

## Productivity, investment and debt structure of industrial SMEs

الإنتاجية، الاستثمار وهيكل الديون في المؤسسات الصغيرة والمتوسطة الصناعية

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### Abstract

This paper aims to study a group of SMEs in the city of Oran in order to draw the main gaps and difficulties to face local and international competition, by analyzing the evolution of performance ratios, productivity value, sales productivity, value-added rate, investment rate, and debt structure. These SMEs, however, have experienced enormous difficulties in surviving, which limits their ability to develop.

**Keywords:** performance, profitability, sales productivity, value productivity, value-added rate, investment, debt structure.

### Résumé

Ce papier a pour objet d'étudier un groupe de PME de la ville d'Oran afin de tirer les principales lacunes et difficultés pour faire face à la concurrence locale et internationale, en analysant l'évolution des ratios de performance, à savoir la productivité de la valeur, la productivité des ventes, le taux de valeur ajoutée, le taux d'investissement, et la structure de la dette. Ces PME ont cependant éprouvé d'énormes difficultés à survivre, c'est ce qui limite leur capacité de développement.

**Mots clés :** performance, rentabilité, Productivité des ventes, productivité de la valeur, taux de valeur ajoutée, investissement, structure de la dette.

### ملخص

يهدف هذا العمل إلى دراسة مجموعة من المؤسسات الصغيرة والمتوسطة في مدينة وهران من أجل رسم الثغرات والصعوبات الرئيسية لمواجهة المنافسة المحلية والدولية، من خلال تحليل تطور نسب الأداء، أي إنتاجية القيمة وإنتاجية المبيعات ومعدل القيمة المضافة ومعدل الاستثمار وهيكل الديون. إلا أن هذه الشركات الصغيرة والمتوسطة واجهت صعوبات هائلة في البقاء، مما يحد من قدرتها على التطور.

**الكلمات الرئيسية:** الأداء، الربحية، إنتاجية المبيعات، إنتاجية القيمة، معدل القيمة المضافة، الاستثمار، هيكل الديون

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## **Introduction**

The question of "Performance" has become an imperative for the survival of firms, as well as a response to the demands of perspectives crossed at the heart of the functioning of the economy, as well as more to the structural changes that transform the economic regime.

To this end, our anonymous empirical study is based on a sample of 64 SMEs in the city of Oran in the "manufacturing industries" sector. The objective of this work is then to analyze the financial and economic situation of each firm in the sample for the period from 2008 to 2012, in terms of calculated performance indicators (sales productivity, productivity of value, rate of return), value added, investment, debt structure).

### **1. The notion "Performance": Some basic definitions:**

The "Performance" concept remains a topical issue for any management team, looking for tools to gain a more global view of their company or even a business sector. We will propose in this framework the main definitions summarized by the authors Venkatraman and Ramanujam, [1986], Louis Raymond, [2000], Kueng, [2000]), Plauchu. V, [2006]:

According to Plauchu. V, [2006], "the notion of performance, always implies more or less a comparison with a competitor: it belongs to the language of the competition. We are efficient compared to someone, a technique is performance that a other ".

Thus, Louis Raymond, [2000] insists on the aspect of measurement, considering that: "... The definition of the performance will rest among other things on the systems of measurement of organizational performance currently used by the world-class companies: eg "balanced scorecard") (Kueng, [2000]), the concept of meta-organizational performance (network enterprise) (Jacob, Julien and Raymond, [1997]), as well as approaches based on benchmarking benchmarking and exemplarity "best practices" (St-Pierre, Raymond and Andriambeloson, [2001]) ".

### **2. The empirical interpretation of the performance of the SMEs surveyed**

#### **2.1. Data sources**

In fact, the table below deals with a detailed presentation of the 64 SMEs surveyed, the manufacturing sector by industry, and this during the five years [2008], [2009], [2010], [2011], and [2012]:

**Table (1.): The distribution of the 64 SMEs surveyed in the "Manufacturing industries" sector by main activity**

Secteur d'activité	Nombre de PME
<b>Industries manufacturières</b>	<b>64</b>
1. food industry	17
2. Construction materials	15
3. Chemistry & Plastics and Pharmacy	14
4. ISMMEE	6
5. Wood & paper industry	5
6. Textiles	5
7. Leather, Skins & Shoes	2
<b>Total</b>	<b>64</b>

**Source:** Personal confection.

With this in mind, we have been able to collect the necessary data from these companies to calculate the list of performance variables for each company in our sample. Indeed, these indicators are as follows:

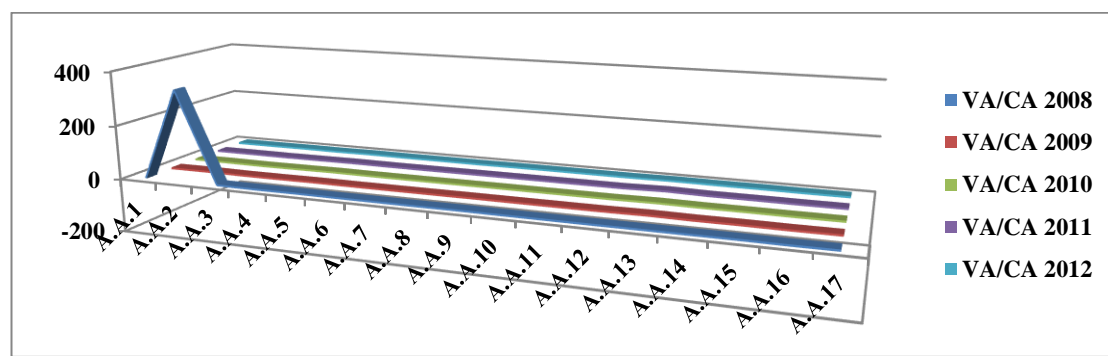
Sales Productivity, Value Productivity, Value Added Rate, Investment, and Debt Structure.

## 2.2. Analysis of the indicators

### 2.2.1. Value Added Rate Analysis

#### A. The Food Sector

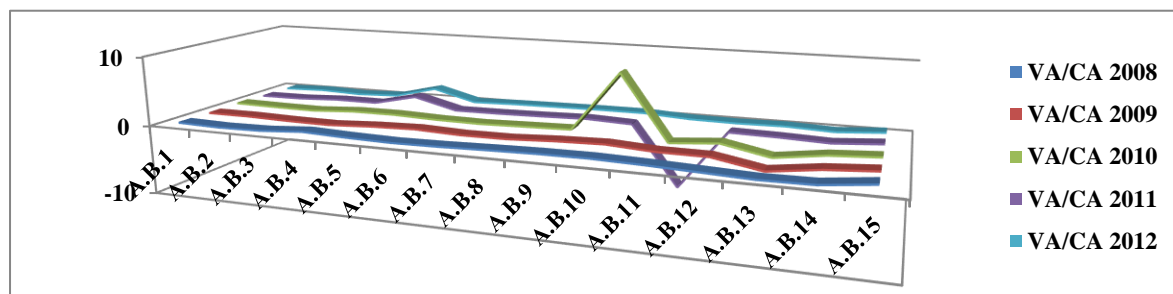
**Figure (1.):** Evolution of the value added rate of activating SMEs in the food sector (A.A.)



