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# PSG Financial statements

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April 2021



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## Introduction

Being big fans of Paris Saint Germain since our childhood, we wanted to analyze the company's financial evolution since 2006 with python. Furthermore, we wanted to see how the arrival of the new investors brought PSG to another dimension on every field. Indeed, PSG has been developing in every range like marketing, digital or even international communication.

In February 2020, PSG managed to become the first financial power in the football business. Through this study, we would like to retrace the evolution of PSG's finance and explain how PSG have built a self sustaining financial architecture. Furthermore, we will predict the evolution of these financial statements for the next years. Indeed we'll fit the curve which will show how the PSG will evolve in a middle term.

First in this article, we will set the lexicon of the financial technical terms in order to get a good comprehension of the second part. Then we will match the historic major facts with the financial statements variations and we will visualize plots to understand all parts of the balance sheet. Finally we'll also fit a curve which could help us predicting the financial statements evolution in the near future.

## 1 Financial terms

Financial statements are written records that convey the business activities and the financial performance of a company. Financial statements are often audited by government agencies, accountants, firms for many purposes like for instance : for tax evaluation, for financing, or for investing. The financial statements can be used by investors and market analysts to evaluate a company's financial health and potential earnings.

Financial statements include :

- Income Statement : it measures how well a company generates cash to pay its debt obligations, fund its operating expenses, and fund investments.
- Cash flow statement : primarily focuses on a company's revenues and expenses during a particular period. Once expenses are subtracted from revenues, the statement produces a company's profit figure called net income.
- Balance Sheet : provides an overview of assets, liabilities, and stockholders' equity as a snapshot in time.



Investors and financial analysts rely on financial data to analyze the performance of a company and make predictions about its future direction of the company's stock price. One of the most important resources of reliable and audited financial data is the annual report, which contains the firm's financial statements. The financial statements are used by investors, market analysts, and creditors to evaluate a company's financial health and potential earnings. The three major financial statement reports are the balance sheet, income statement, and statement of cash flows. We scrapped PSG's financial statements from 2006 to 2020 in order to get data to work on.

## 1.1 Assets

### 1.1.1 Long term assets

Long-term assets also named as non-current assets (to contrast with the second type of assets), are assets that will be used by the company during many years (at least one year). In the balance sheet, they are recorded as their purchased price and not their current value.

A long-term asset can belongs to three kind of assets :

- *Intangible asset* which is non-physical assets such as patent, brand, software, or business goodwill. Those assets are subject to depreciation : their value can decreases with time.
- *Fixed asset* which is a physical asset useful for the company such as land, buildings, equipment. For instance in our case, a fixed asset could be a stadium or a training center.
- *Investments* named as financial durable assets because they will last at least one year (securities, deposits, shares).

### 1.1.2 Current assets

Then we have current assets which are all assets used by a company to make standard business operations. It is common to say that a current asset is conveniently sold, used or exhausted with one year. For current assets we have those categories :

- *Inventories* are the company's current goods available for sale : clothes or jersey for instance.
- *Account Receivable* is money that customers or companies owned to the current company due to delivered goods or services. They are created when the current company lets buyer purchase on credit.



- *Liquid Assets* are cash, cash equivalents and others which can be easily and quickly converted into cash.

## 1.2 Liabilities

### 1.2.1 Shareholders' equity

*Shareholders' equity*, or business net worth, is the net asset for a business owner : it is equal to company's total assets minus its total liabilities.

### 1.2.2 Provisions

Provisions can be defined as assets set aside by the company to anticipated potential future losses. Provisions are divided in three categories :

- provisions for risk which are receivable that customer might not paid
- provisions for penalties
- provisions for charges which are expected expenses (wages, prepayments, interest, etc.)

### 1.2.3 Debts

Debts are all the sum of money the company owes to a customer, a company or an institution. In our dataset, there is three kind of debts :

- *Tax liability* : It is the total amount of tax (Income taxes, sales tax, and capital gains tax) you are responsible for paying to the taxman (taxing authority as Internal Revenue Service). Named fiscal debts in our data set.
- *Financial liabilities* : This is as credit card for an individual, the company can use "others' money" to its business-related activities and must refund when the liabilities become due.
- *Account payable* : It is the company's debt to its creditors and suppliers. It is often a short-term debt that the company manages to pay close to their due date to improve cash flow.

### 1.2.4 Adjustment account

Adjustment account is composed of two incomes types : Accrual income is when we deliver a good but do not received the payment yet. While deferred is when we received the payment for a good, we do not deliver yet.

In the Balance Sheet, if we put it with liabilities, it means we are currently doing unrealized gain while if we put it with assets, we are doing unrealized loss.



## 1.3 Balance sheet

A balance sheet is a financial statement that reports the company's assets and liabilities at a specific point in time, and provides a basis for computing rates of return and evaluating its capital structure. It is a financial statement that provides a snapshot of what a company owns and owes. It allows the company to have a clear view on its business and its current capital situation.

In the scrapped balance sheet, we have the following information about PSG club :

- *Sales Turnover* : It is the total amount of products or services sold by the company, over a given period of time - usually one year.
- *Value added* : A financial indicator that expresses a company's gross wealth creation or the increase in value generated with its current activities.
- *Gross Operating Profit* : The Gross Operating Profit (GOP) is used to visualize the profitability generated by the company with its simple production system : it does not take into account exceptional income, exceptional expenses, depreciation or the way the company finances its activity. A negative GOP means the company's economic activity is not profitable.
- *Operating Income* : The operating income measures the profitability of a company's business model. It is obtained by calculating the difference between operating revenues and operating expenses. Whereas GOP shows the company's cash flow, operating income shows its profitability after taking into account all expenses and deducting all charges.
- *Net income* : Is the profit remaining after all costs, debts and taxes have been subtracted from the operating income along the defined period.



## 2 PSG : Analysis of the fastest growing team value of the decade

In this part, we will match the PSG historic major facts in order to explain the financial statement's variations. We can't deny that PSG have built a self-sustaining football club that should be able to generate its own money and be a major player on the European stage for years to come. But the journey for PSG hasn't always been prosperous and successful. That transformation, has not come cheap, with millions of euros invested by the consortium headed by Nasser Al Khelaifi.

However PSG haven't just been investing, they also created a big and efficient source of income. The ultimate prize, however, the Champions League, has so far remained elusive, even if during summer 2020 the champions league seemed closer to PSG than ever. Who knows maybe PSG will fulfil his dream of lifting the most prestigious trophy in Europe.

Let's first adopt an overall vision of the assets evolution from 2006 to 2019. We can see that years between 2006 and 2011 were very tough for PSG whether sportingly and financially. When QSI bought the club in 2011, the capital injection made the financial statements take off as we can see below.

