negative correlation between revaluation surplus and net income ($\rho = -0.482$) suggests that revaluation may have adverse consequences for reported profitability. Although revaluation surpluses appear under Other Comprehensive Income (OCI) and not the income statement, the associated increase in asset book values leads to elevated depreciation charges in subsequent periods. This higher non-cash expense suppresses accounting profit unless revenue growth offsets the additional burden. The lack of direct contribution of revaluations to earnings explains the disconnect between rising balance sheet figures and stagnant or declining net income. These findings contradict prior expectations that revaluation improves market perceptions and profit levels, and instead support the perspective that revaluations can obscure underlying operational inefficiencies.

Moreover, the study identifies negative associations between revaluation surplus and key operational efficiency indicators, namely return on assets (ROA) and fixed asset turnover (FAT). The correlation coefficients— $\rho = -0.38$ for ROA and $\rho = -0.275$ for FAT—suggest that while revaluation may increase the accounting value of fixed assets, it does not necessarily enhance the institution's ability to derive economic benefits from them. In fact, these inflated asset bases tend to dilute performance indicators when not coupled with productivity gains or revenue growth. This indicates inefficiencies in asset utilization post-revaluation, whereby revalued assets may remain underutilized or poorly integrated into the



value-generating activities of the bank. Hence, revaluation in such contexts is more indicative of financial re-engineering than of improved strategic deployment.

Lastly, the negligible correlation between revaluation surplus and average equity ($\rho = -0.060$) implies that increases in revaluation values do not consistently translate into broader equity growth. While revaluation entries expand specific equity components (notably revaluation reserves), they do not necessarily affect core capital or contribute meaningfully to long-term equity expansion unless accompanied by retained earnings or real investment gains. The Mann–Whitney U test indicated weak statistical significance ($p = 0.0727$), which further supports the interpretation that revaluation surpluses may be episodic and disconnected from sustainable capital development.

2-2- Additional Variables and Analytical Implications:

To more precisely understand the extent and nature of the impact of fixed asset revaluation on the equity of BNA bank, supplementary suitable variables integral to interpreting this relationship were introduced. These comprised the return on revalued fixed assets (ROA)¹, fixed asset turnover ratio (FAT)², and equity growth rate (EGR). The research outcomes are as follows:

- A moderate negative correlation of -0.38 was observed between RER and ROA, showing that increases in revaluation surplus correspond with declines in asset profitability. This suggests that the expansion of the total value of assets via revaluation is not accompanied by proportional gains in operational efficiency.
- FAT ratio exhibited a negative correlation of -0.275 with revaluation surplus, demonstrating that higher revaluation surpluses are associated with reduced efficiency in the utilization of fixed assets to generate revenue.
- A moderate positive correlation of 0.305 was found between revaluation surplus and EGR, reflecting the accounting nature of revaluation effects that enhance equity without implying improved asset profitability.

These results collectively imply that:

- Fixed asset revaluation materially increases equity on the balance sheet from an accounting standpoint; however, it does not translate into enhanced profitability, as corroborated by metrics such as ROE, net income, and ROA.
- The observed negative correlations with operational performance indicators (including return on assets and asset turnover) state that the elevated asset values post-revaluation do not equate to proportional improvements in productive capacity.
- Consequently, this reinforces the idea that asset revaluation predominantly serves as an instrument for financial statement enhancement rather than a valid reflection of economic value creation or operational improvement within the bank.

These internal indicators reinforce the conclusion that revaluation primarily affects equity from an accounting perspective, without translating into improved profitability or operational efficiency. However, to fully understand the nature and consequences of revaluation practices, it is essential to consider the broader context in which these decisions are made.



External factors such as inflation, regulatory environment, and investor protection significantly influence asset revaluation decisions. In inflationary economies, revaluation helps correct distorted book values, while in unstable or poorly governed contexts, it may be perceived as cosmetic. Moreover, tax burdens and ambiguous standards often discourage the adoption of the fair value model. Ultimately, the impact of revaluation is shaped by the broader institutional and economic landscape.

From a practical standpoint, the study findings raise significant concerns for investors who may be misled by accounting-based increases in equity that are not accompanied by corresponding improvements in profitability or operational efficiency. Such distortions can adversely affect investment decisions and the perceived financial health of firms. For regulatory bodies, asset revaluation poses challenges in discerning genuine financial strength from inflated book values resulting from non-cash adjustments. Moreover, revaluation practices may distort key prudential metrics such as capital adequacy ratios, particularly in inflationary or unstable economic environments. Therefore, accounting treatments related to asset revaluation should be subject to rigorous oversight to prevent their misuse in enhancing financial reports without reflecting substantive economic value creation.