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### B. The "Building Materials" Sector

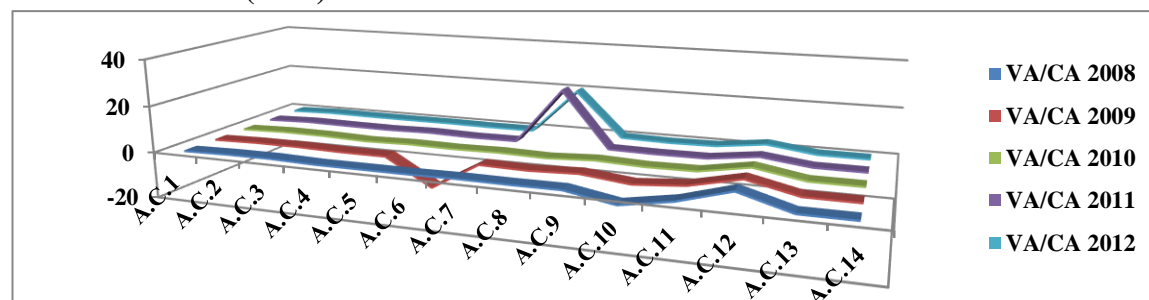
**Figure (2.):** Evolution of the Value Added Rate of Activating SMEs in the "Building Materials (A.B.)" Sector



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### C. The sector "Chemistry, Plastics & Pharmacy"

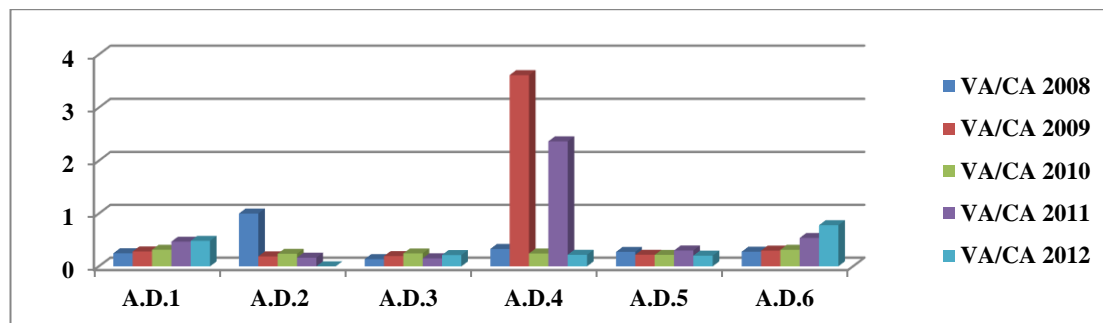
**Figure (3.):** Evolution of the value added rate of activating SMEs in the "Chemicals, Plastics & Pharmaceuticals (A.C.)" sector



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### D. The sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME)"

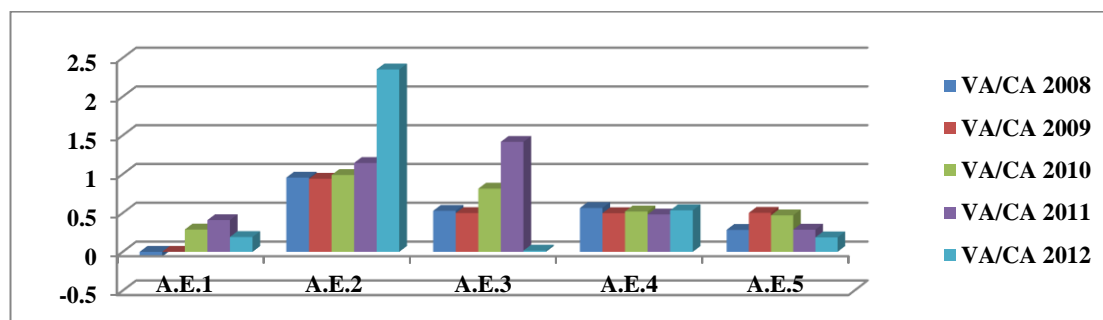
**Figure (4.):** Evolution of the value-added rate of activating SMEs in the sector of Steel, Metallic, Mechanical and Electronic Industries "ISMME" (A.D.)



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### E. The Wood & Paper Sector

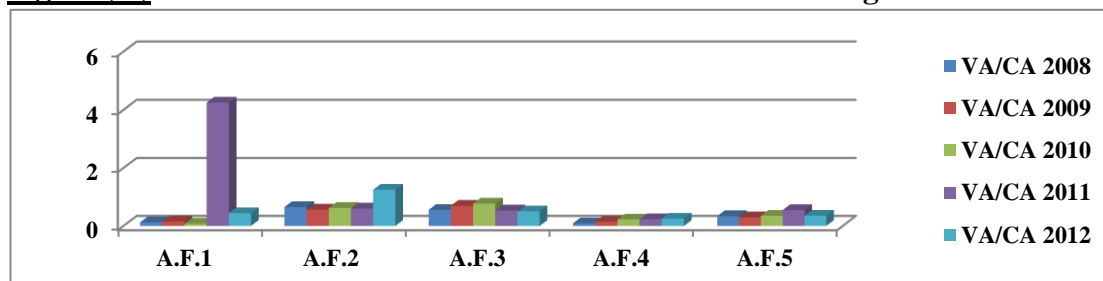
**Figure (5.):** Evolution of the value added rate of activating SMEs in the "Wood & Paper (A.E.)" sector



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### F. The Textile Sector

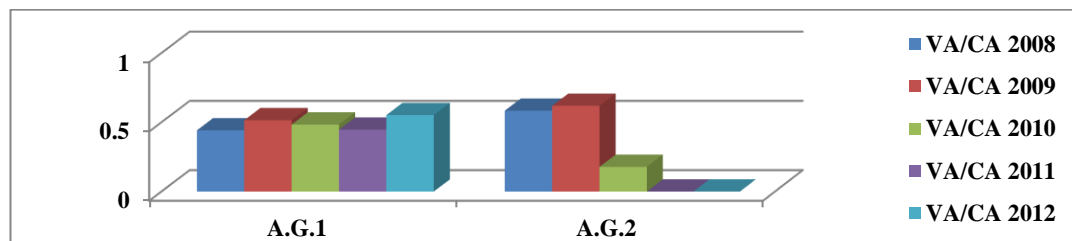
**Figure (6.):** Evolution of the value added rate of SME activating in the sector "Textile (A.F.)"



**Source:** Our calculations from the Company's Results Tables (T.C.R).

## F. The Textile Sector

**Figure (6.):** Evolution of the value added rate of SME activating in the sector "Textile (A.F.)"



**Source:** Our calculations from the Company's Results Tables (T.C.R).

The value-added rate represents the ratio between the added value created by the firm and its turnover. This indicator has positive overall rates for all the sectors of activity during the five fiscal years studied: [2008 - 2009 - 2010 - 2011- 2012], ie respectively; 4.545, 0.254, 0.484, and 0.731, and 0.681. In the food sector, this performance indicator thus recorded positive ratios, and this during the five financial years, of which it exceeded "20, 19" as an average calculated in relation to all the SMEs surveyed (17 companies). in 2008, and this was the result of a value-added rate of 339, for the company (AA2.).

