# Optimism bias in financial analysts' earnings forecasts: Do commission sharing agreement rules reduce conflicts of interest?

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**Abstract**

Implemented on May 18, 2007, French rules governing Commission Sharing Agreements (CSA) consist to unbundle brokerage and investment research fees. They also allow mutual funds and brokers to enter into a CSA. Doing so, these rules should reduce optimism in analysts' forecasts in two ways. On the one hand, they should reduce analysts' temptation to issue overoptimistic EPS forecasts to entice their customers to buy stocks and to charge them brokerage fees. On the other hand, they should promote (less optimistic biased) independent analysis. Based on a sample of one-year-ahead earnings per share forecasts issued by 3,746 analysts for 58 French firms during the 1999-2011 period, we show that the optimistic bias declined significantly after CSA rules. The result is robust to introducing the US 'Global Settlement' rules in the regressions. This finding provides additional evidence to the literature that shows that financial regulation is not neutral as regards analysts' behavior.

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# 1 Introduction

Financial analysts provide information that is crucial for financial markets to function properly. By issuing forecasts of share values or earnings per share (EPS), financial analysts reduce information asymmetries between firms and investors or fund managers. Generally issued on behalf of brokers, forecasts and recommendations are widely used by fund managers for making decisions about portfolio allocation.

However, many studies have demonstrated that analysts' earnings forecasts can be inaccurate (Brown and al., 2015). These inaccuracies tend to increase corporate agency costs and reduce the informational efficiency of financial markets. More especially, one strand of literature reveals that analyst forecasts and recommendations are excessively optimistic [1]. There are at least two reasons for this bias.

On the one hand, optimism may stem from the analysts' concern for maintaining good relationships with firms' manager (Green and al., 2014). Having privileged relationships with a firm manager allows analysts to obtain so-called soft information about the firm through phone calls, call conference or on-on-one meetings. To ensure their access to soft information, analysts have to satisfy firm managers. They thus have strong incentive to optimism. Indeed, by providing firm managers the opportunity to create a favorable reaction on financial markets, optimistic forecasts increase their firm's share price (Payne and Robb, 2000, Matsumoto, 2002, Burgstahler and Eames, 2006).

On the other hand, optimism in financial analysts' forecasts can also result from conflicts of interest due to investment banking or brokerage activities (Arand and Kerl, 2015, Devos, 2014, Mathew and Yildirim, 2015). First, when an analyst is linked to a financial institution that provides investment banking services to firms, issuing optimistic forecasts or recommendations on a firm allows the analyst to please his employer by helping him to win or to preserve customer relationship with the firm manager. This allows the financial institution to provide lucrative underwriting (Lin and MacNichols, 1998, Michaely and Womack, 1999, McKnight et al., 2010) or public offering services (Michaely and Womack, 1999, Dechow et al., 2000, Lin et al., 2005) to the firm. Second, conflicts of interest may emerge when sell-side analysts are employed by brokers, who provide not only financial research but also brokerage services (Hayes, 1998, Jackson, 2005, Mehran and Stulz, 2007).

Recent financial reforms have attempted to curb conflicts of interest in the financial research industry (Espahbodi et al., 2015). The Regulation Fair Disclosure (FD), which has been implemented by the Security and Exchange Commission (SEC) in US in October 2000, consists to prohibit any form of selective information released by large firms to analysts or investors. Empirical investigations provide some support to the

[1] Throughout this article, we will denote as optimistic a forecast that exceeds the realized value (forecast-earnings>0).

intuition that, consecutive to this regulation, analysts have had less incentive to issue optimistic forecasts or recommendation in order to maintain good relationships with firm managers (Herrmann et al., 2007, Hovakimian and Saenyasiri, 2010).

Announced on December 2002, the Global Settlement is an agreement between the US State, the Security Exchange Commission (SEC), the New York Stock Exchange (NYSE), the National Association of Security Dealer (NASD) and 12 large investment banks in order to neutralize analysts' conflict of interest. Notably, the 12 banks involved in this agreement have been compelled to implement a clear separation between financial research departments and investment banking activities. They have also committed to systematically provide their customers an access to independent financial research. A large empirical literature show that the GS allowed to reduce analysts' incentive to issue optimistic earnings forecasts (Kadan et al., 2009, Clarke et al., 2011, Guang et al., 2012, Hovakimian and Saenyasiri, 2010, 2014).

Finally, in France, rules governing Commission Sharing Agreements (CSAs) were implemented by the *Autorité des Marchés Financiers* (AMF, the French Financial Markets Authority) on May, 2007. The aim of these so-called CSA rules is to eliminate conflicts of interest and promote stronger independence in financial analysis. While brokerage and financial research were previously provided as a single package and charged globally, the new regulation consists to unbundle fees for both types of services. Investors such as portfolio management companies must now clearly split fees into two separated components: the brokerage commission and the investment research commission. When an investor purchases the brokerage service from an execution broker and the financial research service from a third party (for example an independent research provider, i.e., a research provider that does not offer brokerage services), the investor and the broker can enter into a so-called Commission Sharing Agreement (CSA)[2]. Under such an arrangement, the broker must splits its fees into two components and pays out the financial research portion to the independent financial analyst. This regulation applies to mutual funds that are established in France (i.e., that are approved by the AMF or the Authority of another country belonging to the European Economic Area) and governed by French law.

As far as we know, no empirical investigation has been conducted to check whether CSA rules allowed to neutralize conflicts of interest within the financial analysis industry and, as a consequence, reduce the optimistic bias in financial analysts' forecasts (or recommendations). This is precisely the goal of this paper to fill this gap. We make here use of data set that includes I/B/E/S analysts' earnings forecasts on 58 French firms from the *Euronext 100* index from January 1999 to December 2011 on a monthly basis. Conducting OLS regressions and controlling for macro- and firm-level characteristics, we investigate whether the enactment of CSA rules reduced optimistic bias in analyst forecasts. The paper is organized as follows. Section 2 sets up the

[2] *Commission de Courtage à Facturation Partagée (CCP)* in French.

theoretical and empirical background for our research. Our methodology is presented in Section 3. Section 4 presents our results. Section 5 concludes.