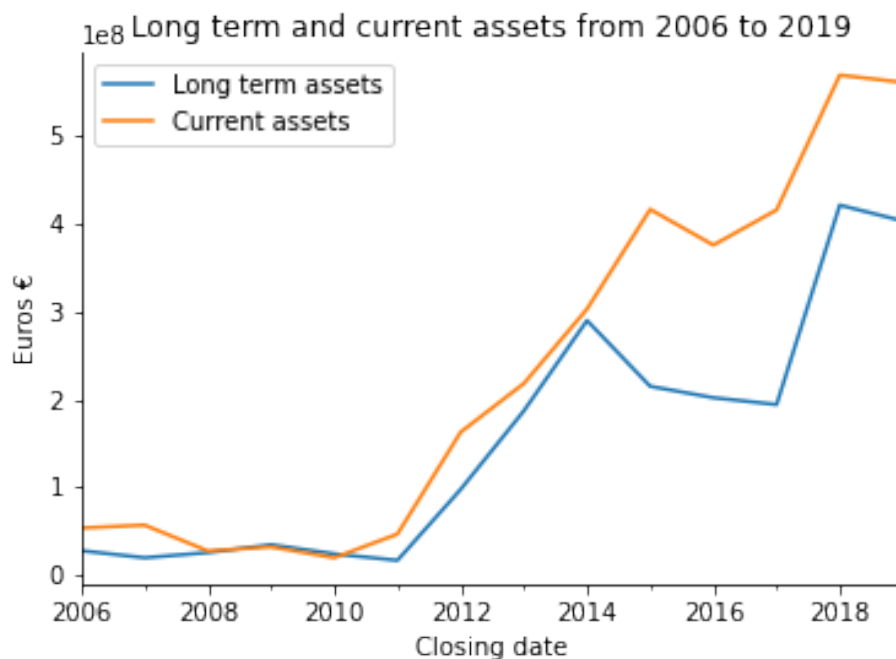


FIGURE 1: Long term and current assets from 2006 to 2019

## 2.1 Transfers

Stars like Cavani, Zlatan, Di Maria and Neymar have not come cheap for PSG, who are set to break the billion euro mark with Mbappe's future signing. Ever since the Qatar Investment Authority (QSI) began to bankroll Paris Saint-Germain, the club has gone from a middle of the road Ligue 1 challenger to one of Europe's elite clubs, reaching for the second time in a row semi finals of the champions league after beating the champion : Bayern München in April 2021.

This subsection will deal with PSG's balance sheet of transfers year by year since the beginning of the decade just before the arrival of the Qatari investors. We will see that the acquisition of a player has many advantages for a club, indeed a player has several functions like :

- playing and being a part of the team in order to bring good results
- to bring foreign fans
- to widen the mediatic coverage but also to sell more jerseys and bring sponsors.

### 2.1.1 Before QSI arrival in 2011 (Qatar Sport Investments)

One of the main success of the Colony Capital Era (1991-2011) was to bring the experienced captain Claude Makelele from Chelsea. He managed to bring a renewed dynamic to the PSG by being very invested by changing everything the club. He wanted to erase everything that could restrict the development of the club like the staff, the coach or even the players.



FIGURE 2: Claude Makelele, one of the main success of the Colony Capital Era

But we also have to highlight such players like Valdo, David Ginola, Mister George Weah,



Rai, Ronaldinho or Pauleta who were also main successes of that era. All these players are nowadays known as PSG legend as they did so much for the club.



FIGURE 3: Rai and Ronaldinho, the brazilian legacy

### 2.1.2 After QSI arrival in 2011 (Qatar Sport Investments)

- **2011-12 : -95.8 million € :**

The QIA revolution began in June 2011, when the group completed its acquisition of Paris Saint-Germain from previous owners, Canal + owners Colony Club. The spending spree started almost immediately with the arrival of stars like Javier Pastore, Blaise Matuidi and Kevin Gameiro. Thiago Motta arrived from Inter in January, pushing PSG's total outlay to just shy of 100M €.

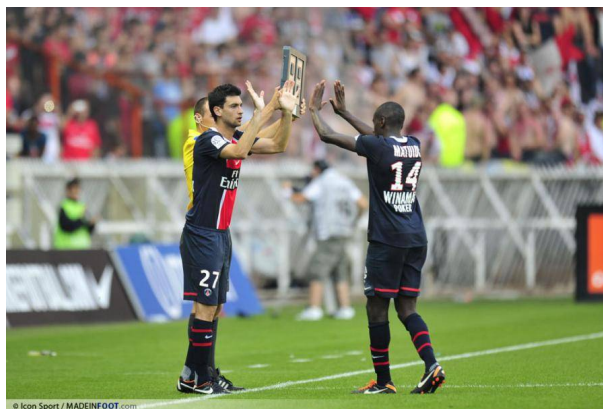
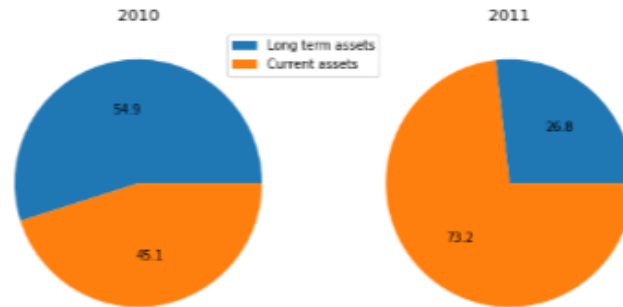


FIGURE 4: Javier Pastore and Blaise Matuidi, two of the main players of this first QSI season



On the plot above, we can see that the current assets between 2010 and 2011 had almost doubled which coincides with the arrival of QSI. Current assets represents the players who have a contract with PSG, it shows that the number of players in the club had significantly evolved.

- **2012-13 : -146.8 million €**

After finishing second in Ligue 1 to Montpellier in Al Khelaifi's debut season in the boardroom, the president upped the ante for 2012-13. This time PSG smashed the €100m mark on a series of high-profile signings, most prominent of which perhaps was Milan's enigmatic genius Zlatan Ibrahimovic to add goalscoring threat up front. Zlatan was joined by Milan team-mate Thiago Silva, while the raid on Serie A was completed by the arrivals of Ezequiel Lavezzi and Marco Verratti and Gregory Van der Wiel also joined from Ajax. The gamble paid off as PSG waltzed to the Ligue 1 title, although in the Champions League Carlo Ancelotti's men came unstuck in the quarters final at the hands of Barcelona without losing.