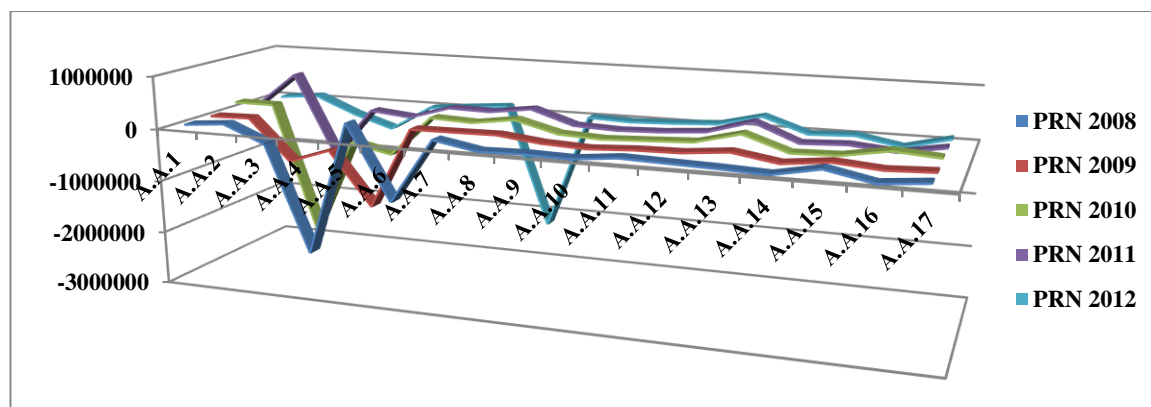
The Building Materials sector thus posted a positive value-added rate in 2008, 2009, 2010 and 2012, namely "0.39", "0.30", "0.91" and "0.49", respectively. . Then, in 2011, this indicator reported an average of (-0.03) explained by the weakness of the company (A.B.11.). The Chemicals, Plastics & Pharmaceuticals sector recorded positive rates in 2008, 2010, 2011, and 2012, as well as a negative ratio in 2009 (-0.39) as a calculated average, explained by the company's weakness. (AC6.) And (AC10.).

The sector of "Steel, Metallic, Mechanical and Electronic Industries (ISMME)", "Wood & Paper", and the "Textile" sector, as well as Leather, skins & shoes, have indeed recorded a positive value added rate during the five exercises.

### 2.2.2. Value Productivity Analysis

#### A. The Food Sector

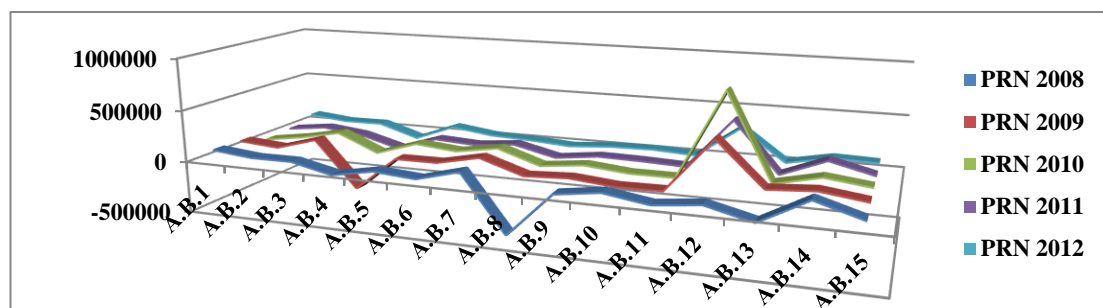
**Figure (8.):** Evolution Productivity of the value of activating SMEs in the food sector (A.A.)



**Source:** Our calculations from the balance sheets of companies.

## B. The "Building Materials" Sector

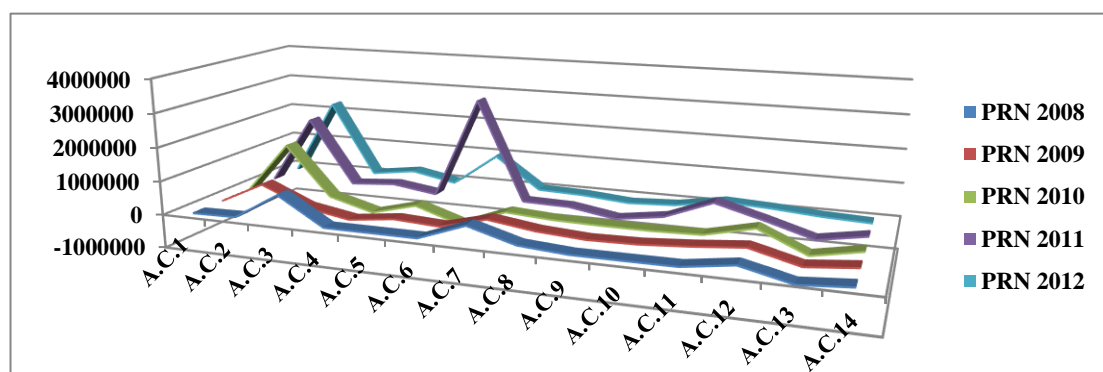
**Figure (9.):** Evolution Productivity of the value of activating SMEs in the "Building Materials (A.B.)" sector



**Source:** Our calculations from the balance sheets of companies.

## C. The sector "Chemistry, Plastics & Pharmacy"

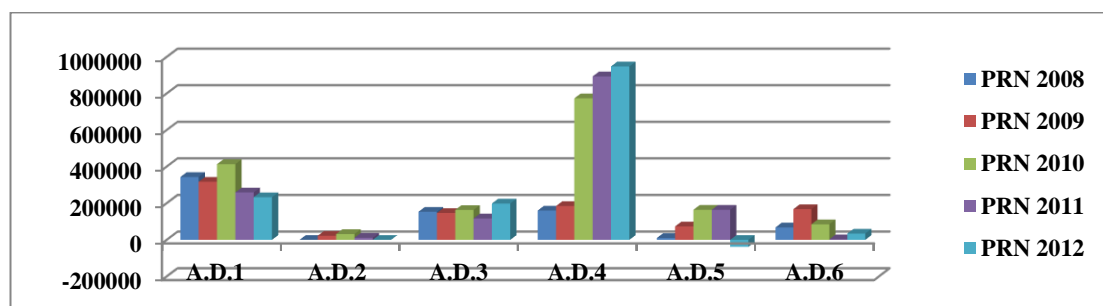
**Figure (10.):** Evolution of the value added rate Productivity of the value of activating SMEs in the sector "Chemicals, Plastics & Pharmaceuticals (A.C.)"



**Source:** Our calculations from the balance sheets of companies.

## D. The sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME)"

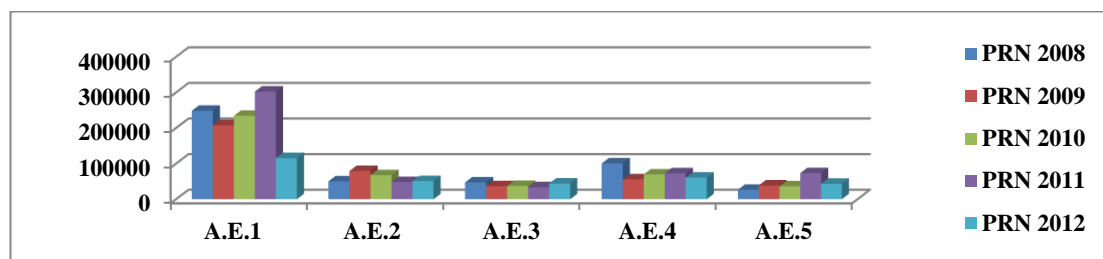
**Figure (11.):** Evolution Productivity of the value of activating SMEs in the sector of Steel, Metallic, Mechanical and Electronic Industries "ISMME" (A.D.)