3- Comparison with Prior Literature

Our comparison of results with prior studies will focus on the main findings:

- IAS 16 and IAS 40 stipulate that revaluation at fair value directly affects the profit and loss statement, thus impacting financial ratios (De Bissy, 2006). However, while Faisal and Murwaningsari (2019) suggest that asset revaluations improve firm value through enhanced equity, the current findings indicate negative associations with ROE and Net Income, suggesting that such revaluations may have primarily cosmetic effects.
- Rahman et al. (2021) reported that revaluations reduce leverage and improve borrowing capacity, but the absence of notable changes in AE in this study suggests an accounting rather than economic impact. However, Picard (2004) observed that profitability may improve even as asset values decline, driven by technological efficiency and increased returns on capital.
- MohammadRezaie et al. (2020) highlighted the opportunistic use of asset revaluation to improve financial appearance without cash flow improvements, which is consistent with current findings.
- Lastly, Darmawan et al. (2022) emphasized that the effects of revaluation are often transient and non-recurring, further supported by the lack of sustained equity growth in this dataset.

4- Hypothesis Testing

Hypothesis 1: Relationship between Annual Revaluation Change (RER) and ROE

- H_0 : There is no statistically significant relationship between RER and ROE.
- H_1 : There is a statistically significant relationship between RER and ROE.

Spearman's $\rho = 0.082$, indicating a weak positive correlation. Mann–Whitney U test $p = 0.0727$, suggesting a statistical significance at 10%.



Accordingly, fail to reject H_0 ; this implies that no significant effect of revaluation change on ROE is established.

Hypothesis 2: Relationship between Revaluation Surplus (RE) and Net Income (R)

- H_0 : No statistically significant relationship exists.
- H_1 : A statistically significant positive relationship exists.

Spearman's $\rho = -0.482$ indicates a moderate negative relationship.

Hence, H_1 is rejecting in favor of H_0 ; higher revaluation surpluses are associated with lower net income.

Hypothesis 3: Effect of Revaluation Surplus on Average Equity (AE)

- H_0 : Revaluation does not significantly increase average equity.
- H_1 : Revaluation leads to a significant increase in average equity.

Spearman's $\rho = -0.060$, negligible correlation.

Given that the Mann–Whitney U test yields a p-value of 0.0727, this suggests weak statistical significance, which is insufficient to confirm that revaluation leads to a statistically significant increase in average equity.

Conclusion :

This study provides evidence on the relationship between the revaluation of tangible fixed assets and shareholders' equity in an established Algerian bank. It reveals a moderate negative correlation between revaluation surplus and both net income and return on equity, suggesting that increases in asset revaluation do not translate into improved profitability or shareholder returns. This inverse relationship implies that asset revaluations may primarily reflect accounting adjustments rather than real operational gains. In addition, the weak positive correlation between ROE and the revaluation surplus ratio indicates minimal impact of revaluation adjustments on profitability ratios. The very weak association between revaluation surplus and average equity further reflects the limited economic and financial significance of revaluation increments in enhancing the bank's capital resources. In contrast, revaluation enhances the bank's financial position by improving balance sheet ratios—such as the equity ratio—through an increase in the accounting value of revalued assets and shareholders' equity. However, this increase is non-cash in nature and does not generate new cash earnings; moreover, it may lead to higher depreciation expenses, due to the increased book value, which exert downward pressure on net income. These findings indicate that the bank may be employing revaluation as a tool for financial embellishment without corresponding improvements in operational efficiency or genuine economic returns. Furthermore, the equity growth resulting from revaluation does not represent a real increase in shareholder wealth. These findings, taken together, support the view that asset revaluation in Algerian context may serve cosmetic purposes, with limited evidence of sustained improvements in financial and operational performance.

To mitigate the adverse outcomes highlighted above, companies must carefully consider the broader implications of asset revaluation on their financial



statements, particularly on equity and profit, as well as on investor perceptions. Clear guidelines and stricter practices can help reduce the risks of opportunistic behavior, ensuring that asset revaluation continues to serve as a legitimate tool for improving the quality of financial reporting and supporting long-term operational performance. Among the best practices in this context, we mention the following recommendations:

- Link fixed asset revaluation to well-defined and strategic investment plans that leverage the revalued assets in income-generating activities.
- Place greater emphasis on operational improvements and the development of banking services.
- Enhance financial transparency by disclosing explanatory notes that clarify the reasons behind the revaluation and its actual impact.