# 2 Literature

In this section, we present the literature devoted to optimism in financial analysts' forecasts. We first focus on the observable determinants of optimism. We then present the role played by regulation and the institutional background.

## 2.1 Sources and determinants of optimism in analysts' earnings forecast

We first present the two main sources of analyst optimism: the need to main their access to firm manager information and the existence of conflicts of interest.

### 2.1.1 Optimism in analysts' forecasts and the access to manager information

A first strand of literature explains optimism by the analysts' concern for maintaining good relationships with firms' manager (Francis and Philbrick, 1993). Having privileged relationships with a firm manager allows analysts to obtain so-called soft information about the firm through phone calls, call conference or on-on-one meetings. To ensure their acccess to soft information, analysts have to satisfy firm managers. They thus have strong incentive to optimism since by providing firm managers the opportunity to create a favorable reaction on financial markets, optimistic forecasts increase their firm's share price (Payne and Robb, 2000, Matsumoto, 2002, Burgstahler and Eames, 2006).

As soft information is all the more important when earnings are difficult to predict, optimism should increase with firm's profit volatility. This theoretical intuition is confirmed by Das et al. (1998) using a data set of firms from the Value Line Survey between 1989 and 1993 and by Lim (2001) using a set of forecasts provided by I/B/E/S (*Institutional Brokers Estimate System*) for the period 1984-1996. It is also corroborated by Jackson (2005) who employs a data set of brokers on the Australian security market over the period 1992-2002. Considering that firm with bad past performance should be more reluctant to release public information, Lim (2001) shows that the optimism bias is higher for firms with negative past earnings surprise and poor past stock returns. As greater public information is available for large firms and those followed by a large number of analysts, optimism is also shown to decrease in firm size and analyst coverage (Das et al., 1998, Lim, 2001, Jackson, 2005). Moreover, Das, Levine and Sivaramakrishnan (1998) establish that analyst coverage mitigates

the increasing effect of earnings volatility on forecast optimism [3]. They also reveal that the need to preserve their relationships with managers entices analysts to issue particularly optimistic forecasts about firms that received unfavorable ratings from the well-known American financial publication Value Line. The same result is obtained by Francis and Philbrick (1993) using a set of Value Line recommendations for 1987, 1988 and 1989. Moreover, Lim (2001) shows that more experienced analysts, who are less concerned with preserving their relationships with firm managers, are generally less optimistic. He also establishes that past optimistic consensus about a firm increases current optimism bias. Finally, relying on a sample of I/B/E/S forecasts over 1983-1998, Richardson et al. (2012) obtain that earnings' forecasts are optimistic at the beginning of the fiscal year and become pessimistic at the end of the year. This 'walk-down' behavior allow firm managers to create a positive surprise by 'beating' the forecast when they announce their earnings, suggesting that optimism decreases with the number of days to the end of the fiscal year.

### 2.1.2 Optimism in analysts' forecasts and conflicts of interest

Optimism in financial analysts' forecasts can also result from conflicts of interest due to investment banking or brokerage activities[4]

Conflicts of interest and over-optimism may arise when the analyst is linked to (employed by) a financial institution that provides investment banking services to firms[5]. Issuing optimistic forecasts or recommendations on a firm allows the analyst to please his employer by helping him to win or to preserve potentially lucrative customer relationship with the firm[6]. This theoretical intuition is confirmed by Dugar and Nathan (1995). Using a sample of 400 firms traded on the NYSE/AMEX between 1983 and 1988, they document that analysts in investment banking produce more optimistic forecasts and recommendations than others[7]. Among various investment banking services

[3]Das et al. (1998) also study interaction between earnings volatility and firms' size but the coefficient of the interaction term turns out to be insignificant.

[4]There exist two other sources of conflict of interest, we do not develop here. The first one relates to situations in which the brokerage firm that employs the analyst makes transactions for its own account. The second one corresponds to situations where the analyst himself owns interest in a given firm. In both cases, the analyst has strong incentive to issue not too bad forecasts or recommendations that could decrease stock value.

[5]Note, however, that this idea is contradicted by Jacob et al. (2008). Using I/B/E/S data set over the period 1998-2001, they find that investment bank analysts' forecast are more occurate than those from independent analysts. Their interpretation of this result is that investment bank analysts are better skilled and have more resource than others.

[6]Analysts are rewarded for this. Hong and Kubik (2003) show that brokerage analysts have better carrier prospects when they issue optimistic forecasts.

[7]However, show that the desire to get new customers for investment banking business may also entice analysts to make pessimistic forecasts about firms in order to avoid them negative surprise at the earnings' announcement. According to Chan et al. (2007), this has been particularly strong during the bull market of the 90ies, during which investment banking business was booming, and for

that can give birth to conflicts of interest, underwriting has received particular attention. On the other hand, the incentive to issue optimistic forecasts or recommendation may arise before a firm equity offering. In this case, the analyst issues pessimistic forecasts or recommendations about the firm in order to increase the investment bank's likelihood to be selected as a lead or as a co-underwriter for the equity offering. On the other hand, conflicts of interest may arise after the public offering, when the investment bank has been hired as a lead or co-underwriter. In this case, optimist forecasts allows the analyst to secure the underwriting activity of the investment bank by enticing investors to buy newly issued securities. Relying on an I/B/E/S data set over the period 1989-1994, Lin and MacNichols (1998) find that affiliated analysts, i.e. analysts employed by an investment bank that intervenes as a leader or co-underwriter of a firm, issue more optimistic forecasts about this firm than non-affiliated analysts. This result also holds in the case of analysts' recommendations, as shown by Michaely and Womack (1999), using a data set of 391 IPO on the NYSE/AMEX/NASDAQ in 1990 and 1991. Interestingly, this finding is corroborated by McKnight et al. (2010) on a large I/B/E/S data set covering 13 countries (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and United Kingdom). Finally, other investment banking services, that consists to complete initial public offerings (IPO) or mergers, also create conflicts of interest (Michaely and Womack, 1999). Here again, analysts have strong incentive to issue optimistic forecasts in order to support the activity of the investment bank they are linked to. Using a sample of I/B/E/S forecasts between 1981 and 1990, Dechow et al. (2000) show that analysts who are employed by an investment bank that manages a public offering issue more optimistic forecasts than others. Michaely and Womack (1999) and Lin et al. (2005) observe the same bias for analysts' recommendations[8].