**Source:** Our calculations from the balance sheets of companies.

## E. The Wood & Paper Sector

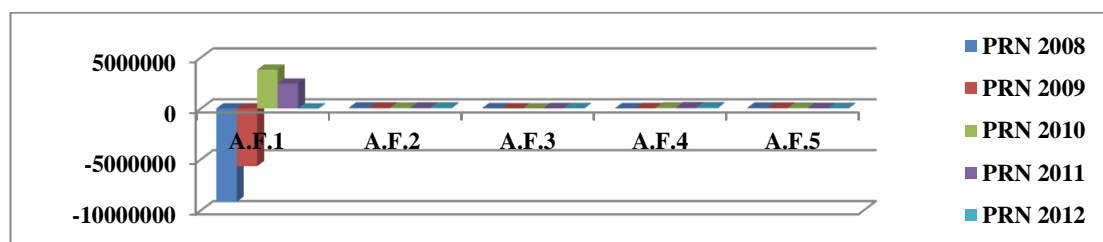
**Figure (12.):** Developing Productivity Value of Activating SMEs in the "Wood & Paper (A.E.)" Sector



**Source:** Our calculations from the balance sheets of companies.

## E. The Wood & Paper Sector

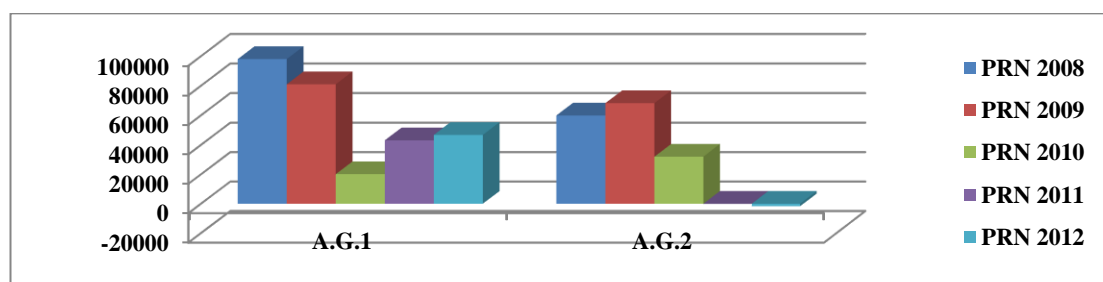
**Figure (12.):** Developing Productivity Value of Activating SMEs in the "Wood & Paper (A.E.)" Sector



**Source:** Our calculations from the balance sheets of companies.

## G. The sector "Cook, Skin & Shoes"

**Figure (14.):** Developing Productivity Value of Activating SMEs in the "Cook, Skins & Shoes (A.G.)" Sector



**Source:** Our calculations from the balance sheets of companies.

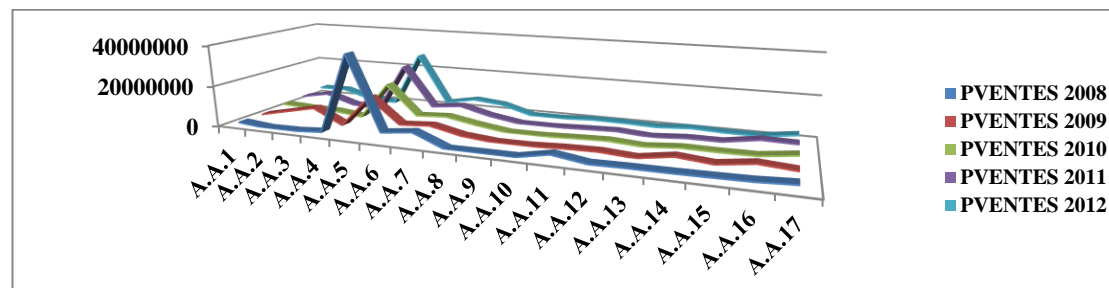
Value productivity is the ratio of the net result achieved by the firm to the number of employees. This indicator recorded an overall change between 2008 and 2012, respectively (-143,362, 688) and (229,340, 850), as calculated averages. In fact, the Food sector recorded negative rates in [2008], [2009], [2010], and [2012], explained by the weakness of a few loss-making companies (AA3.), (AA4.), (AA 6.), (AA10.), And (AA16.).

The Building Materials sector, the "Steel, Metal, Mechanical and Electronic Industries (ISMME)" sector, and the "Wood & Paper" sector, the Chemicals, Plastics & Pharmaceuticals sector, as well as the Leather, skins & shoes sector , have, indeed, recorded a productivity of the positive value during the five study periods [2008-2009-2010-2011-2012]. The "Textile" sector reported a negative value productivity in 2008, and 2009, and explained by the weakness of the company (A.F.1.).

### 2.2.3. Sales Productivity Analysis

#### A. The Food Sector

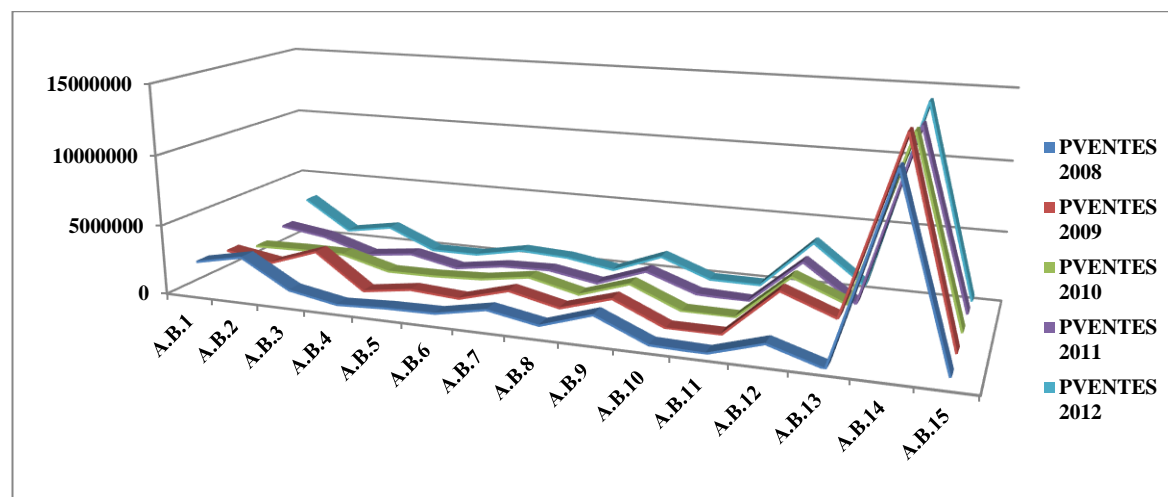
**Figure (15.):** Evolution of sales productivity of SMEs activating in the food sector (A.A.)