FIGURE 5: Thiago Silva and Zlatan Ibrahimovic, the captain and the vice captain of the 2012-13 season

Thiago Silva and Zlatan Ibrahimovic are the two first pillar of the parisian project. But the owners and scouts also thought about the future and decided to build a long term team by looking for talented youngsters. Marco Verratti has maybe been the best acquisition of the PSG since 2012 from every point of view whether it is sportingly or even financial profitable terms because he cost a little bit more than 10 million €. Since 2012, Marco Verratti has been an indispensable backbone element for the PSG squad.



FIGURE 6: Lucas and Marco Verratti, young talented hopes of the project

PSG also recruited the football legend : **David Beckham**. He was recruited at the end of his career at the age of 37, his recruitment permitted PSG to develop the international influence of the club. David Beckham retired of football at the expiry of his contract, PSG was the spice boy's last challenge. We have to remind that David Beckham is a recognised brand on his own. When Beckham went on a tour in China during the international break in March 2013, it was a PSG jersey that he exhibited. The number of jerseys sold, PSG and Nike, its supplier, do not communicate on it. Asked by Europe1.fr, Nike had this laconic answer : "we do not give any turnover". Admittedly, the streets of Paris were not invaded by Beckham shirts, but abroad, the story is undoubtedly quite different. Tourists in Paris, North American and Asian markets, PSG think global and that was a masterclass.



- **2013-14 : -109.4 million €**

Once again the Italian top flight proved a happy hunting ground for PSG. More than €94 million was spent on two new acquisitions alone, with Napoli star Edinson Cavani becoming the club's record signing upon arriving in a deal worth €63 million. Defender Marquinhos was snapped up from Roma, while Lille were persuaded to part with 20-year-old Lucas Digne. Part of 2013's spending, however, was offset by the sale of the "titi" Mamadou Sakho for more than €20m, who was formed by PSG in 2002 when he was only 12. He was also the PSG youngest captain at 17 years old. He went to Liverpool coached by Jürgen Klopp. And Sevilla grabbed the little-used Kevin Gameiro for a further 8m €.



FIGURE 7: Edinson Cavani and Marquinhos, the most expensive transfers of the summer 2013

- **2014-15 : -47.5 million €**

It was a quiet year for PSG on the transfer front, as just one player was signed by Laurent Blanc in the former France legend's second season at Parc des Princes. David Luiz arrived from Chelsea in a transfer just shy of €50m, but the Brazil defender failed to change PSG's fortunes on the biggest stage. While Ligue 1 was retained with ease the club once again came unstuck in the Champions League quarters, ironically against Luiz's former - and future - club who prevailed on away goals after losing the first leg 2-0. And this year PSG didn't manage to get more than 2.5 million € for selling players.



FIGURE 8: Serge Aurier and David Luiz



- **2015-16 : -93 million €**

Blanc stayed in the hotseat despite Champions League failure and was given another huge warchest for his latest crack at European glory. Manchester United winger Angel Di Maria was PSG's biggest signing, closing on Cavani's record in a 63M € move, while Monaco's Layvin Kurzawa and Toulouse defender Serge Aurier were also signed in a raid on the club's Ligue 1 rivals. The league itself was a foregone conclusion, won by an incredible 31 points; but in the Champions League the last eight once again proved a bridge too far.



FIGURE 9: Angel Di Maria, the best passer in PSG history

- **2016-17 : - 74 million €**

Unai Emery was brought in over the summer to replace Blanc, and the ex-Sevilla coach was given unprecedented funds to spend in order to take PSG to the next level. The likes of Julian Draxler, Giovanni Lo Celso, Jese and Grzegorz Krychowiak were signed, but PSG failed to impress in the coach's first season, losing out to Monaco in Ligue 1 and suffering 6-1 humiliation to Barcelona in the Champions League.



FIGURE 10: Julian Draxler, Giovanni Lo Celso and Goncalo Guedes

- **2017-18 : -139million €**

It was the summer in which PSG smashed all existing records. Brazil star Neymar became the world's most expensive signing in an incredible €222m move from Barcelona, while Kylian Mbappe will in turn become the priciest teenager on the planet when he completes a €180m permanent deal at the end of the current season. Those two transfers have helped PSG recover their place at the top of Ligue 1. It was the beginning of the relation between the brazilian and the young world cup winner.



FIGURE 11: Neymar and Kylian Mbappé : transfer record breakers

- **2018-19 : -113 million €**

It is the year PSG paid for Mbappé transfer fee to their main rival of the past years : AS Monaco. PSG also reinforced the midfield thanks to the argentinian Leandro Paredes who came from Zénit in Russia. Defensively, PSG recruited Kehrer, Bernat and also the legend world cup winner goalkeeper in 2006 : Gianluigi Buffon who came from Juventus for free. Thomas Tuchel wanted to get a second attack player, that's why he brought Choupo Moting that he knew from Germany with an irreproachable mentality. In order to remedy

the amounts spent, PSG had to seel many players from the younger teams (Adli, Ikoné, Edouard, Weah) but also young players that PSG developed with a huge potential like Guedes and Lo Celso but also a player who was there since the beginning of the QSI Era : Javier Pastore.



FIGURE 12: Choupo Moting and Paredes celebrating with the fans

- **2019-20 : +10 million €**

It is the first mercato during which PSG have a positive balance sheet, it means that PSG sold more than they bought. PSG recruited a lot in the defensive area : by buying two senegalese players : Abdou Diallo and Idrissa Gueye.



FIGURE 13: Abdou Diallo and Idrissa Gueye : Senegalese Teranga lions

But also players who have a lot of experience from big club : Ander Herrera and the goalkeeper who has won the most Champions League : Keylor Navas. They brought their



knowledge to the youngsters in the squad in order to create a good alchemy and to create binds between the players. This was a success because PSG managed to reach the Champions League Final this year.



FIGURE 14: The last Wall : Keylor Navas

- **2020-21 : -56 million €**

This summer was very short due to the pandemic and the Champions League Final in August, but this summer marked the legend's departure. Indeed Edinson Cavani the club all time best scorer and Thiago Silva, 8 years long captain left the craft by leaving pleasant memories to the fans. But these departures also introduce a new cycle. This season is also balanced by the new coach signing : Mauricio Pochettino who is back to PSG as a coach. The arrival of many players who are not the biggest names of the European football but serious warriors : like Moïse Kean, Danilo Pereira, Rafinha or Florenzi.



FIGURE 15: Mauro Icardi and Rafinha

### Transfers overview of the last decade

In this summary, we are going to visualise the evolution of the PSG's expenses and incomes during the mercatos. The expenses represent the amount of money spent to buy players. The incomes represent the amount of money received for the sale of players. In the plot below, we see that when QSI arrived in 2011, PSG immediately invested with enormous costs exceeding 100 million euros almost every year or even 200 million € in 2017 for the arrival of Neymar Jr and Mbappé. Furthermore the money collected for the sale of players has also increased from 2014 because PSG had to counter the UEFA's financial fair play. So they had to adapt and sell some good players. Moreover as we can see, the pandemic also affected PSG as we can see that during the 2020-2021 mercato, they got only 5 million € of income.