Second, conflicts of interest may exist when sell-side analysts are employed by brokers, who provide not only financial research but also brokerage services (Mehran and Stulz, 2006). Theoretical models by Hayes (1998) and Jackson (2005) show how the concern for generating brokerage business affects the quality of analysts' research. Analysts issue optimistic forecasts in order to entice their customers to buy stocks and to be able to charge them brokerage fees. Enticing their customers to make buying transactions has particular interest for analysts. It is true that pessimistic forecasts also allow to generate brokerage commissions by enticing investors to sell stocks but, if short selling is prohibited, this is possible only if the investor already owns these stocks. Moreover, since buying transactions usually lead to selling transactions in the future, they provide a double opportunity to charge brokerage commissions. Using I/B/E/S data for the US between 1994 and 2003, Agrawal and Chen (2012) reveal that optimism increases with the intensity of conflicts of interest within the broker,

growth stocks, which are the most likely to need investment banking services in the future.

[8]Barber et al., 2007 show that investment bank optimistic recommendations under-perform those of independent analysts, especially after the NASDAQ market peak.

measured by the share of the brokers' profit resulting from brokerage activity. In the same vein, relying on a sample of firms, analysts, brokerage and non-brokerage firms in December 1994, Carleton et al. (1998) show that the concern for brokerage business also biases upward analysts' recommendations.

## 2.2 The effect of recent financial reforms

We now turn our attention to the effect of recent financial reforms on the optimistic bias. We successively consider two regulatory changes in the US: the Regulation FD, the GS and the Market Abuse Directive (MAD).

### 2.2.1 The Regulation FD

The Regulation FD has been implemented by the SEC in US in October 2000. It consists to prohibit any form of selective information release by large firms to analysts or investors. Consecutive to the FD regulation, firm managers must disclose the same information to all market participants simultaneously. The goal of this regulation is to provide a level playing field for investors. It also aims to reduce analysts' forecast biases: as it is now impossible to get privileged information, analysts should have less incentive to issue optimistic (or pessimistic) forecasts or recommendation in order to maintain good relationships with firm managers.

Relying on a data set from FirstCall Corporation, Heflin et al. (2003) consider a post-FD (the fourth quarter of 2000) and a pre-FD period (alternatively the third quarter of 2000 and the fourth quarter of 1999). Their OLS estimates indicate that there is no effect of Regulation FD on the analysts' consensus bias. This finding is corroborated by Mohanram and Sunder (2006), using a different forecast data set (obtained from I/B/E/S) and a different definition of post-FD (from November 2000 to October 2001) and pre-FD periods (from November 1999 to October 2000).

However, the effect of regulation FD becomes more apparent when focusing on firms for which earnings are particularly difficult to forecast. As explained by Lim (2001), the incentive to issue optimistic forecasts is more severe for these firms. Hence, the effect of Regulation FD on optimism should be stronger for them. Relying on a sample of I/B/E/S forecasts for the period 1996-1999 (pre-FD period) and 2001-2004 (post period), Herrmann et al. (2007) find a sizable effect of Regulation FD on optimism for internationally diversified firms, whose earnings are strongly dependent on many external factors and thus complex to forecast. Based on an I/B/E/S data set between 1984 and 2006, Hovakimian and Saenyasiri (2010) demonstrate that the decline in the optimistic bias in the post-FD period (between October and December 2002[9], is more prevalent for small firms as well as for firms with few coverage by analysts.

[9] After December 2002, another regulation, The Global Settlement, is likely to affect the analysts' bias.

### 2.2.2 The GS

Announced in December 2002, the GS was officially published on April 28, 2003[10]. It consists in an agreement between the US State, the SEC, the NYSE, the NASD and 10 large investment banks in order to curb analysts' conflict of interest (2 more banks entered into the agreement in August 2004). Consecutively to this regulation, a portfolio management company aiming to finance independent analysis has been created, contributed by the fines that have been applied to some investment banks in the framework of financial scandals. Moreover, the 12 banks involved in this agreement (below denoted by "the 12 banks" or "the sanctioned banks") have been compelled to implement a clear separation between financial research departments and investment banking activities. They have also committed to systematically provide their customers an access to independent financial research. Finally, the GS regulation forbids the analysts employed in these financial institutions to follow bankers in roadshows organized by a firm which is preparing a public offering.

Because the GS aims to promote independent financial research, it should reduce analysts' incentive to issue optimistic earnings forecasts. Using a data set covering the period November 2000-December 2007, Clarke et al. (2011) consider three categories of analysts: affiliated analysts (who are employed by a bank having a business link with a firm), unaffiliated analysts (who are employed by an investment bank without any link with a firm) and independent analysts (who have no investment bank business)[12]. They obtain that analysts are more likely to issue strong buy recommendations after September 2002 than before. This phenomenon is found to be stronger for affiliated and unaffiliated analysts than for independent ones. This result is corroborated by Kadan et al. (2009). They show that analysts' recommendations are more likely to be pessimistic (i.e. buy or strong buy) over the post-GS period (between September 2002 and December 2004) compared to the pre-GS period (from November 2000 to August 2002). In addition to their study about the Regulation FD, Hovakimian and Saenyasiri (2010) examine the effect of the GS on sanctioned banks. Their estimates indicate that the analysts' forecast bias strongly declines after December 2002. This effect is shown to be much stronger than for the Regulation FD. Moreover, because the 12 banks publicly announced that they would also apply the agreement in their foreign activities, the GS may also have an international impact. Based on a sample of 40 countries over the 1991-2010 period Hovakimian and Saenyasiri (2014) show that the GS reduced the analyst forecast bias, especially in the countries where the 12 banks are strongly present.This decline in the forecast bias is not stronger for the 12 banks' analysts than for all other analysts, which suggest that the GS have significant international spillover effects. Finally, Guang et al. (2012) show that recommendations

[10]A first set of GS rules (NYSE rule 472 and NASD rule 2711[11]) aiming at limiting the links between investment banking and research activities within banks were enacted in September 2002.