**Source:** Our calculations from the Company's Results Tables (T.C.R).

#### B. The "Building Materials" Sector

**Figure (16.):** Evolution of sales productivity of SMEs activating in the "Building Materials (A.B.)" sector

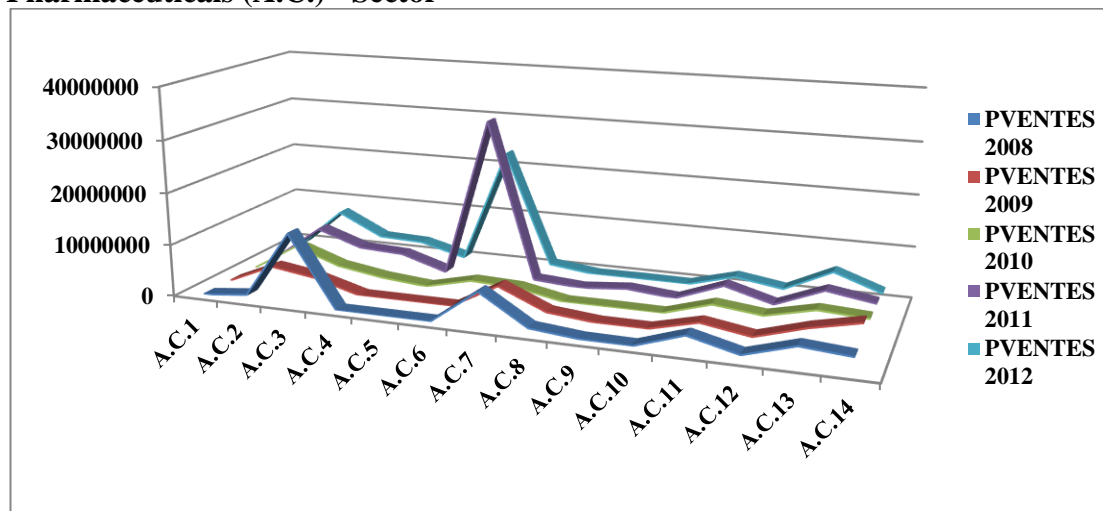


**Source:** Our calculations from the Company's Results Tables (T.C.R).



### C. The sector "Chemistry, Plastics & Pharmacy"

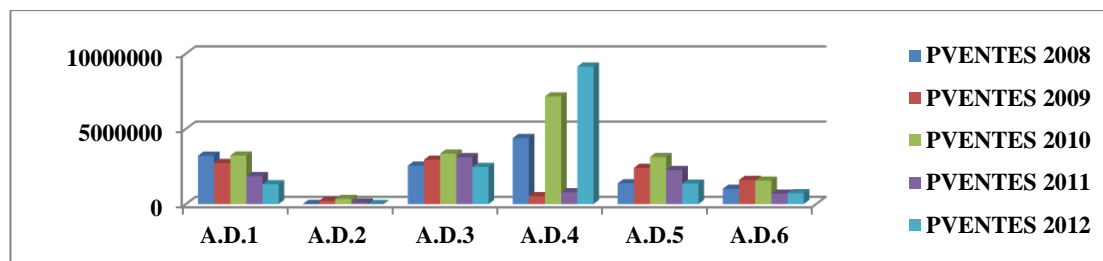
**Figure (17.):** Evolution of Sales Productivity of Promising SMEs in the "Chemicals, Plastics & Pharmaceuticals (A.C.)" Sector



**Source:** Our calculations from the Company's Results Tables (T.C.R).

### D. The sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME)"

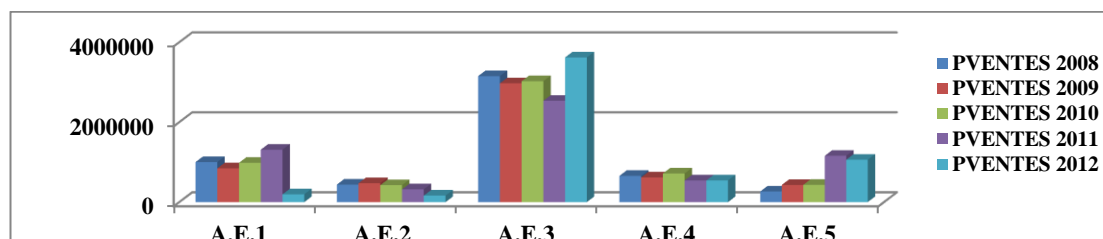
**Figure (18.):** Evolution of the sales productivity of SMEs activating in the sector of Steel, Metallic, Mechanical and Electronic Industries "ISMME" (A.D.)



**Source:** Our calculations from the Company's Results Tables (T.C.R).

### E. The Wood & Paper Sector

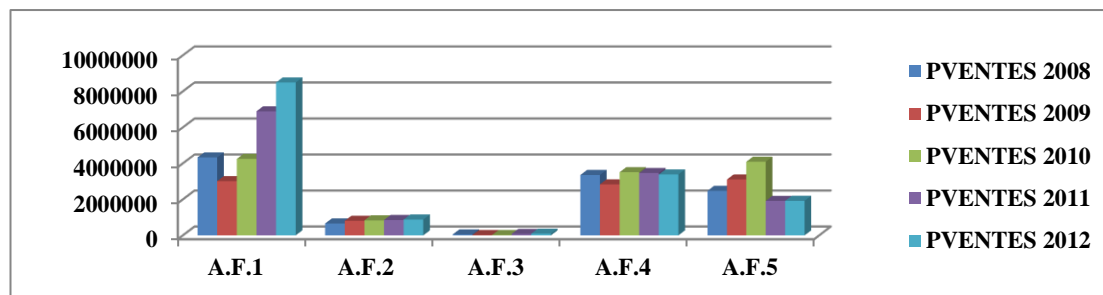
**Figure (19.):** Evolution of sales productivity of SME activators in the "Wood & Paper (A.E.)" sector



**Source:** Our calculations from the Company's Results Tables (T.C.R).

## F. The Textile Sector

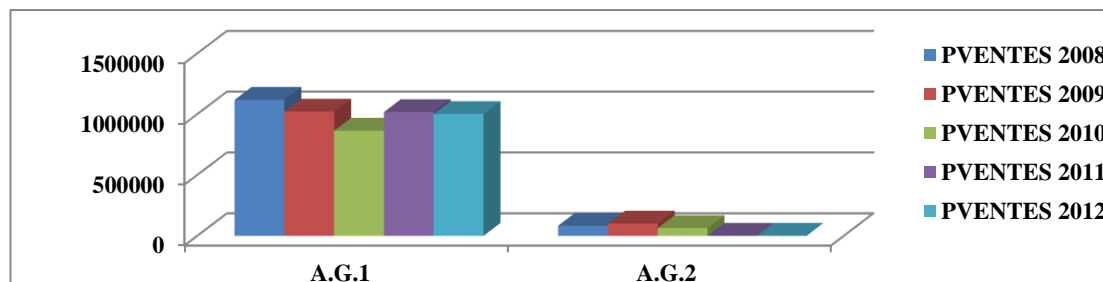
**Figure (20.):** Evolution of sales productivity of SMEs activating in the "Textile (A.F.)" sector