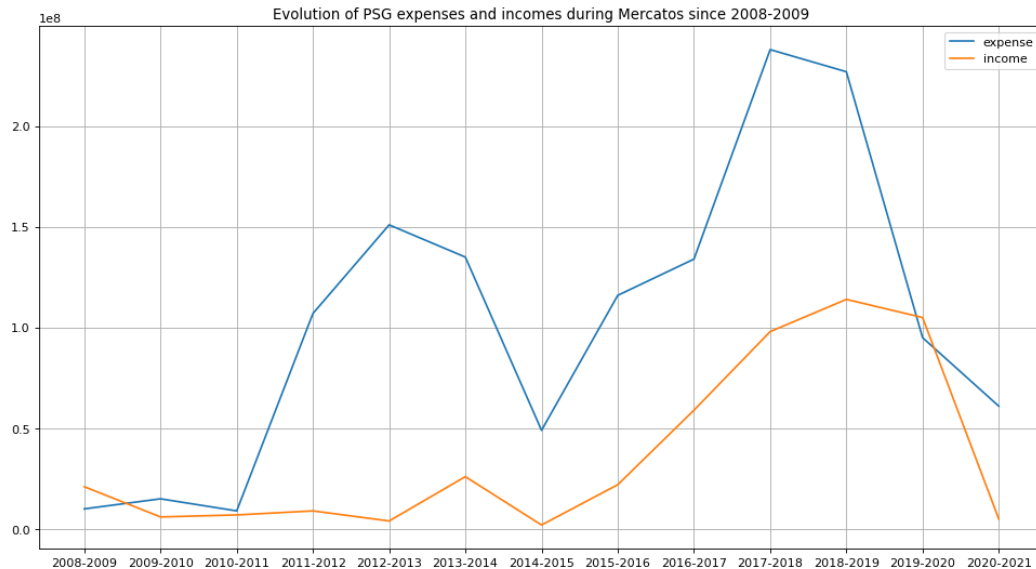


FIGURE 16: Evolution of PSG expenses and incomes during Mercatos since 2008-2009

The plot below shows the difference between the collected money and the expenses. We see that the balance is mostly under 0, so mercatos are rarely financial beneficial to PSG, that's why PSG focused on other source of income, for instance marketing.

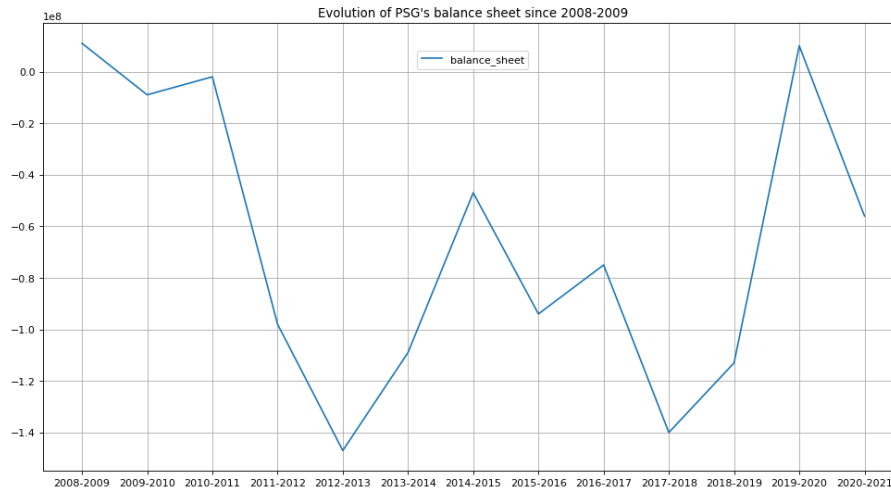
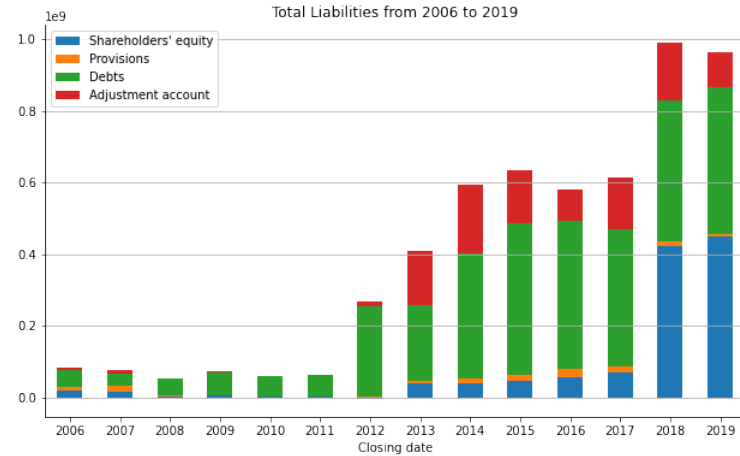
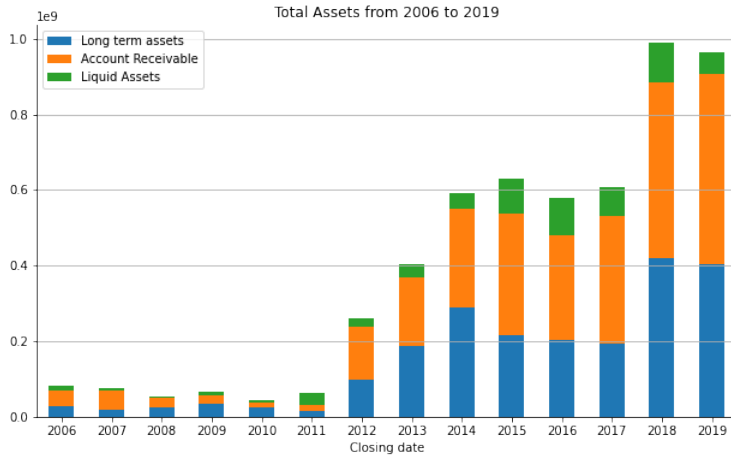


FIGURE 17: Evolution of PSG's balance sheet since 2008-2009

When PSG completed Mbappe's signing, Al Khelaifi and the Qatar Investment Authority's total spending exceeded the billion mark in the balance sheet. When the president first arrived he had set in place a five-year plan for the club which would culminate in Champions League glory : so far until 2019, however, the Parisians failed to translate their domestic dominance into success in the continental game. But since the pandemic PSG have known another kind of success in Champions League because they reached the Champions's final and the semi finals the next year in 2021. That shows that the PSG have taken a new and stronger dimension, let's hope it will bring them to their final goal.