[12]The notion of "independent analyst" can be more restrictive. In Dubois et al. (2014), independent analysts are those who have neither investment bank *nor* brokerage business.

issued by sanctioned bank analysts are significantly less optimistic in the pre-reform period (January 1998-December 2001) than in the post reform period (January 2004-December 2007). Taken together, theses findings suggest some effectiveness of the GS in neutralizing analysts' conflicts of interest.

### 2.2.3 The Market Abuse Directive (MAD)

Among other provisions, the MAD, enacted in the European Community in 2003 and transposed into the national laws of each European country between 2004 and 2006, also aims to reduce the conflicts of interest in the investment research industry. It implements strong disclosure rules concerning the research process of financial analysts and any information that could affect forecasts or recommendations such as analysts' remuneration schemes or institutional affiliation. Using a data set of 15 European countries between 1997 and 2007, Dubois et al. (2014) show that the MAD significantly reduced the optimism of recommendations by affiliated analysts (i.e., analysts who are linked to an investment bank having a business relationship with the firm on which the recommendation is issued). This effect is amplified in countries where the severity of sanctions in case of violations is high.

# 3 Methodology

This section presents our methodology, presenting successively the testable assumption of our research, the data used and the econometric model.

## 3.1 Testable assumption

Clearly inspired from the device issued by the Financial Services Authority in UK in June 2006, rules governing Commission Sharing Agreements (CSAs) were implemented by the *Autorité des Marchés Financiers* (AMF, the French Financial Markets Authority)[13] on May 18, 2007.

This regulatory change seeks to eliminate conflicts of interest and promote stronger independence in financial analysis. While brokerage and financial research were previously provided as a single package and charged globally, the new regulation consists to unbundle fees for both types of services. Investors such as portfolio management companies must now clearly split fees into two separated components: the brokerage commission and the investment research commission. When an investor purchases the brokerage service from an execution broker and the financial research service from a third party (for example an independent research provider, i.e., a research provider that does not offer brokerage services), the investor and the broker can enter into a

[13]The device is detailed in Article 317-79 et seq. of the General Regulation of the AMF and the AMF's instruction # 2007-02.

so-called Commission Sharing Agreement (CSA)[14]. Under such an arrangement, the broker must splits its fees into two components and pays out the financial research portion to the independent financial analyst. This regulation applies to mutual funds that are established in France (i.e., that are approved by the AMF or the Authority of another country belonging to the European Economic Area) and governed by French law. For example, the independent financial analyst Alphavalue has entered into many CSAs with execution brokers such as CA Chevreux, Crédit Suisse, Exane BNP Paribas, Instinet, etc[15].

Finally, CSA rules should reduce analysts' optimism in two ways. On the one hand, they should reduce analysts' temptation to issue overoptimistic EPS forecasts to entice their customers to buy stocks and to charge them brokerage fees. On the other hand, they should promote independent analysis, which is less subject to conflicts of interest and, consequently, to optimistic bias. Hence, we have the following testable assumption:

*H1: the implementation of rules governing CSAs reduces optimism bias in analyst forecasts on French firms.*

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## 3.2 Data

Provided by ThomsonReuters, our data set includes I/B/E/S earnings per share (EPS) forecasts and additional data from Worldscope. Our data set contains 58 French firms from the *Euronext 100* index (as composed between January and December 2011) categorized according to firm size and sector We study one-year ahead EPS forecasts by 3,746 analysts from 58 brokers from January 1999 to December 2011 on a monthly

[14] *Commission de Courtage à Facturation Partagée (CCP)* in French.

[15] A survey conducted by Sagalink Consulting (2012) provides a description of how CSAs are applied by French portfolio management companies during the first half-year of 2012. It first reveals that the number of brokers used by French portfolio management companies depends on the amount of Asset Under Management (AUM). For example, while the median of CSAs struck by portfolio management companies with less than 100 millions euros of AMU is 6, the median of CSAs entered into by companies with an AUM between 1 and 10 billions euros is 30. Concerning fees, French portfolio management companies pay between 4 and 20 pb for brokerage services (with an average of 6 bp and a median of 10 bp) and between 2 and 20 bp for research (with an average and a median of 10 bp). The survey also indicates that the number of French portfolio management companies that entered into CSA protocols has significantly increased between 2007 (around 5 % of French portfolio management companies) and 2011 (around 60%). Moreover, the number of CSAs is increasing with the amount of AUM: 2.4 in average for portfolio management companies with AUM under 1 billion euros against 3.75 for those with AUM above 1 billion euros. Finally, the survey reports that, for 75% of surveyed portfolio management companies, CSAs allowed to purchase independent financial analysis.

basis. This raw database consists of 59,046 firm-analyst-time observations[16]. The data set also includes firms' share price at each month, i.e., the closing share price of the Thursday before the third Friday of every month.

Several steps were required to clean the data. First, once issued, a forecast is frequently repeated for several months in the database. We obtained the number of monthly occurrences of each forecast. Then, for each forecast, we dropped repeated occurrences of the same forecast; to avoid artificially counting such repeated forecasts several times. Second, the final day of the fiscal year (we work on fiscal years rather than on calendar years), was carefully checked. Third, we dropped aberrant observations (for example, those that occur when there are several different forecasts from the same analyst, on the same day, regarding the same firm). Because the reported forecasts are supposed to be one-year ahead earnings forecasts, we created a variable denoted 'horizon', measuring the time elapsed (in % of years) between the earnings announcement date and the forecast release date. We then dropped forecasts with a negative 'horizon' value, or with a 'horizon' value that exceeded 365 days (366 for leap years). Fourth, we dropped all firm-analyst pairs that were associated with fewer than five forecasts. We also dropped all analysts covering only one firm and all firms covered by only one analyst. Finally we were left with a sample consisting of 58 firms, 3 732 analysts gathered in 170 brokers and 58,984 firm-analyst-time forecast observations.