**Source:** Our calculations from the Company's Results Tables (T.C.R.).

## G. The sector "Cook, Skin & Shoes"

**Figure (21.):** Evolution of sales productivity of SME activating in the sector "Cooking, Skins & Shoes (A.G.)"



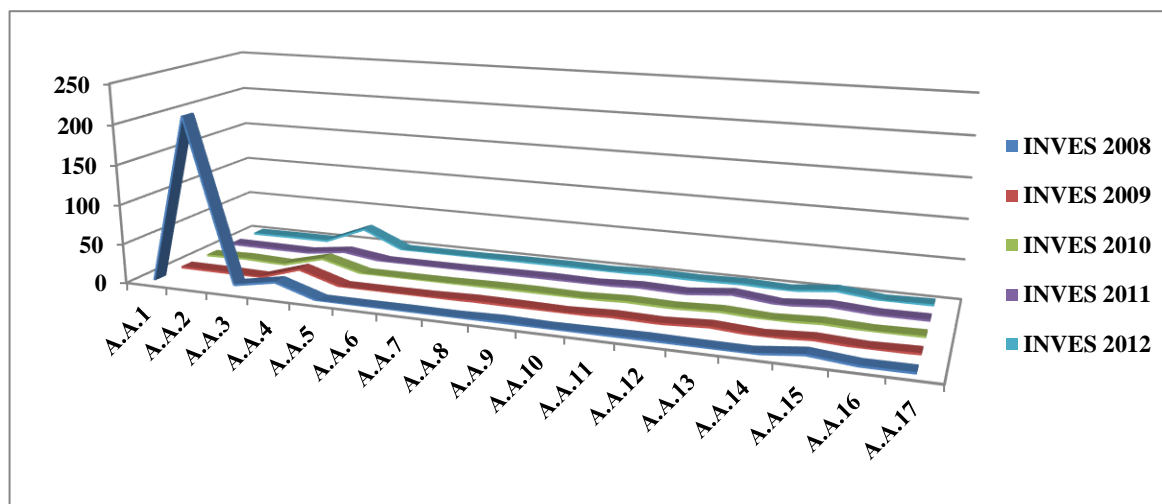
**Source:** Our calculations from the Company's Results Tables (T.C.R.).

Sales productivity is a performance indicator that represents the ratio between turnover and the number of employees. It should be noted in this respect that all business sectors recorded positive sales productivity, with the sectors, the Textile sector and the Wood & Paper sector recording no zero ratio; it is what expresses that sales / employment ratio is important. The food sector recorded a slight decrease between 2008 and 2012. In addition, the Chemicals, Plastics & Pharmaceuticals sector recorded a rise in sales productivity during the period [2008 - 2012], by reporting zero rates compared to a few companies; (A.C.1.), (A.C.4.), (A.C.5.), (A.C.6.), and (A.C.10.).

### 2.2.4. Analysis of investment expenditure

#### A. The Food Sector

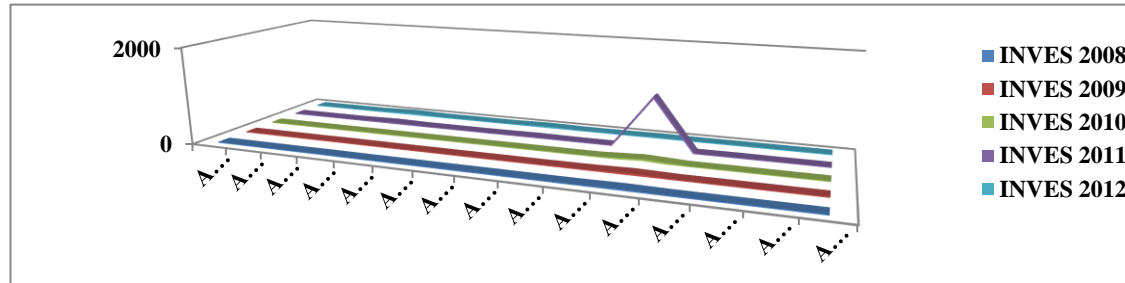
**Figure (22.):** Evolution of SME Investment Expenditures Activating in the Food (A.A.) Sector



**Source :** Nos calculs à partir des bilans et des Tableaux de Comptes des Résultats (T.C.R) des entreprises.

## B. The "Building Materials" Sector

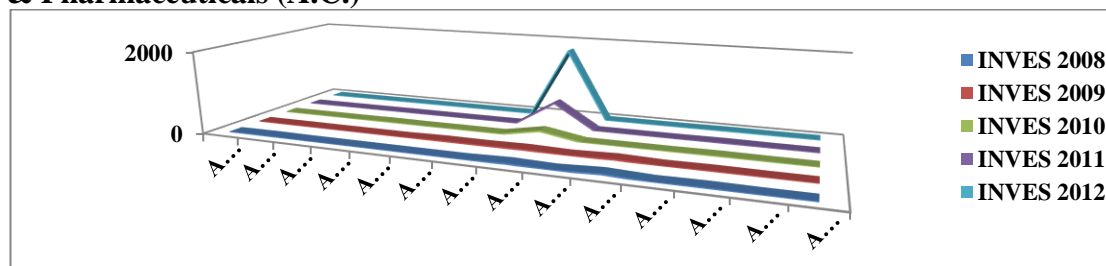
**Figure (23.):** Evolution of Investment Expenses of SME Activating in the "Building Materials (A.B.)" Sector



**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

## C. The sector "Chemistry, Plastics & Pharmacy"

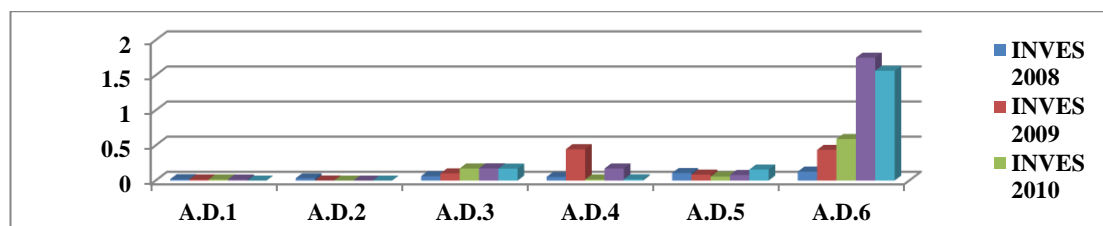
**Figure (24.):** Change in SME investment spending activating in the sector "Chemicals, Plastics & Pharmaceuticals (A.C.)"



**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

#### D. The sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME)"

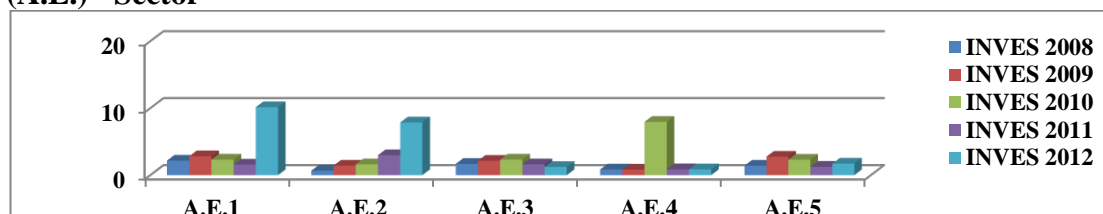
**Figure (25.):** Evolution of SME Investment Expenses Activating in the Sector of Steel, Metallic, Mechanical and Electronic Industries "ISMME" (A.D.)



