

**GLOBAL GOVERNMENT
CONTRACTS DATA:
Investment Analysis Use Cases**

**White Paper by TenderAlpha.com
(a product of Bizportal.co)**

We work in close collaboration with our clients and strive to understand their long-term business needs in depth. TenderAlpha.com is the only source of public procurement awards on global scale aggregated in a format perfectly suitable for institutional investors. The team combines equally strong software development and data analytics capacities.

Our mission is to become a leading alternative data publisher in the government-sourced data sphere throughout provision of accurate and relevant data products, tailored to the needs of our clients. We strive to accelerate scalability of public sources coverage while also automate data aggregation in order to reach an ever-evolving level of data insight.



Testing Hypotheses:

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Use Cases: Hypothesis 1: Contract Award-Level Event Triggering Post-Announcement Abnormal Returns Powered by Sales Surprise Effect

- **Type of event/analysis:** Contract Award
- **Geographical scope:** Global
- **Frequency of signal:** Daily/Intra-Day (upon request for intra-day delivery)
- **Summary:** Test abnormal positive returns in the first day/few days (post-announcement drift) after contract award event for fixed price type of contracts
- **Type of event as a basis of analysis:** Contract award (+public projects news feed /optional/)

Stock prices react continuously to a stream of news about the company and external economic conditions. Each individual event may be seen as important news and/or even a shock to what would otherwise be a steady value for the stock. The market might be modeled as a system that determines stock prices based on a series of events. Most quantitative models are based on the presumption that the market operates efficiently with the exception of the cases of abnormal returns immediately after and/or the a few days of post-announcement drift (period could vary) after an important development happens related to the intrinsic value of the company in focus.

In the context of the data collected and aggregated by TenderAlpha.com (a product by Bizportal.co) - **government contracting announcements are worth being analyzed as a sales surprise type of event modeled as a positive signal for the firm's future prospects.** Any contract award made directly to a publicly listed company or a subsidiary of such is an event that could be monitored on daily basis and on global level exclusively through TenderAlpha thus allowing studying the effects of a large contract award immediately after and in the first 2-3 days following the award. The effect of the announcement could vary depending on **1) award amount, 2) level of material value as compared to the company's size, 3) concentration level of awards (exposure to procurement as a % capture rate of company's revenue, 4) type of contract.**

When using TenderAlpha's product, it is advised that testing models follow a few important details (please also consult the data dictionary delivered by the provider):

1. Use **Unified-Feed-Contracts-Data-Events** file for all countries
2. Note that the analysed company could be "**Direct_Awardee**" or "**Awardee_Parent**"
3. Focus only on "**Initial Contract Announcement**" type of events;
4. For the actual material signal analysis - use the **USD value** of "**Potential Total Value of Contract**" column
5. **Fixed price contracts** (and variations of such) from the values of "**Contract Pricing Type**" column tend to yield stronger signals
6. If possible, compare to the company's last fiscal year revenue as effect is expected to be larger for contracts that are material as compared to company's size (as a % of revenue)

The period that could be affected also varies **but it most often represents the first three to five trading days from the day after the announcement up to a couple of weeks in very isolated cases.** In the academic literature the abnormal return pattern is called post-earnings-announcement drift. The drift is in general positive for positive earnings announcement surprises and negative for negative earnings announcement surprises. BizPortal's research and available literature on the subject suggests that by using the event time methodology (*Dodd, P. and Warner, J. "On Corporate Governance: A Study of Proxy Contests", Journal of Financial Economics, 1983*) **there is a positive investor reaction (positive abnormal return of 0.40% to 0.75% on average but much larger in isolated cases of very large contracts) to contracts and clear indication of future receivables due to the investor interpretation of the award as a positive signal regarding the firm's future prospects.**