Our data set does not provide any information about whether these analysts have signed a CSA with a portfolio management company. However, several arguments suggest that using a data set of French firms is the most suitable approach to capture the impact of the AMF regulation on analysts' behavior. First, French portfolio management companies' portfolios contain a large proportion of French stocks. For example, in 2013, French listed stocks owned by French non-money mutual funds amounted to 170,000 billions euros over a total stock amount of 375,000 billions euros, which represents a proportion of 45.3% against 28.8% for Euro Area stocks and 25.9% for others (Fourel and Lecourt, 2014). The second noteworthy observation concerning French portfolio management companies is that they own a large proportion of French stocks listed in financial markets. In 2011, they owned about 20% of CAC40 and SBF250 indexes' capitalization and 25% of the CAC small index capitalization (source: Paris Europlace, 2013). This proportion is quite stable over years.

Taken together, these arguments suggest that a sample of French firms is particularly suitable to capture the effect of CSAs on analyst forecasts' bias. As mentioned above, only mutual funds that are established in France and governed by French law can enter into a CSA protocol. Hence, if CSA rules are effective in reducing conflicts of interest, they should reduce the optimistic bias for the firms about which French

[16]The analysts may work for any brokerage house in the world that covers the French firms, as long as it is recorded in the database. The manner in which the stock market, the making and disclosure of earnings forecasts and the financial analyst function together in France is similar to what occurs in financially developed countries throughout the world. For instance, there is no real institutional difference between forecasts issued for French firms and those issued for U.S. firms

mutual funds purchase investment research and brokerage services. Because French mutual funds own a large proportion of French stocks and French stocks are largely owned by French mutual funds, these firms are mainly French firms. For this reason, the decline in the optimistic bias of analysts should be observable for earnings forecasts about French firms.

## 3.3 Econometric model

As mentioned above, CSA rules should reduce analysts' optimism in two ways: by curbing the conflicts of interest among dependent analysts and by promoting the resort to independent analysts. For this reason, we expect a reduction in *average* analysts' optimism consecutive to the CSA rules.[17] Hence, we estimate the following model:

$$\begin{aligned} OPTIM_{i,t} &= \alpha + \beta_1 CSA + \beta_2 GROWTH_t + \beta_3 EPSNEGATIVEi,t \\ &\quad + \beta_4 EPSDECLINEi,t + \beta_5 MONTH_t + \beta_6 COVER_{i,t} + \beta_7 SIZE_{i,t} + \epsilon \end{aligned}$$

Following Hovakimian and Saenyasiri (2010, 2014), the dependent variable measures the optimism of the analysts' forecast consensus. denoted $OPTIM_{i,t}$, it was built as follows:

$$OPTIM_{i,t} = \sum_j 100(F_{i,t} - A_{i,t})/P_{i,t}$$

where

$$F_{i,t} = \frac{\sum_j F_{i,j,t}}{N_j},$$

and $A_{i,t}$ is the the EPS realization of firm $i$ at date $t$, $P_{i,t}$ the stock price of firm $i$ at date $t$, $F_{i,j,t}$, the EPS forecast of firm $i$ by analyst $j$ at date $t$ and $N_j$ the number of analysts.[18] Then, to reduce the effects of outliers on the ratio distribution, we winsorized $OPTIM_{i,t}$ at 10%, setting all data below the 5st percentile equal to the 5st percentile and setting data above the 95th percentile equal to the 95th percentile.

$CSA$ is a dummy variable that equals 1 if the consensus forecast is issued after the enactment of rules governing CSA (i.e., after 18, May 2007) and 0 before (i.e., before 18, May 2007).[19] As a consequence, in line with H1, $\beta$ should be significantly negative.

[17] Using financial press releases and the internet websites of analysts' employers, we could classify analysts as independent (i.e., employed neither by a broker nor by an investment bank) and dependent (i.e., employed by a broker and/or an investment bank). It is noteworthy that the number of independent analysts in our data set has significantly increased (from 4 to 11, out of which more than a half is Anglo-Saxon) after the implementation of CSA rules. However, because our data set mainly contains forecasts issued by dependent analysts (714 against 58,270 issued by dependent analysts), we cannot check in what extend CSA rules reduced the optimism of independent analysts' forecasts.

[18] Prior research usually use share price or EPS as a measure of scale. Share price is often preferred because earnings can be negative (Heflin et al., 2003, Mohanram and Sunder, 2006, Herrmann et al., 2008, Richardson et al, 2012).

[19] Hence, the consensus forecast on May 2007 is associated to both

It is noteworthy that the CSA regulation was implemented in 2007, around the financial crisis period. In bad time, analysts are expected to be more optimistic to entice customers to buy stocks *despite a low economic growth*. On the contrary, when macroeconomic conditions improve, it is less necessary to issue optimistic forecasts (Kadan et al., 2009, Hovakimian and Saenyasiri, 2010, 2014). Hence, we ensure that the effect of $CSA$ cannot be attributed to poor macroeconomic conditions by controlling for the quarterly growth rate of GDP in the quarter of $t$ ($GROWTH_t$). The expected of the coefficient for $GROWTH_t$ is negative.

We also aim to capture the effect of the financial crisis at firm-level. Analysts are more prone to issue optimistic forecasts concerning negative earnings firms. Following Dowen (1996), Brown (2001), Duru and Reeb (2002), Heflin et al. (2003), Herrmann et al. (2008) and Hovakimian and Saenyasiri (2010), $EPSNEGATIVEi,t$ is a dummy variable that equals 1 if the actual earnings of firm $i$ at $t$ are negative and $EPSDECLINEi,t$ is a dummy variable that equals 1 if the actual earnings of firm $i$ at $t$ declined compared to t-1. Because this variable cannot be computed for the first month of the data set, it reduces the number of observations to 55,024. Both variables are expected to have a positive impact on the dependent variable.