**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

#### E. The Wood & Paper Sector

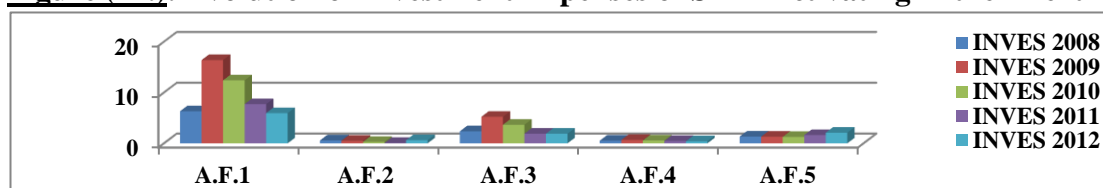
**Figure (26.):** Evolution of Investment Expenditures of SMEs Activating in the "Wood & Paper (A.E.)" Sector



**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

#### F. The Textile Sector

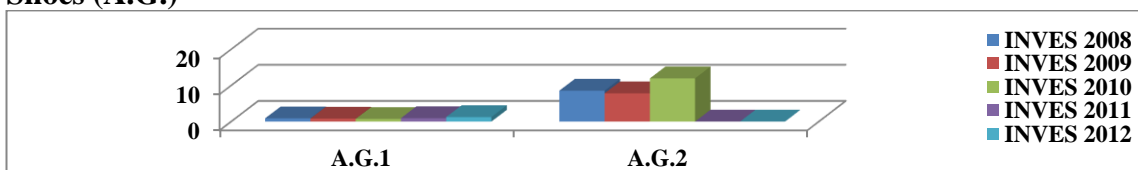
**Figure (27.):** Evolution of Investment Expenses of SME Activating in the "Textile (A.F.)" Sector



**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

#### G. The sector "Cook, Skin & Shoes"

**Figure (28.):** Evolution of SME Investment Expenses Activating in the Sector "Cooking, Skins & Shoes (A.G.)"

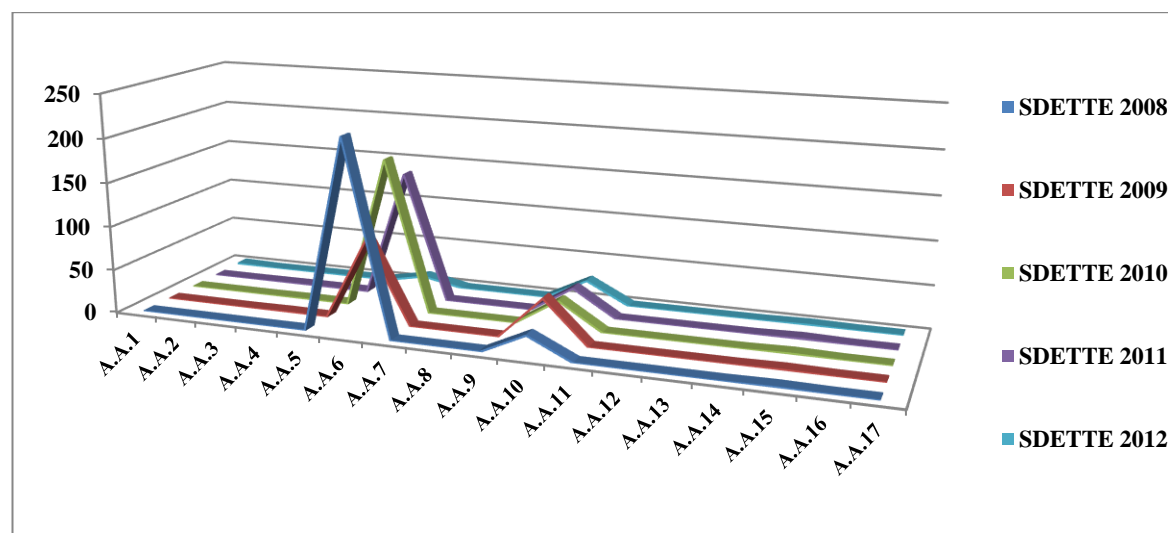


**Source:** Our calculations from the balance sheets and the Tables of Accounts of the Results (T.C.R) of the companies.

Firms have reacted strongly to increase the level of investment as this indicator has increased. The food, construction materials, chemicals, plastics & pharmaceuticals, Textile, and Wood & Paper sectors recorded ratios above 1, which indicates the superior level of investment by compared to the turnover achieved.

#### 2.2.4. Debt Structure Analysis

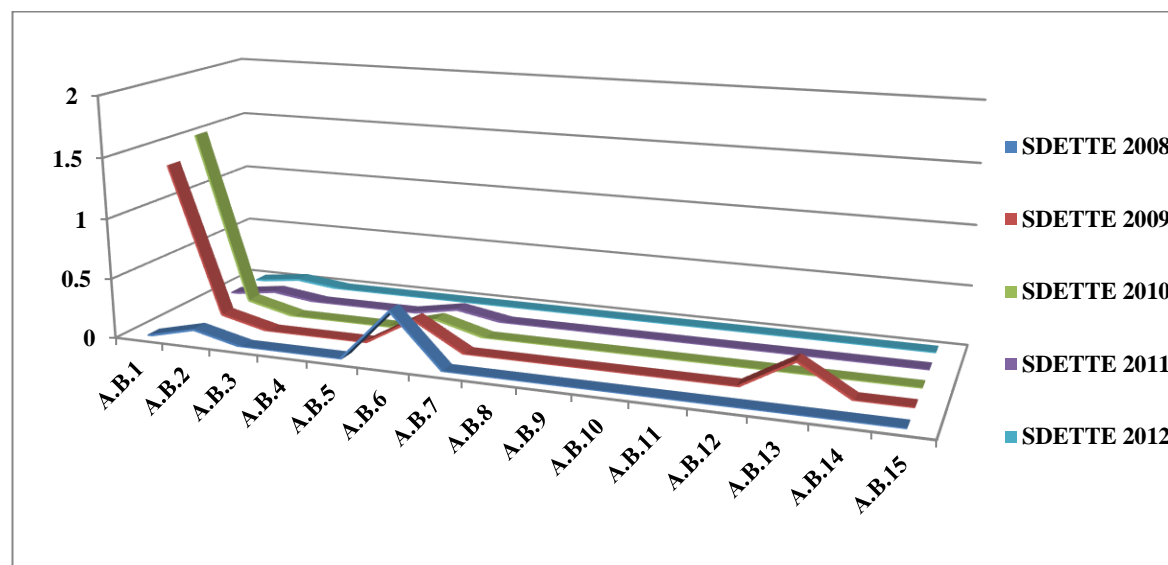
**Figure (29.):** Evolution of the Debt Structure of SMEs activating in the food sector (A.A.)



**Source:** Our calculations from the balance sheets of companies.

#### B. The "Building Materials" Sector

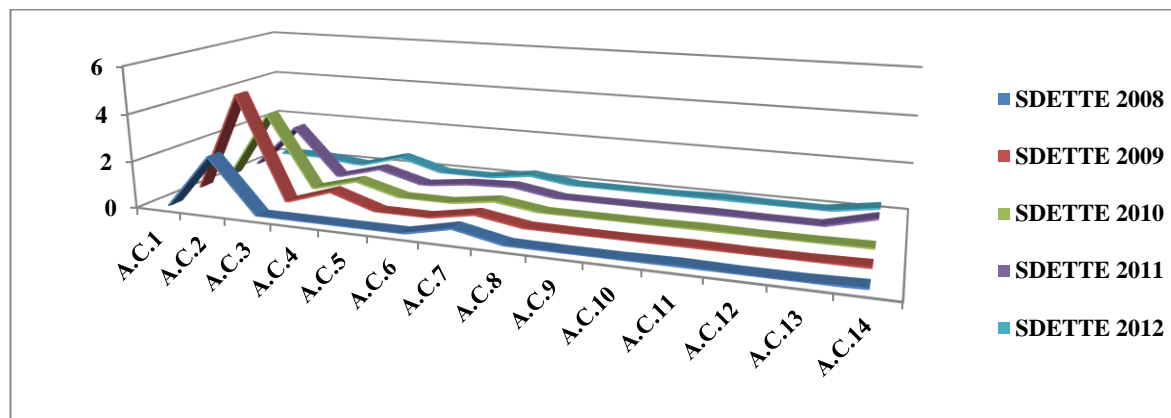
**Figure (30.):** Evolution of the Debt Structure of Promoting SMEs in the "Building Materials (A.B.)" Sector