Furthermore on the plot above, we can also observe that the assets and liabilities also developed since 2011 so it means from the arrival of new investors, this evolution is similar whether for assets and liabilities.

## 2.2 Sponsorships

Paris Saint-Germain went from Ligue 1 strugglers to one of Europe's elite clubs. PSG owners have splashed out over 1 billion € on players, making the club France's top team as well as UEFA Champions League contenders. Since 2011 the club has dominated French football, but the Champions League has so far remained elusive. PSG's massive expenditures have also brought the club several problems with UEFA and its Financial Fair Play regulations (FFP). That's why PSG had to find another way to get another big source of incomes.

So far, PSG total income increased by over 17% only thanks to the sponsoring. PSG has also significantly improved its marketing strategy, sponsorship and merchandising revenues. Commercial revenues, which include sponsorship, merchandising and partnerships have increased twelve-fold, from 26 million euros to 366 million euros, in the space of eight years, which is a huge performance. They managed to succeed in this expansion thanks to a diversity of investments and partnership that we are going to browse in this section.

This performance is reflected by the evolution of the club's value since 2013-2014. On the plot below, we can see that from 2013 to 2017 the worth doubled from 415 million € to 841 million €, it also doubled from 2018 to 2020 from 1.1 billion € to 2.5 billion € despite the pandemic. So from 2013 to 2020 the club value was multiplied by 5 which highlights the incredible performance of the PSG headquarters.

**How did PSG achieve such results?** "The 990 percent increase is explained by the fact

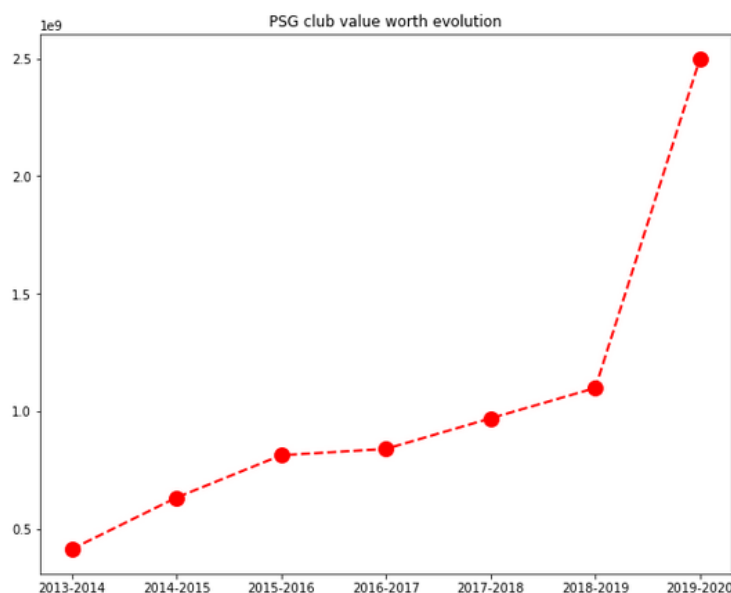


FIGURE 18: Evolution of PSG's club value since 2013-2014

that the club started from very low. We went from a club that was no longer worth much, with problems of supporters and a few players in the portfolio, to an international sports brand, valued at more than a billion dollars. However, starting from a billion, it will be difficult to maintain such growth scores. However, a billion dollars is significant. Even if North American franchises, NFL and NBA, are much more valued, as are, to a lesser extent, clubs like Real Madrid or Barcelona.” “In the seven years since QSI's arrival, the strategy has first been to grow the club sportily. By endowing them with very good players, buy making them win titles. We have increased the “players” asset. Then, gradually, it was passed from a good national club to one of the main clubs in Europe and in the world. Through world tours and various partnerships, we have increased the value of the brand, its intangible assets.”

### 2.2.1 Qatari sponsors

**Qatar Tourism :** Qatar Tourism – Owned by Qatar Sports Investments (QSI), there is little surprise that PSG is also sponsored by the Qatar Tourism Authority (QTA). The sponsorship deal is aimed to promote Qatar's positive image on a global scale and as a premium business and holiday travel destination. The sponsorship deal, however, has been subject to major scrutiny from UEFA over the past few years. PSG's deal with QTA sees them receive a grand total of US\$178 million annually. Many investigations have been carried out and continue to run in the background as this deal is implied to be one of many that the QSI Group employs to put more money into the club than allowed by UEFA's Financial Fair Play (FFP) regulations.



**Ooredoo :** PSG signed a sponsorship deal with Doha-based international telecom company Ooredoo in September 2013. As per the deal, Ooredoo gets branding rights on PSG's kits, with its logo appearing right below the numbers on the back of the matchday shirts. Ooredoo also holds naming rights for the club's training centre (Camp des Loges), which is thusly called Ooredoo Training Centre



**QNB :** Doha-headquartered Qatar National Bank (QNB) is an official sponsor of the club since 2011. The sponsorship deal sees QNB serve as the official sleeve sponsor of PSG, with its logo appearing on the left sleeve of the club's matchday kits. Owned partially by the Qatari sovereign wealth fund Qatar Investment Authority (QIA) that also owns Qatar Sports Investments (QSI), QNB also provides its services for the club's financial transactions. QNB further strengthened ties with the club when it roped in their star player Neymar Jr as a brand ambassador in December 2018.



**Qatar Airways :** PSG further strengthened their ties with Qatar earlier this year when they roped in Qatar Airways as their official airline partner in a two-year premium partnership deal, after the exit of Dubai's Emirates from PSG's sponsorship portfolio. The sponsorship deal covers PSG's men's, women's, and handball teams, and will reportedly bring US\$5.5m – US\$10m approx. in revenue.

**BeIn Sports :** Chaired by PSG's president Nasser Al-Khelaifi, Qatari global sports network beIN Sports also serves as a premium partner of the club. The deal grants beIN branding rights



across the club's physical and digital assets.



### 2.2.2 Jersey sponsorship : Jordan x ALL x Nike

For Paris Saint-Germain, forecasts were on the rise for the 2019-2020 season. The new PSG partnerships announced in 2019, in particular **Accor Live Limitless (ALL)**, which has become a jersey sponsor, the renewal of the equipment supplier partnership with Nike will benefit the growth in sponsorship revenues, to which is added the renewal of confidence of eleven club partners. But the main collaboration of this year is probably the one with **Jordan brand**. PSG has become the first football club to have a sponsorship deal with Jordan Brand—but on July 31, 2017, the Charlotte Hornets (owned by Michael Jordan), became the first professional team to have the Jumpman logo as the licensing sponsor on their uniform. This partnership is reported to generate over 200 million € in annual revenues for Nike.