We investigate the seasonal dimension of forecast activity. As emphasized by Libby et al. (2008) and Richardson et al. (2012), analysts are more prone to issue optimistic forecasts at the beginning of the fiscal year (to make firm securities more attractive) and they are more encouraged to issue pessimistic forecasts at the end of the fiscal year (to avoid negative earnings surprises on the announcement date). In line with Hovakimian and Saenyasiri (2010, 2014). To test for the existence of this walkdown to beatable forecasts behavior, we introduce the variable $MONTH_t$, that varies from 1 (for January) to 12 (for december). The expected sign of the coefficient for $MONTH_t$ is negative.

We also capture stocks' information environment by introducing in the estimation $COVER_{i,t}$, calculated as the number of analysts who follow firm $i$ at $t$ (Duru and Reeb, 2002, Herman et al., 2008, Hovakimian and Saenyasiri, 2010, Dubois et al., 2014) and $SIZE_{i,t}$, the log of firm $i$ market capitalisation at $t$ (Duru and Reeb, 2002, Herman et al., 2008, Hovakimian and Saenyasiri, 2010). The expected effect of $COVER_{i,t}$ and $SIZE_{i,t}$ on the dependent variable should be negative. Indeed, public information availability is enhanced for large firms and firms that are followed by a large number of analysts. In line with Lim (2001) and Das et al. (1998), analysts are entice to inflate their forecasts to maintain friendly relationships with firm management and to have an access to the information that managers selectively disclose. This behavior is likely to be stronger for firms with less available public information.

Table 1 (Appendix) lists the regression variables and describes how they are computed.

# 4 Results

In this section, we report our findings. We successively present univariate and multivariate results.

## 4.1 Univariate results

Tables 2 and 3 (also in the Appendix) report summary statistics and correlation coefficients, respectively.

Summary statistics reported in Tables 2 indicate that analysts' optimism, measured by the proportion of optimistic forecasts and the mean value of $OPTIM$, is higher before than after the enactment of CSA rules. But note that CSA rules have been implemented at the beginning of the financial crisis of 2007-2008[20]. For illustration, the mean values of $GROWTHi,t$ is significantly lower in the post-CSA than in the pre-CSA period. Similarly $EPSNEGATIVEi,t$ and $EPSDECLINEi,t$ are, in average, significantly larger in the post-CSA than in the pre-CSA period. Moreover, correlation coefficients between $CSA$ and $GROWTHi,t$ is negative and significant at the 1% level. Symmetrically, the coefficient between $CSA$ and $EPSNEGATIVEi,t$ (and between $CSA$ and $EPSDECLINEi,t$) respectively is positive and significant. Hence, previous research, which shows that analysts are more optimistic in bad time and when firms are in difficulty (Dowen, 1996, Brown, 2001, Duru and Reeb, 2002, Herrmann et al., 2008, and Hovakimian and Saenyasiri, 2010, 2014, Kadan et al., 2009), may explain the observation that analysts are more optimistic after the implementation of CSA rules.

Finally, the univariate analysts underlines the importance of controlling for the impact of the financial crisis both at firm- and macro-levels in our estimation.

## 4.2 Multivariate results

Table 4 reports results for OLS estimations of our model. All estimations correct for heteroscedasticity and within-broker error clustering.

As emphasized in the univariate analysis, it is important to capture the effect of the financial crisis, both at firm- and macro-levels. Hence, in addition to the control variables mentioned in Table 1, variant [1] include firm-year fixed effects (Hermann et al., 2008) while variants [2]-[3] include year fixed effects (Hovakimian and Saenyasiri, 2010, Guang et al., 2012, Dubois et al., 2014).

To start with, all variants in Table 4 provide very similar results as regards the sign and the significance of coefficients. This suggests that our results are quite robust.

The results reported in Table 4 (variants [1]-[3]) indicate for the coefficient $GROWTH$ is significant and negative. This result is consistent with the view that when macroeconomic conditions are favorable, it becomes less necessary for analysts to issue optimistic

[20]This point is also emphasized by Hovakimian and Saenyasiri (2014) in the case of the MAD.

forecasts, with the aim to entice customers to buy stocks (Hovakimian and Saenyasiri, 2010, 2014).

Turning to $EPSNEGATIVE$ and $EPSDECLINE$, our results show that they have a positive (and significant) impact on the dependent variable. In line with Dowen (1996), Brown (2001), Duru and Reeb (2002), Herrmann et al. (2008) and Hovakimian and Saenyasiri (2010), analysts are more optimistic when firms are in difficulty.

Consistent with Hovakimian and Saenyasiri (2010, 2014), the coefficient for $MONTH$ is significant and negative in all variants. This suggests the existence of a walk trend (Libby et al., 2008 and Richardson et al., 2012). Analysts are more prone to issue optimistic forecasts at the beginning of the fiscal year (to make firm securities more attractive) than at the end of the fiscal year (to avoid negative earnings surprises on the announcement date).

The results reported in Table 4 also indicates that, in opposition to the theoretical literature (Das et al., 1998, Lim, 2001) the coefficient for $COVER$ is significant and positive. As in other theoretical and empirical contributions (Das et al., 1998, Lim, 2001 and Hovakimian and Saenyasiri, 2010), the coefficient for $SIZE$ is significantly negative in variant [1]. However, in variant [2], we find an insignificant coefficient for firm size. This result is in line with Hovakimian and Saenyasiri (2010), Guang et al. (2012) and Dubois et al. (2014). Note that removing $SIZE$ from the regression model does not qualitatively change the coefficients for other explanatory variables (variant [3]).