**Source:** Our calculations from the balance sheets of companies.

### C. The sector "Chemistry, Plastics & Pharmacy"

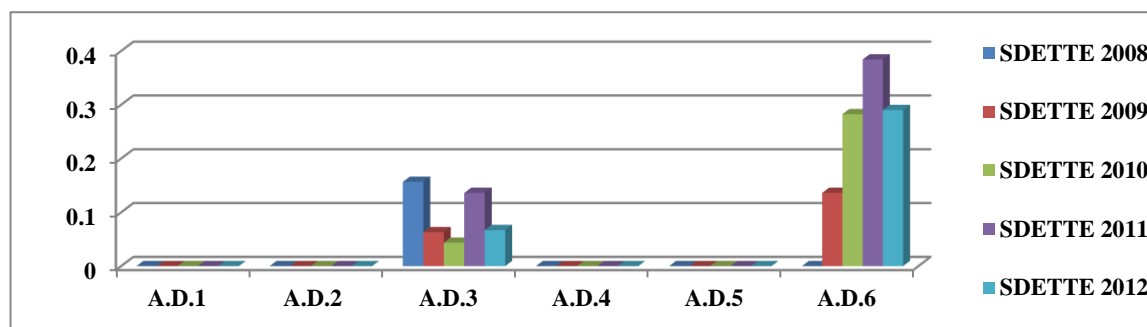
**Figure (31):** Evolution of the Debt Structure of Promoting SMEs in the "Chemicals, Plastics & Pharmaceuticals (A.C.)" Sector



**Source:** Our calculations from the balance sheets of companies.

### D. The sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME)"

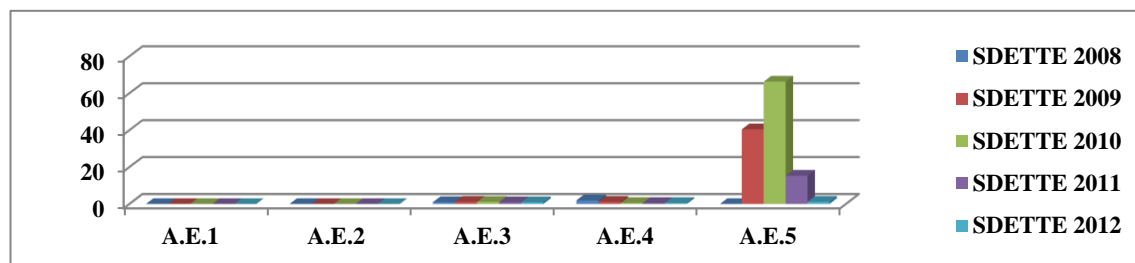
**Figure (32.):** Evolution of the Debt Structure of SMEs activating in the sector of Steel, Metallic, Mechanical and Electronic Industries "ISMME" (A.D.)



**Source:** Our calculations from the balance sheets of companies.

### E. The Wood & Paper Sector

**Figure (33.):** Evolution of the Debt Structure of SMEs activating in the "Wood & Wood" sector



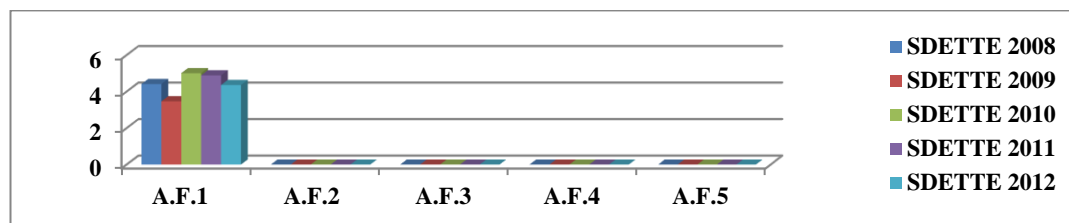
sheets of companies.

**Source:**

Our calculations from the balance

## F. The Textile Sector

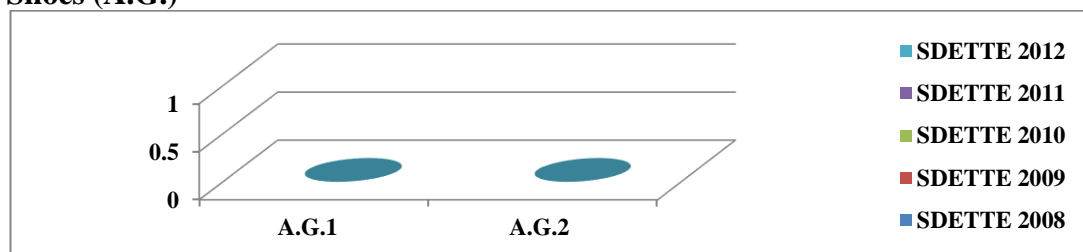
**Figure (34.):** Evolution of the Debt Structure of SMEs activating in the "Textile (A.F.)" sector



**Source:** Our calculations from the balance sheets of companies.

## G. The sector "Cook, Skin & Shoes"

**Figure (35.):** Evolution of the Debt Structure of SME activating in the sector "Cooking, Skins & Shoes (A.G.)"



**Source:** Our calculations from the balance sheets of companies.

The debt structure expresses the relationship between long-term debt and short-term debt. Long-term debt includes all third-party borrowings maturing in more than one year. In fact, these debts consist of loans (including bank overdrafts or bank overdrafts). Short-term debt is then the short-term resource for short-term employment (assets less than one year old). The sector "Cooking, skins & shoes", as well as almost 84% of the total companies active in the import-export sector, and almost 84% of the SMEs in the "Textile" sector, show zero rates during the five years studied, expressing thus the non-existence of long-term debts. More than 73% of SMEs activating in the building materials sector, as well as more than 50% of SMEs activating in the BTPH sector, followed the same logic. This sector has, in fact, registered a significant drop between 2008 and 2012, posting respectively 0.42 and 0.12 as calculated averages.

The food sector, in turn, recorded a remarkable decrease between 2008 and 2012, namely "14.34" and "2.24" respectively, with an overall average over the five years reaching "9.56", thus expressing the superior long-term debt over short-term debt. The Chemicals, Plastics & Pharmaceuticals sector reported 0.27 as the overall average calculated, recording a decrease between the two years 2008 and 2012. In addition, the sector "Steel, Metallic, Mechanical and Electronic Industries (ISMME) realized the lowest average, 0.051, thus recording similar rates during the five years studied.

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In this sense, it is possible to affirm probably the existence of family debts thus financing the financial operations of companies, and more particularly those relating to the acquisition of investments.

### **Conclusion**

The industrial enterprises, which remain the weakest (with all branches combined) during the two years analyzed, suffer in spite of multiple attempts by the public authorities of the current industrial zones which are in a state of quasi-abandonment. And "for many reasons, they offer none of the services expected of them, and remain, in practice, empty shells delivered to themselves and without real means (neither legal nor financial) to facilitate the daily management companies located in their precincts and, even less, to serve as a basis for an effective industrial promotion policy "(IFPE, [2011]). These companies are characterized by low "RFP" and commercial profitability, medium value-added rates, as well as low technical, commercial and value productivities, as well as very high debt ratios that exceed 70% for the majority of companies. , and reaches up to 98% for a few companies, particularly those in the "Chemicals, Plastics & Pharmaceuticals" and "Building Materials" branches.

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