Since the takeover of the club by **Qatar Sport Investment (QSI)** in 2011, the total income of Paris Saint-Germain has multiplied by more than 7 since the 2009-2010 season (82 million euros). Absent from the Football Money League rankings at the start of the decade, Paris Saint-Germain is the club that has made the most progress over the period. In detail, the TV rights brought in 156 million euros, while the sale of derivatives generated 60.4 million euros. An amount up by 9.2%, driven in particular by the partnership with the Jordan brand (Nike).





### 2.2.3 International expansion

PSG is expanding in the world in order to get popularity through the world. Through this expansion, they also have the aim to earn more profits with the goal to become stronger and become the most important club in the world.

**Visit Rwanda** – PSG signed a three-year deal with Rwanda Development Board (RDB) in December 2019, in order to promote Rwanda as a premium tourist destination. The deal sees RDB's "Visit Rwanda" logo appear on the left sleeve of PSG women's matchday kits, as well as at the back of PSG men's pre-match training kits. Rwandan tea and coffee are also served at the club's home ground, Parc des Princes.

**China** - Chinese New Year celebrations are well on their way and to celebrate Ligue 1 champions Paris Saint-Germain has released special kits to honor the holiday. In 2017, the Ile-de-France club has offered up its famed red, white and blue jerseys with Mandarin stylizations for six of its top players including Mbappé, Neymar, Cavani, Di Maria, Draxler, and Thiago Silva. Besides the player names in Mandarin, all aspects of the kit remain the same including player numbers, colorway and club crest. Since then, PSG has been repeating this special jersey every year for the celebration.

It shows how the marketing strategy is good, because PSG target two different continent and population.



### 2.2.4 French and european brands

**Nivea Men** : Beiersdorf-owned German male skincare brand Nivea Men has been a premium partner of PSG since 2013. The deal grants Nivea Men branding rights across the club's physical and digital assets. In 2018, PSG extended their partnership with Nivea Men to also cover Brazil,





as they launched the ReadyfortheGame campaign which was spearheaded by the then PSG's Brazilian players Neymar, Thiago Silva, Danis Alves and Marquinhos.

**Orange :** Paris-headquartered French telecom company Orange has been a premium partner of PSG since 1999. The deal grants Orange branding rights across the club's physical and digital assets.

**Renault :** French car manufacturer Renault signed a three-year deal with PSG in July 2018, making it their official automobile partner. The deal aims at global advertising via promotional campaigns, with Renault holding branding rights across the club's physical and digital assets.

**Hubside :** French website creator Hubside was announced as an official partner of PSG in a three-year deal in November 2018. The deal, reportedly worth US\$1.7 million per season, sees Hubside offer fans a chance to create a PSG-themed website within a few clicks.

**Gaussin :** PSG signed an official partnership deal with French logistics and transport engineering company Gaussin in October 2019. Gaussin specialises in fully electric, driverless transport vehicles, which serve as the forefront of this deal. PSG aim to include Gaussin's products as part of the infrastructure of their new training complex which is set to open by 2022.

## 2.3 Parc des Princes extension

At the end of a record 2018-2019 ticket office season, Paris Saint-Germain is seeing greater demand for tickets than ever, driven in particular by the expansion of its international influence. The Club has not opened its counters on a match day since May 20, 2017.

In 2019, Paris Saint-Germain broke new records at the box office. The Club sold more than 1,230,000 tickets during the season. PSG are sold out at the Parc des Princes for the second consecutive season and more than 50 matches. In 2018-2019, the average attendance at Parc des Princes amounted to 47,300 spectators per match, keeping the fill rate at 99%.

The 2018-2019 season was marked by the acceleration of the attractiveness of the Parc des Princes internationally. Foreign spectators represented more than 20% of single ticket buyers to attend Paris Saint-Germain matches in 2018-19. Witness the growing influence of the Club in the world, no less than 166 different nationalities have come to the Parc des Princes this season, a majority of which came from the United States (12%) and Brazil (8%). Interest in Paris Saint-Germain has also grown in our neighboring countries with a strong footballing culture : 8% of foreign spectators at the Parc des Princes came from the United Kingdom, 6% from Italy and 5%

from Germany.



The large Parc des Princes with 60,000 seats is not for soon. The stadium has indeed been selected to host football matches for the 2024 Olympics. This is not a surprise, but the decision confirms that the work to expand the stadium to 60,000 seats cannot begin before the end of the Olympics.

PSG president Nasser Al-Khelaifi, however, confirms that the expansion of the Parc des Princes is still in the works. "We have renovated the Parc des Princes to make it one of the most beautiful and safest stadiums in the world, and we have managed to develop its profitability to colossal proportions. We have launched major projects related to the club's infrastructure, such as the planned expansion of the Parc des Princes to bring it to 60,000 places ".

## 2.4 Social Medias

The Parisian club continues to increase its popularity across the world on different platforms by settling at the tables of the biggest European clubs.

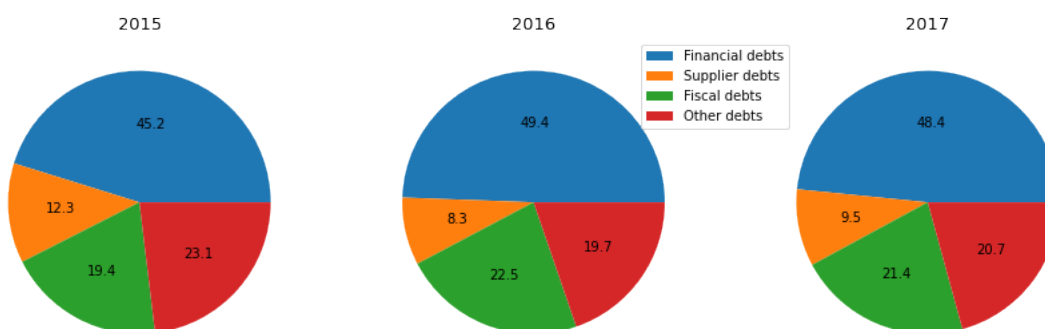
Four months after crossing the 90 million threshold, Paris SG reached a new milestone whereas ten years ago, only 500,000 people flocked to follow the club from a distance via these applications. This progression can be explained by the recent European career of the men then led by Thomas Tuchel. "The club's momentum has accelerated dramatically since its first UEFA Champions League final," confirms the club.