Finally, in all variants, the coefficient for the variable of interest $CSA$ is significantly negative. For example, in variant [1], which has the largest $R^2$ value, $CSA$ is significant at the 1% level. This indicates that the optimism bias decreased by 0.22% of the stock price after CSA rules. This result provides some support to H1, suggesting that CSA rules have decreased analysts' overoptimistic EPS forecasts. By unbundling fees for both brokerage and investment research services and allowing mutual funds and brokers to enter into a CSA, these rules neutralize analysts' conflicts of interest. On the one hand, they reduce analysts' temptation to issue optimistic EPS forecasts to encourage their clients to buy stocks and to charge them brokerage fees. On the other hand, they promote (less optimistic) independent analysis. This finding provides additional support to the idea that financial regulation is not neutral on analysts' behavior. In line with Kadan et al. (2009), Clarke et al. (2011), Guang et al. (2012) and Hovakimian and Saenyasiri (2010, 2014), who addressed the impact of the GS, we show that splitting brokerage and financial research activities allows to mitigate financial analysts' optimistic bias.

### 4.3 Extension: combining CSA with the Global Settlement (GS)

In the literature review, we saw papers showing that the Global Settlement may have an international impact. It is interesting to complement the paper of Hovakimian and Saenyasiri (2014, cf. p.441) because their article does not include France. Does the Global Settlement also affect the level of optimism concerning French firms? The GS, in principle, 1/does separate brokerage form research and 2/ encourages the development of independant research. Hence, whereas the means and contexts are different, it aims at achieving the same goal as CSA. Does it substitute or complement the local CSA rule?

We build a GS dummy that is equal to one if the forecast is released after the annoucement of the Global Settlement (December 20, 2002), and run the same regressions as the previsous section, just adding the GS dummy. The equation tested becomes:

$$\begin{aligned} OPTIM_{i,t} &= \alpha + \beta_1 CSA + \beta_2 GS + \beta_3 GROWTH_t + \beta_4 EPSNEGATIVE_{i,t} \\ &\quad + \beta_5 EPSDECLINEi, t + \beta_6 MONTH_t + \beta_7 COVER_{i,t} + \beta_8 SIZE_{i,t} + \epsilon \end{aligned}$$

The sample contains 15,537 observations before GS, and 43447 after GS. To give an idea, the "12 big banks" implicated in the GS and evoked in Hovakimian et al. (2014) are also present in France. The sample contains the following brokers: Bear, Stearns and co. (210 observations), Deutsche Bank (2,170), Goldman Sachs (1,972), JP Morgan (1,805), Lehman Brothers (1,009), Merrill Lynch (2,274) Morgan Stanley (1,857), and UBS (2,506).

The results are presented in Table 5. The signs and aignificance of the previous coefficients are identical to those of the previous section. We confirm that the GS has an impact far beyond the US frontiers. Its sign is significantely negative in the three variants, showing that it does decrease the level of optimism about french firms. Furthermore, CSA remains significant, with a negative coefficient of the same magnitude. It illustrates that the two rules are complementary, as if they added up their forces, rather than offsetting one another.

## 5 Conclusion

The goal of this paper was to examine whether CSA rules reduced optimism in analysts' forecasts. Based on an I/B/E/S data set of EPS forecasts issued by 3,746 analysts for 58 French firms during the 1999-2011 period, we show that the optimistic bias declined significantly after CSA rules. In line with the literature on the effect of GS and the regulation FD on conflicts of interest among Anglo-Saxon financial analysts, this

finding suggests that financial regulation is not neutral as regards analysts' behavior and forecast bias.

Our results undoubtedly call for further research.

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# 6 Appendix

Table 1: List of regression variables

Variables described in Table 1 are defined on a set of one-year-ahead EPS forecasts issued by 179 analysts concerning ? French firms (1997-2007).

| | |
|---|---|
| **DEPENDENT VARIABLE** | |
| $OPTIM$ | Winsorized ratio defined as the difference between the EPS forecast consensus on firm $i$ at date $t$ and the realized EPS of firm $i$ at date $t$ divided by the firm $i$'s stock price at $t$ |
| **EXPLANATORY VARIABLES AND EXPECTED SIGNS** | |
| $CSA$ (-) | Dummy variable that equals 1 if the consensus forecast is issued after the enactment of rules governing CSAs (i.e., after 18, may 2007) and 0 before (i.e., before 18, may 2007). |
| $GROWTH$ (-) | Quarterly growth rate of real GDP in France on the quarter of month $t$ |
| $EPSNEGATIVE$ (+) | Dummy variable that equals 1 if the firm $i$'s EPS are negative at $t$, and 0 otherwise. |
| $EPSDECLINE$ (+) | Dummy variable that equals 1 if the firm $i$'s EPS declined at $t$ compared to $t-1$, and 0 otherwise. |
| $MONTH$ (+) | Variable that varies from 1 to 12 for each month of the year. |
| $COVER$ (-) | Coverage of the firm at $t$ (number of analysts who follow firm $i$ at $t$) |
| $SIZE$ (-) | Size of the firm (log of market capitalization of firm $i$ at $t$) |

Table 2: Statistical summary for regression variables (1997-2011)

PANEL A: Whole period (58,984 observations)

| % of optimistic forecasts | | | | 0.47 |
|---|---|---|---|---|
| Variables | Mean | Standard deviation | Min | Max |
| $OPTIM$ | 0.76 | 3.22 | -3.58 | 10.26 |
| $CSA$ | 0.341 | 0.47 | 0 | 1 |
| $GROWTH$ | 0.35 | 0.59 | -1.62 | 1.20 |
| $EPSNEGATIVE$ | 0.08 | 0.27 | 0 | 1 |
| $EPSDECLINE$ | 0.36 | 0.48 | 0 | 1 |
| $MONTH$ | 6.25 | 3.37 | 1 | 12 |
| $COVER$ | 24.37 | 8.31 | 1 | 48 |
| $SIZE$ | 9.50 | 1.07 | 5.48 | 12.12 |