Ongoing research by BizPortal's analytical team has further indicated concrete examples of post-award announcement drift effect leading to abnormal returns in the period following the announcement. For example, Moderna Inc. (NASDAQ:MDRNA) shares rose as much as 21% after the company said the US government has agreed to pay as much as USD 483 million for the company to develop and test its Covid-19 vaccine. The contract award announcement was made on 16th of April and TenderAlpha's data feed would have delivered the contract award as part of its daily feed in the morning of the 17th of April. The announcement of obtaining a government project worth almost 500 million US dollars has had an enormous impact on the company's stock performance. Throughout the next 5 trading days the share price has registered a 20% increase compared to the first trading day following the news of the awarded contract. Shares of the company were up 14% to USD 46.38 at 10:31 a.m. ET (April 17, 2020). The earlier 21% gain was the company's biggest intraday rise since March 17, the day after it was announced that human trials of the vaccine had started. Furthermore, since the contract award Moderna's stock has proven to be an exceptional performer from a market standpoint. Its shares' return overtook the NASDAQ index by 16% for the period of 16.04-27.04. - 18,46% for Moderna vs 2,36% for NASDAQ. Such variation in returns is certainly understandable as the contract is more than 8 times Moderna's total annual revenue for 2019. The beta coefficient varies from 4.92 in the period 01.04-16.04 to minus -8.55 during the 3-day period after the news announcements - 17th, 20th, 21st. The large fluctuation shows the significant impact of the contract award to Moderna's share price for at least 3 trading days.

TenderAlpha.com also offers a complimentary data product TenderAlpha News - a media news feed strictly focused on government contracting around the world which could further support alpha signaling for events such as the described above. It is even more important for cases such as deal rumors, contract performance developments and any related news for non-award events. It is advised that award events are primarily monitored through the main contract feed.

Use Cases: Hypothesis 2: IDV/Framework Contract Award-Level Event Post-Announcement Abnormal Returns Powered by Sales Surprise Effect

- **Type of Event/Analysis:** Indefinite Budget Allocation Event/Framework Contracts Event (US IDV /EU Framework Contract)
- **Cerographical Scope:** USA, UK and EU-27
- **Frequency of Signal:** Daily/Intra-Day (upon request for intra-day delivery)
- **Summary:** Test abnormal positive returns (post-announcement drift) in the first few days after IDV (US)/Framework Contract (EU/UK) event
- **Type of event as a basis of analysis:** IDV/Framework event announcement (*+public projects news feed /optional/*)

Governments often use special contractual vehicles to award the potential delivery of goods and services to a particular supplier in the US case (or a group of suppliers in the EU context) for a longer-period of time instead of procuring on small portions. In the US government contracting context - such contracts are called Indefinite Delivery Vehicles (IDVs) while in UK and EU – framework contracts.

Stock prices react continuously to a stream of news about the company and external economic conditions. In the case of high-level government budgetary announcements and/or long-term contracts such as framework agreements (EU) and IDVs (US) the market is expected to react with a higher level of intensity to such phenomena especially having in mind the larger value and lack of popularity in mainstream media.

Unlike Europe, where framework contracts represent contracts on their own, in the US case - IDV events serve as the parent of one or a number of contract awards in the future. There are also IDVs that actually never develop into actual contract awards but could still represent government intention for significant purchases and therefore turn into a stock price signal (check **“Contracts Under IDV”** column). The effect of the announcement could vary depending on **1) award amount, 2) level of material value as compared to the company’s size, 3) concentration level of awards (exposure to procurement as a % capture rate of company’s revenue, 4) type of contract.**

It is advised that testing models follow a few important details (please also consult the data dictionary provided by the provider):

1. Use **“BizPortal-IDV-Events”** file for US and **“BizPortal Government Framework Contract Events”** file for EU-28 (including UK);
2. Note that the analysed company could be **“Direct_Awardee”** or **“Awardee_Parent”**;
3. For US – both **“Initial IDV Announcement”** and **“IDV Modification”** are worth testing as separate events that could yield surprise effect for EU - any framework contract is unique and there are no additional modifications;

4. For signal analysis of US IDV events - use the **USD value** of **"IDV Ceiling Amount"** column in the case of **"Initial IDV Announcement"** type of IDV events; analyse both **"IDV Ceiling Amount"** column and **"IDV Modification Amount"** column for **"IDV Modification"** type of IDV events;
5. For signal analysis of EU Framework events– use **USD Potential Total Value of Contract** or **"USD Current Event Amount "** as they are the same;
6. Effect is expected to be larger for events with larger amounts. If possible, compare to the company's last fiscal year revenue as effect is expected to be larger for announcements that indicate multi-year receivables that are material as compared to company's current size (as a % of revenue);
7. For US – **every IDV should be treated as a separate event with potential for positive signal** regardless of the fact that it has or does not have a contract-level award made under (there are no contract awards and respectively **no actual money obligated** for a portion of IDVs – please consult **"Contracts Under IDV"** column).