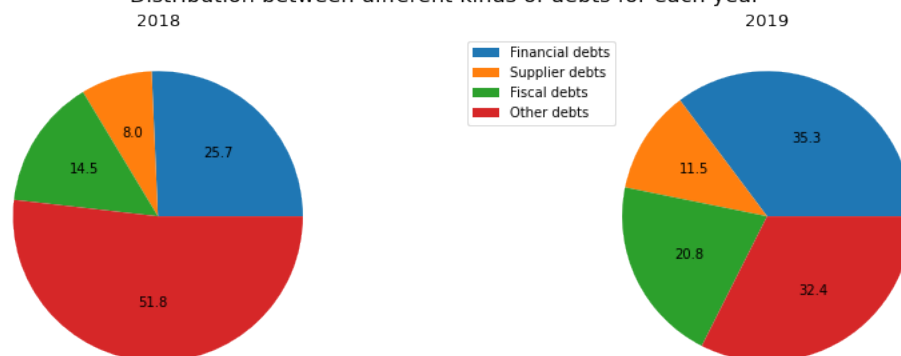
## 2.5 But it involves more expenses

At PSG, the club's payroll is approaching 350 million euros. A transfer window that says more about the economic reality at PSG, in the midst of a pandemic crisis. Solid, the champion club of France is still, but it suffers the effects of the matches behind closed doors full force. And it depends on its sponsors, the main one, Accor (hotel sector), being hit hard by the context. Not to mention the television rights and the difficulties conceded by the Mediapro group. As a result, this summer, Paris relieved its payroll, with the departures of Edinson Cavani (at Manchester United) and Thiago Silva (Chelsea), formerly third and fourth largest in the squad. On the plots below we can see the repartition of the PSG debts, they managed to reduce the financial debts until 2017 but the quantity of Other debts has increased a lot.

Distribution between different kinds of debts for each year



Distribution between different kinds of debts for each year





## 3 Curve fitting

Another interesting part of this study/publication was to use some mathematical and IT tools to make predictions and have a look on the PSG club's future. To do this, we first thought about predicting the next years' income of the club using the data available. A nice way to do it is Deep Learning, a Computer Science's sub-domain, and especially Recurrent Neural Network (RNN) which is very relevant for Time Series Predictions.

Even if the main purpose of this paper is not to explain and learn what are Data Science and Artificial Intelligence, we will briefly talk about RNN as everyone knows the basis.

### 3.1 Recurrent Neural Network

#### 3.1.1 What is it ?

Neural network, or artificial neural network to be exact, are computing systems used in artificial intelligence area to predict events, impacts, or simply outputs while using mostly numerical data as input. The speciality of recurrent neural network is they can use the previous outputs as next inputs. So for example if we want to predict a bakery's income using available data (number of employees, size of the menu, product's price) for 2021, 2022 and 2023 :

- With a "normal" neural network each year's prediction will be performed using this year's data : 2021 data will help to predict 2021 income, 2022 data will help to predict 2022 income and same for 2023.
- With a recurrent neural network it starts the same way, 2021 data will help to predict 2021 income, but for predict 2022 income we will use 2022 data, 2021 data and/or 2021 predicted income. And for 2023 income we will also use 2023 data, 2022 data and 2022 income and, if we want, we can also use 2021 data and income.

#### 3.1.2 Study's limitations

So RNN are usually used for time series in finance area like trading or cryptocurrency when we can see a dependence between previous output and current one. In our case, we would have used the previous' year income to predict the following one (if a dependent pattern can be retrieved). However we have faced an issue for the use of RNN : we were missing data. Deep Learning is a useful alternative when we deal with a lot of data while we only have 14 years' income. A solution would have been to collect more data as PSG is a former club but with its balance sheet drastically change since Qatar investment in 2011 and those data would not help to predict the club's future.

Finally, we decided to throw away the use of Artificial Intelligence, and focus on something more "standard" using mathematics : trend curve.

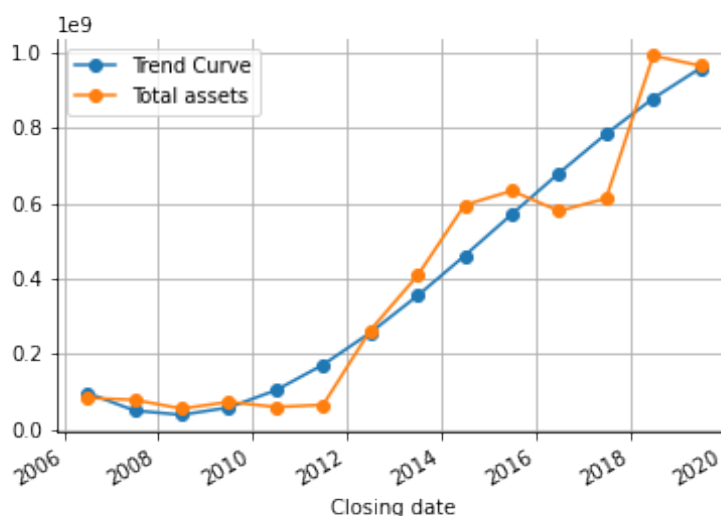
## 3.2 Trend Curve

A trend curve (or trend line) is used to specify future trends, i.e. increasing and decreasing variations according to the given numbers and a defined function. With this process we can bring together a set of values forming a curve, to a mathematical function and thus deduce its shape. To do it, we used a famous mathematical python programming language library named scipy. From this one, we use curve fit function and tried several kind of functions to find a relevant trend curve to see the future trends of our data.

For all our trend curves we tried several functions to find the most suitable one. Among all our attempts, we tried several polynomial functions, linear, exponential some logarithmic ones. We finally decide to work with degree 3 polynomial functions which are enough relevant for our cases.

For each section, we first present a graph plotting the real data curve and the trend one, to show that they have similar shape, and then a plot showing the shape of the trend curve some years after the last date in our data (2019).

### 3.2.1 Total Assets



The first data on which we fit a trend curve is the total assets of the club. Total asset is the best indicator to represent the value of the club with all its goods. So as it grew up fast these last years, (thanks to investments and the marketing campaign) it will keep growing a little during

some years before stagnate for a period. Our polynomial function managed to show this evolution using 2006-2019 data.