The present study demonstrates substantive value by employing a multifaceted approach, which enables a nuanced differentiation between the superficial effects of asset revaluation on book values and its real economic impact on bank efficiency. The incorporation of relevant literature further contextualizes the findings within the broader scholarly discourse. While the focus remains primarily on the relationship between revaluation surplus and equity ratios, using actual commercial bank data adds practical relevance. Nevertheless, the study's scope could benefit from expanding the set of explanatory variables, and accounting for macroeconomic and regulatory factors that potentially moderate the observed relationships. Overall, the research presents a meaningful contribution to the understanding of fixed asset revaluation effects, although opportunities for deeper analysis remain.

Bibliographic References :

- Abbar, M. (2020). *Manuel de procédures de gestion – Les comptes de bilan et de gestion*. Université Tahri Mohamed – Béchar, Faculté des Sciences Économiques.
- Asuero, A. G., Sayago, A., & González, A. G. (2006). The correlation coefficient: An overview. *Critical Reviews in Analytical Chemistry*, 36(1), 41–59. <https://doi.org/10.1080/10408340500526766>
- Atig, T. (2017). The quality of fixed asset revaluation at fair value in the Algerian context [جودة إعادة تقييم الأصول الثابتة بالقيمة العادلة في السياق الجزائري]. *revue des politiques économiques*, 5(2), 64–77. <https://asjp.cerist.dz/en/article/137731>
- Bae, J., Lee, J., & Kim, E. (2019). Does fixed asset revaluation build trust between management and investors? *Sustainability*, 11(13), 3700. <https://doi.org/10.3390/su11133700>
- Banque Nationale d'Algérie. (2022). *Annual financial and performance report*. BNA Official Publications.
- Banque Nationale d'Algérie. (2023). *Annual financial and performance report*. BNA Official Publications.
- Darmawan, A., Sinaga, A. R., & Wibowo, A. (2022). The relationship of fixed asset revaluation to perception of performance: Evaluation of tax policy. *Jurnal*



Akuntansi dan Keuangan Indonesia, 19(2), 188–201.
<https://doi.org/10.21002/jaki.v19i2.1387>

- De Bissy, A. (2006). Évaluation des immobilisations. Le principe d'image fidèle à l'épreuve de la normalisation comptable. In *La normalisation comptable* (pp. 275–293). Presses Universitaires de Toulouse Capitole.
<https://books.openedition.org/putc/1708?lang=fr>
- Dini, S., Saraswati, A., & Putri, B. F. (2022). The effect of fixed asset turnover, capital structure, dividend policy, and company size on the value of property and real estate companies listed on the Indonesia Stock Exchange. *Journal of Research in Social Science and Economics and Management (JRSSEM)*, 1(10), 1755–1775. <https://doi.org/10.36418/jrssem.v1i10.182>
- Esen, Ö. M., & Perek, A. A. (2016). The revaluation model and its effects on financial statements: An examination on BIST 100 companies. *Journal of Knowledge Economy & Knowledge Management*, 11(2), 15–30.
- Faisal, A. R., & Murwaningsari, E. (2019). Determinants of asset revaluation and corporate value: A study on Indonesia Stock Exchange. *International Journal of Business, Economics and Law*, 18(5), 159–165.
- Fathmaningrum, E. S., & Yudhanto, S. K. (2019). Determinants of fixed asset revaluation decision and its impacts on market reaction: A comparative study in Indonesia and Singapore. *Journal of Accounting and Investment*, 20(2), 213–225. <https://doi.org/10.18196/jai.200291>
- Florentin, S. (2009). Alternatives to Pearson's and Spearman's correlation coefficients. *International Journal of Statistics & Economics*, 3(S09), 39–46.
- Gilligan, J., & Wright, M. (2020). *Private equity demystified: An explanatory guide*. Oxford University Press.
- International Accounting Standards Board (IASB). (2016). *International Financial Reporting Standards (IFRS Consolidated)*.
- Jefriyanto, S. E., & Mulya, H. (2019). Fixed asset revaluation : decision-making. *International Journal of Science and Research (IJSR)*, 8(2), 205–209. <https://doi.org/10.21275/ART20195109>
- Ministère des Finances. (2009). *Arrêté du 23 Rajab 1429 correspondant au 26 juillet 2008 fixant les règles d'évaluation et de comptabilisation*. *Journal Officiel de la République Algérienne*, N°19, 6–11. 15/02/2025
- MohammadRezaie, F., Khosravian, I., & Zarei, E. D. (2020). Asset revaluation and earnings management. *Journal of Financial Accounting Knowledge*, 7(2), 89–104.
- Rahman, M. M., Ahmed, K., & Baker, M. (2021). Fixed asset revaluation and debt contracting: Evidence from financially distressed firms. *Accounting & Finance*, 61(1), 341–370. <https://doi.org/10.1111/acfi.12598>
- Rahman, M. T., Hossain, S. Z., & Haque, M. A. (2021). Timing, recurrence, and effects of fixed asset revaluation: Evidence from Bangladesh. *International Journal of Economics and Financial Issues*, 11(2), 1–12.