In the context of the data collected and aggregated by TenderAlpha.com (a product by Bizportal.co) – the immediate effect of **long-term budget allocation events and framework contracting announcements should be analyzed as sales surprise type of events and/or a major positive news about future earnings**. Any IDV/framework contract award made directly to a public listed company or a subsidiary of such is news that could be monitored on daily basis and on global level exclusively through TenderAlpha. BizPortal's research and available literature on the subject suggests that **the effect of IDV/framework contract announcement could be even larger than the regular contract award announcement**. Using the event time methodology (Dodd, P. and Warner, J., 1983) shows a positive investor reaction to government contracting and it could be speculated that reaction to certain IDV events with a clear indication of future receivables could be sometimes higher than an actual contract but it should also be considered an IDV events does not always represent a purchasing intention that will materialize.

Ongoing research by BizPortal's analytical team has further indicated concrete examples of post-award announcement drift effect for IDV/framework events leading to abnormal returns in the period following the announcement. For example, on 27th of September, 2018, Boeing Corp. (NYSE:BA) was selected by the AirForce to build the US Air Force's next training jet through an IDV announcement worth up to USD 9.2 bn over the life of the program. Through the TenderAlpha's IDV feed, the users would have received the contract by the morning of the 28th of September. Boeing shares edged higher after the news, to close up 0.6% at USD 367.38, while shares of Korea Aerospace fell more than 24% in Seoul. The post-announcement drift went on for a few days as Boeing's share price reached USD 394.28 on 3rd of October, 2018 which is a 6.8% increase for the 5 days between the announcement and the highest point on 3rd of October. The S&P increased with only 2% for the same period thus demonstrating the abnormal returns in the post IDV contract announcement days.

Use Cases: Hypothesis 3: Revenue Forecasting Based on Forward-looking Pipeline of Government Contracts Receivables as a Point in Time Data (per ticker)

- **Type of Event/Analysis: Revenue** Forecast of receivables (sales pipeline)
- **Geographical Scope:** USA
- **Frequency of Signal:** Daily/Monthly/Quarterly (depending on type of analysis)
- **Summary:** Model the government sales pipeline per ticker on dynamic basis (as a point in time) and forecast returns based on earnings forecast proxies
- **Type of event as a basis of analysis:** Actual monetary transactions and payment remainders under multi-transactional contracts as part of Federal contract awards

Stock analysts need to forecast revenue and growth to project what expected earnings will be. Forecasted revenue and growth projections are important components of security analysis, often leading to a stock's future worth. For example, if a company shows forecasts of a high rate of growth over several periods, it will command multiples that exceed the current market multiple. Modelling and predicting of equity future price, based on the current financial information and news, is of enormous use to the investors. In order to predict how some company, in which investor want to invest, would perform in future, they developed a number of analytical methods based on current and past financial data and other information about the company. Having an exact number for the USD value of a large chunk of a company's revenue could be enormously important and could be the basis of technical analysis that investors undertake to analyze and predict company's future stock price.

Making forward projections requires numerous inputs; some come from quantitative data and others are more subjective. The reliability and accuracy of the data drive the forecasts. In the context of the data collected and aggregated by TenderAlpha.com (a product by Bizportal.co) – **each public company's receivables upon each multi-transaction contract award made by the Federal Government in the US could be modeled very accurately.** At any point of time, TenderAlpha's data could show how much is Ticker X ought to receive in the next few years under Contract Y if Contract Y's potential contract value is larger than the current event amount (please consult data dictionary) and then it is expected to be materialized in multiple transactions over the next few years very clearly defined by the contract's end date. Majority of material contract awards are multi-transaction contract awards are multi-transaction awards. When all multi-transaction contracts of Company X and its subsidiaries are aggregated per ticker, **the investors could then analyze on dynamic basis (as a point in time) the government sales pipeline thus allowing for very powerful forecasts.**

A very important segment is the fact that tender awards represent actual information (high probability information). In this case, the discussion is focused on the option for analyzing a **particularly accurate pipeline of USD receivables** under each contract awarded to any given company.

For public companies, TenderAlpha provides analysts with the option to follow the dynamics of the payment cycle of contract awards on parent and subsidiary level and aggregated per ticker. Modeling the pipeline of government sales today vs. the same pipeline in a point of time in the past triggers very powerful findings.