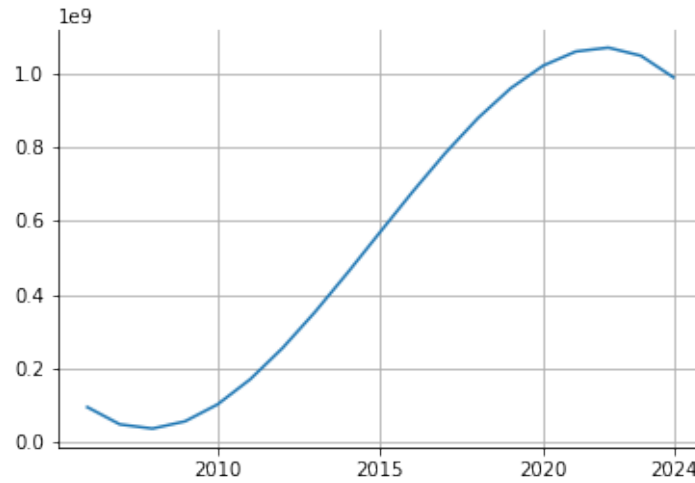
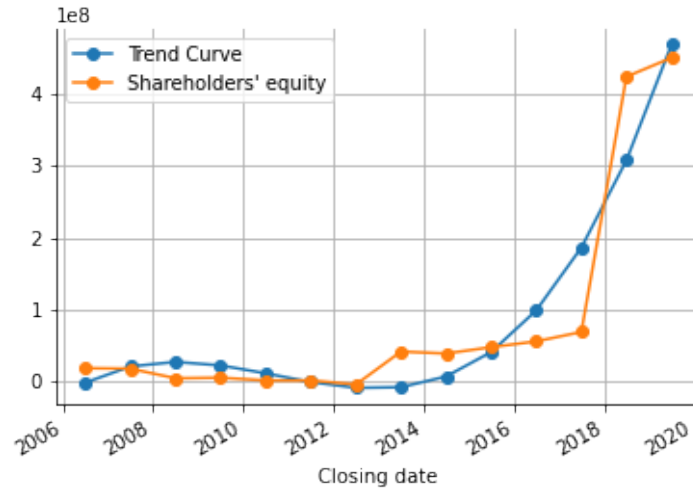


FIGURE 19: Trend curve for PSG total asset 2006-2025

Above, we can see the trend curve for a short term until 2025. As we mentioned it earlier, we only have the financial statements from 2006 to 2019. The prediction from 2020 to 2025 seems to be good for now as we are in 2021 and the PSG keeps gaining worth value. However according to this trend curve there could be a little slow down during the season 2023-2024.

### 3.2.2 Shareholders' equity



As Total assets is a good indicator to represent the club's value, Shareholders' equity can be seen as the net asset : indeed, it is equal to the sum of assets minus the sum of the liabilities. Moreover, we can see the club's value while retrieving all debts and provisions assigned to it. Our graph seems to show a steadily increasing curve implying that with times net asset of PSG will keep increasing.

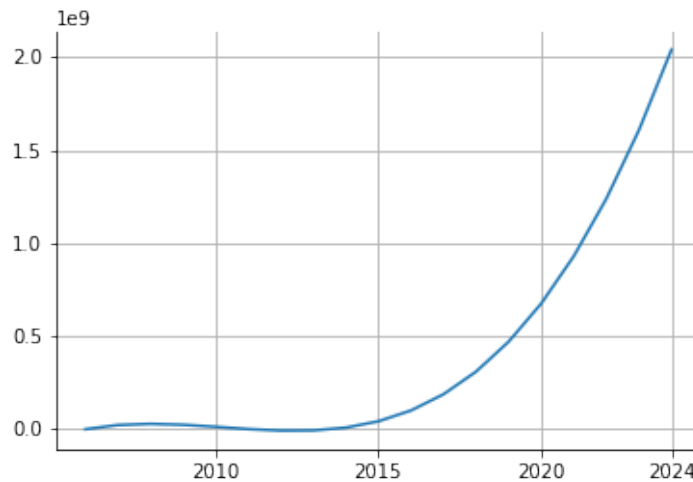


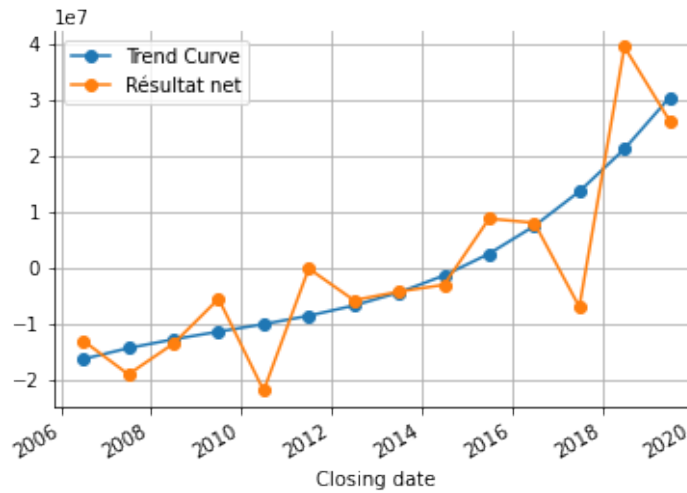
FIGURE 20: Trend curve for PSG net asset 2006-2025



As we previously said that the total asset will surely stagnate, in order that the net asset increases steadily, the sum of liabilities should gradually decreases with times. Well, even if the curve might have some stagnating phase, this is coherent because now that the club have earned a lot of money and have invested it in assets, it can pay its debts and penalties.

However, we can see our curve is a little incorrect and grew up too fast, exceeding the max total asset value while keeping increasing.

### 3.2.3 Net Income



The thinking way about the net income is the same as for the shareholder's equity. Indeed, PSG is a football club but it also can be seen as a company which means one of their goal is to earn money. Then, for the same reasons told in the previous paragraph, the net income should gradually increase in the future.

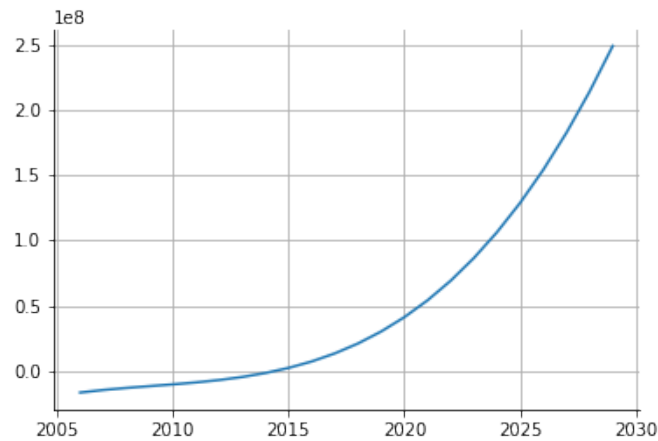


FIGURE 21: Trend curve for PSG net income 2006-2030

To conclude on our future trend graph, we can see an exponential increase in which the net income of the club is multiplied by 5 between 2021 and 2030. This can seem to be a bit too much, but it is not really impossible as it already happens before between 2013 and 2020 when the club value increased from 415 million € to 2.5 billion €.