PANEL B: Pre-CSA period (38,767 observations)

| % of optimistic forecasts | | | | 0.43 |
|---|---|---|---|---|
| Variables | Mean | Standard deviation | Min | Max |
| $OPTIM$ | 0.39 | 3 | -3.58 | 10.26 |
| $GROWTH$ | 0.52 | 0.36 | -0.18 | 1.20 |
| $EPSNEGATIVE$ | 0.07 | 0.25 | 0 | 1 |
| $EPSDECLINE$ | 0.29 | 0.45 | 0 | 1 |
| $MONTH$ | 6.08 | 3.36 | 1 | 12 |
| $COVER$ | 24.78 | 8.64 | 1 | 48 |
| $SIZE$ | 9.46 | 1.11 | 5.48 | 12.12 |

PANEL C: Post-CSA period (20,217 observations)

| % of optimistic forecasts | | | | 0.55 |
|---|---|---|---|---|
| Variables | Mean | Standard deviation | Min | Max |
| $OPTIM$ | $1.46^{+}$ | 3.49 | -3.58 | 10.26 |
| $GROWTH$ | $0.00^{-}$ | 0.76 | -1.61 | 1.07 |
| $EPSNEGATIVE$ | $0.09^{+}$ | 0.29 | 0 | 1 |
| $EPSDECLINE$ | $0.48^{+}$ | 0.49 | 0 | 1 |
| $MONTH$ | $6.59^{+}$ | 3.36 | 1 | 12 |
| $COVER$ | $23.57^{-}$ | 7.55 | 1 | 40 |
| $SIZE$ | $9.59^{+}$ | 1 | 6.08 | 11.92 |

$^{+++}$ indicate that the mean in the post-CSA period is significantly higher than in the pre-CSA period at the 1% level.

$^{---}$ indicate that the mean in the post-CSA period is significantly weaker than in the pre-CSA period at the 1% level.

Table 3: Correlation coefficients of regression variables

| | *OPTIM* | *CSA* | *GROWTH* | *EPSNEGATIVE* | *EPSDECLINE* | *MONTH* | *COVER* | *SIZE* |
|---|---|---|---|---|---|---|---|---|
| *OPTIM* | 1 | | | | | | | |
| *CSA* | 0.1569*** | 1 | | | | | | |
| *GROWTH* | -0.2062*** | -0.4221*** | 1 | | | | | |
| *EPSDECLINE* | 0.4615*** | 0.1889*** | -0.2604*** | 1 | | | | |
| *EPSNEGATIVE* | 0.6806*** | 0.0409*** | -0.0789*** | 0.2471*** | 1 | | | |
| *MONTH* | 0.0227*** | 0.0716 | 0.0097 | 0.0068 | 0.0146 | 1 | | |
| *COVER* | 0.0914*** | -0.0690*** | 0.0484*** | 0.0132*** | 0.0482*** | 0.4359*** | 1 | |
| *SIZE* | -0.0336*** | 0.0405*** | 0.0434*** | -0.0232*** | -0.1219*** | 0.0037*** | 0.5604*** | 1 |

*** denote significance at the 1% level.

Table 4: Results of OLS regressions

| Variables (expected sign) | [1] | [2] | [3] |
|---|---|---|---|
| $CSA$ (-) | -0.2160*** | -0.1148** | -0.1188*** |
| | (0.0292) | (0.0496) | (0.0486) |
| $GROWTH$ (-) | -0.2709*** | -0.3562*** | -0.3597*** |
| | (0.0148) | (0.0199) | (0.0209) |
| $EPSNEGATIVE$ (+) | 7.1219*** | 7.1625*** | 7.1752*** |
| | (0.1365) | (0.0663) | (0.0659) |
| $EPSDECLINE$ (+) | 2.0194*** | 1.9111*** | 1.9113*** |
| | (0.0455) | (0.0318) | (0.0318) |
| $MONTH$ (-) | -0.0243*** | −0.0309*** | -0.0286*** |
| | (0.0025) | (0.0033) | (0.0032) |
| $COVER$ (-) | (0.0305)*** | 0.0394*** | (0.0373)*** |
| | (0.0018) | (0.0022) | (0.0020) |
| $SIZE$ (-) | -0.3180*** | -0.0207 | |
| | (0.0512) | (0.0135) | |
| Year effects | no | yes | yes |
| Firm-year effects | yes | no | no |
| Nb. obs. | 54,962 | 55,024 | 55,024 |
| $R^2$ | 0.8785 | 0.5854 | 0.5861 |

All estimations are corrected for heteroskedasticity and within-broker error clustering.
** and *** denote significance at the 5% and 1% levels, respectively.

Table 5: Extension: Results of OLS regressions with GS

| Variables (expected sign) | [1] | [2] | [3] |
|---|---|---|---|
| $CSA$ (-) | -0.2172*** | -0.1172** | -0.1213** |
| | (0.0290) | (0.0497) | (0.0487) |
| $GS$ (-) | -0.4043** | -0.7160*** | -0.7138*** |
| | (0.1917) | (0.2670) | (0.2672) |
| $GROWTH$ (-) | -0.2711*** | -0.3571*** | -0.3607*** |
| | (0.0148) | (0.0198) | (0.0207) |
| $EPSNEGATIVE$ (+) | 7.1205*** | 7.1632*** | 7.1763*** |
| | (0.1365) | (0.0664) | (0.0660) |
| $EPSDECLINE$ (+) | 2.0188*** | 1.9108*** | 1.9110*** |
| | (0.0454) | (0.0318) | (0.0318) |
| $MONTH$ (-) | -0.0241*** | −0.0306*** | -0.0282*** |
| | (0.0025) | (0.0033) | (0.0031) |
| $COVER$ (-) | (0.0305)*** | 0.0395*** | (0.0373)*** |
| | (0.0018) | (0.0022) | (0.0020) |
| $SIZE$ (-) | -0.3201*** | -0.0213 | |
| | (0.0512) | (0.0135) | |
| Year effects | no | yes | yes |
| Firm-year effects | yes | no | no |
| Nb. obs. | 54,962 | 54,962 | 54,962 |
| $R^2$ | 0.8785 | 0.5863 | 0.5863 |

All estimations are corrected for heteroskedasticity and within-broker error clustering.
** and *** denote significance at the 5% and 1% levels, respectively.