In order to test the impact of the receivables from US federal government contracts on mid and long-term stock performance, users of TenderAlpha's government contracting data should use the unified contracts feed to do the calculations themselves OR alternatively use the specially designated deliveries of ***"forward-looking receivables per ticker" files*** (the latter is recommended). These files are derived from the main unified contracts feed and in a very easy to understand format show the receivables for the next 12-months and all future receivables for each of the major US contractors (two USD data columns/fields). This type of data is especially useful for companies for which government contracting represents a significant part of their overall revenue. Based on TenderAlpha's revenue capture rate analysis (government contracting as a percentag of overall revenue), forward-looking receivables files are made available only for the major US contractors with high-exposure to government procurement and the data is aggregated on a daily basis and in a point-in-time historical perspective.

By using the "Forward-looking-receivables-per-ticker" files for each company, there are two theories that could be tested:

- 1) Back-test changes in ***"12-m USD receivables"*** and ***"all future receivables"*** data fields and compare to stock performance changes for the monitored period (as per testing preference)
- 2) Focus on the effect that **1) new contract awards** (not modeled as forward-looking receivables as such are unknown from a point-in-time perspective) and **2) "single-transaction" contracts** could have if analyzed on the basis of the future receivables (revenue forecasts). That is to back-test the difference between the actual amount received by a company (calculated as the sum of all ***"Current Event USD Amounts"***) for a given 12-months period starting from Date X to Date Y (where Date Y=Date X+12 months later) and the 12-months USD receivable figure (the figure from the forward looking revenue forecast file) as the remainder of known multi-transaction contracts on a 12-months perspective. Research by the data provider and clients indicates that there is a positive correlation between a large difference between actual and forecasted revenue and stock performance.

Important Note: In the context of US federal contracting, single-transaction contracts are all contracts where ***USD value of "Potential Total Value of Contract"*** column is equal to the ***USD value of "Current Event Amount"***.

Use Cases: Hypothesis 4: Fundamental Analysis on Long and Mid-Term Effects of Contract Award Concentration Dynamics

- **Type of event/analysis:** Contract Award
- **Geographical scope:** Global
- **Frequency of signal:** Monthly/Quarterly/Yearly
- **Summary:** Equity movement prediction in long/mid-term perspective based on the dynamic analysis of contract award concentration
- **Type of event as a basis of analysis:** New contract awards only (+public projects media news feed /optional/)

Modelling and predicting of equity future price based on the current financial information and news is of enormous use to the investors. In order to predict how some company, in which investor want to invest, would perform in future, they develop a number of analysis methods based on current and past financial data and other information about the company. Financial health and project pipeline of a company are the bases of technical analysis that investors undertake to analyze and predict company's future stock price.

In the context of the data collected and aggregated by TenderAlpha.com (a product by Bizportal.co) - government contracting announcements are worth being analyzed as an indicator of financial health and future pipeline of revenue and strategic projects for the company. Any contract award made directly to a public listed company or a subsidiary of such is an event that could be monitored on daily basis and on global level exclusively through TenderAlpha's data product. In Hypothesis 4 - we recommend collection of all of the new contract awards for a certain period of analysis and running MoM/QoQ/YoY type of analysis to understand the general direction of new business awarded by the government to the company. Strong signals defining the technical analysis for a certain company that is very much involved in public procurement could be determined even by just analyzing how material the sum of new business for the period is as compared to company's size. The mid/long-term effects of this type of analysis could vary depending on 1) aggregate amount of new awards; 2) level of material value as compared to the company's size; 3) concentration level of awards (exposure to procurement as a % capture rate of company's revenue).

When using TenderAlpha's product, it is advised that testing models follow a few important details (please also consult the data dictionary delivered by the provider):

1. Use ***Unified-Feed-Contracts-Data-Events*** file for all countries;
2. Note that the analyzed company could be "***Direct_Awardee***" or "***Awardee_Parent***";
3. Focus ONLY on "***Initial Contract Announcement***" type of events;
4. Collect the USD value of "***Potential Total Value of Contract***" column of all "***Initial Contract Announcement***" for the analyzed company and for the monitored period (monthly/quarterly/annual);

5. Compare to the aggregate amount of new contract awards of the company calculated in the same manner (as in Step4) for a previous period (MoM/QoQ/YoT, etc.);
6. If possible, compare the aggregate USD amount of all new awards for the period to the company's last annual and/or quarterly revenue as effect is expected to be larger for group of contracts that turn out to be material as compared to company's size (as a % of revenue).