- Yahya, A., & Hidayat, S. (2020). The influence of current ratio, total assets turnover, and return on assets on earnings persistence in automotive companies. *Journal of Accounting, Auditing and Business*, 3(1), 1–12. <https://www.researchgate.net/publication/349030544>

¹ The calculation of the Return on Assets (ROA) formula was based on the following reference: (Yahya & Hidayat, 2020).

² The calculation of the Fixed Asset Turnover ratio formula was based on the following reference: Dini, Saraswati, & Putri (2022, p. 1758).

Appendix::

Table A1 :

Total Assets, Net Income, and Return on Assets (ROA) (%) from 2014 to 2023

Year	Total Assets	Net Income	Return on Assets (ROA) (%)
2014	2,620,619,286	29,784,457	1.14
2015	2,719,081,219	29,535,515	1.09
2016	2,843,371,178	31,419,896	1.11
2017	2,828,633,272	29,986,747	1.06
2018	3,082,299,350	35,832,184	1.16
2019	3,491,982,968	19,064,194	0.55
2020	3,440,270,872	23,047,665	0.67
2021	4,481,253,482	46,690,479	1.04
2022	5,641,638,620	59,206,466	1.05
2023	6,106,310,493	50,377,632	0.83

Source: Authors' own

Table A2 :

Average Fixed Assets, Net Sales, and Fixed Asset Turnover Ratio from 2014 to 2023

Year	Average Fixed Assets	Net Sales	Fixed Asset Turnover Ratio
2014	22,484,262.5	88,444,241	3.93
2015	21,906,024	116,508,190	5.32
2016	21,386,248	103,356,790	4.83
2017	21,470,907.5	78,045,578	3.63
2018	22,235,952.5	95,468,634	4.29
2019	22,729,531.5	93,737,252	4.12
2020	22,738,580.5	85,360,235	3.75
2021	22,829,908	94,233,211	4.13
2022	23,085,452	84,293,285	3.65
2023	23,530,137	104,423,072	4.44

Source: Authors' own

**Table A3 :**

Equity at Beginning and End of Period and Equity Growth Rate from 2014 to 2023

Year	Equity at Beginning of Period	Equity at End of Period	Equity Growth Rate (%)
2014	196,753,656	200,017,374	1.66
2015	200,017,374	224,451,555	12.22
2016	224,451,555	242,257,395	7.93
2017	242,257,395	265,229,639	9.48
2018	265,229,639	288,240,277	8.68
2019	288,240,277	299,418,787	3.88
2020	299,418,787	320,742,573	7.12
2021	320,742,573	380,489,682	18.63
2022	380,489,682	417,209,873	9.65
2023	417,209,873	452,178,226	8.38

Source: Authors' own

Table A4 :

Statistical Tests of Variable Distributions and Bivariate Relationships Based on EViews Output

Relationship	Test	Test Statistic	p-value	Significant at 1%	Significant at 5%	Significant at 10%
ROE (distribution)	Jarque-Bera	1,246948	0,536079	No	No	No
RE (distribution)	Jarque-Bera	5,229822	0,073174	No	No	Yes
RER (distribution)	Jarque-Bera	31,5466	1,41E-07	Yes	Yes	Yes
CP (distribution)	Jarque-Bera	5,541179	0,062625	No	No	Yes
ROE vs RER_group (High vs Low)	Mann-Whitney U	1	0,0727	No	No	Yes
CP vs RE_group (High vs Low via Median)	Mann-Whitney U	17	0,0727	No	No	Yes
ROE vs RER	Spearman Correlation	0,082		No	No	No
ROE vs RE	Spearman Correlation	-0,482		Unknown	Unknown	Unknown
RE vs CP	Spearman Correlation	-0,06		No	No	No
RE vs R (Net Income)	Spearman Correlation	-0,482		Unknown	Unknown	Unknown

Source : Prepared by the author based on EViews output