TenderAlpha.com also offers a complimentary data product TenderAlpha News - a media news feed strictly focused on government contracting around the world which could further support alpha signaling and technical analysis on selected equity for events such as the described above. It is even more important to identify the contracts that attracted widespread media attention as this usually leads to stronger market response. Furthermore, news on government contracting sometimes includes cases such as deal rumors, contract performance developments and any related news for non-award events that are not part of the main contract TenderAlpha feed by BizPortal.

Use Cases: Hypothesis 5: ESG Rating and Analysis – Participation in “Green” and Socially Responsible Procurement and Risks Related to Market Concentration and Bad Governance

- **Type of Event/Analysis:** Sustainable Investing Analysis
- **Geographical Scope:** Global
- **Summary:** Provide ESG ratings for companies based on the type of involvement in public procurement worldwide
- **Frequency of Signal:** Any

Sustainable investing is a nebulous, if not often disingenuous category, yet its skyrocketing growth is no less than staggering. In 2018, 290 ESG-oriented open-ended and exchange-traded funds were launched globally. According to a report by the Global Sustainable Investment Alliance, at least **USD 30.7 trillion** is now held in sustainable or **green investments, up 34% from 2016**. “*These money flows account for one-third of the tracked assets under management,*” according to Bloomberg. Sustainable investing encompasses a menu of strategies that can be used in combination including but not limited to exclusionary **norm-based screening** (also for activities/companies involved in countries/industries deemed objectionable or not meeting set of norms such as the Ten Principles of UN Conduct), **positive/best-in class screening** (based on ESG performance), active ownership (high involvement with portfolio companies).

Having said that, the data collected and aggregated by TenderAlpha.com (a product by Bizportal.co) could be particularly indicative in two main directions:

1. **Providing dynamic empirical ratings for strong ESG performance** based on participation of companies in environmentally sustainable (green) and socially responsible purchasing by the government
2. **Providing negative/exclusionary screening based on risks** related to suspicious behavior and exposure to government markets with low level of transparency

Green and socially responsible purchasing could be monitored guided on clear definitions and criteria (based on strategic documents by UN, the European Commission and the US federal procurement authorities). The TenderAlpha’s contract feed offers a clear “**Yes/No**” **Green Contract**” indication for each contract from North America and Europe. Thus, the participation in environmentally sustainable government projects for each supplier could be monitored.

On the other hand, detecting industries/countries with concentration of contract awards in a single supplier and/or a group of related suppliers could be easily detected and thus reveal **bad governance risks that could affect stock value**. On company level analysts could use **red flags** indicating suspicious favorable behavior of any buyer towards a certain supplier especially when the case is related to a very sudden turn of events and large exposure of contracts awards as a percentage of company’s overall revenue. BizPortal’s research has indicated that signals on **possible corruption and rent-seeking behavior** towards some companies in certain countries (especially in developing countries) often later develop in negative news stories and in most cases lead to severe devaluation of company’s stock. Therefore, market value of a company with **bad corporate governance** mechanisms and operating in less competitive markets should be lower than that of a company without similar governance problems.

Use Cases: Hypothesis 6: Macroeconomic Implications –Monitoring Public Procurement Spending per Day vs. Other Global Economic Forecasts

- **Type of Event/Analysis:** Macroeconomic Indexing
- **Geographical Scope:** Global
- **Frequency of Signal:** Daily/Weekly/Monthly/Quarterly

Analyzing the financial markets from a macroeconomic perspective is forward-looking: the price is a reflection of what the market thinks the price will be six to 12 months in the future rather than in the present day. When it comes to the stock market, gross domestic product (GDP) is the benchmark for global growth and contraction. Therefore, being able to predict movements in GDP is the key to predicting stock market movers. Leading economic indicators help predict GDP and macroeconomic perspectives in general. Some of the most powerful indicators that are used by analysts include a) ISM Manufacturing Report on Business; b) global PMI (purchasing managers' index); c) U.S. buildings permit index.

In that regard, TenderAlpha.com (a product by Bizportal.co) offers the **Global Government Purchasing Index**. The proprietary index offers monitoring of **the daily USD value of all government purchasing per country and globally** through TenderAlpha 's indexing solutions providing a compressive overview options with 10+ years of contracts data history. BizPortal's research indicates that under certain limitations and based on isolated date test samples government procurement in certain countries and sectors could have similar implications like trailing corporate purchasing (e.g. global PMI Index). **It could be used alongside leading indicators to create a view on the economy and thereby predict and/or fundamentally analyze future market movements.** The index is truly global however, data collected and aggregated in TenderAlpha's product from North America, UK, EU-27, and Australia offers the highest reliability.