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An Introduction to ESMA's Commitments of Traders Reports: Do Hedgers Really Hedge?

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86/2019

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August 5, 2019

Abstract

We introduce a novel type of commodity futures positions report issued by the European Securities and Markets Authority (ESMA). This report is interesting to researchers for two reasons: First, it allows analyzing European commodity markets, which, compared to US-American markets, have hitherto largely been ignored by the literature. Second, this new type of report offers the advantage of breaking down positions not only by the different types of traders but also by the underlying trading motives. This paper studies these new data for different energy and metal futures contracts. The results suggest that the extent of speculative positions might have been underestimated in earlier studies.

Keywords: Commodities, European Futures Markets, Speculation, ESMA

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1 Introduction

The question of whether speculative trading is harmful or beneficial to commodity futures markets, is a frequent theme in the media, political discourse and scientific research. Obviously, investigating this issue requires accurate measures of speculative activity. The most common tool for measuring speculation in commodity futures markets are trader position data gathered by the CFTC. These data are published on a weekly basis and provide a breakdown of open interest by different trader types for a large number of US-American commodity futures.[1] These data are, however, criticized by numerous researchers as the data do not distinguish between different trading motives (see e.g. Cheng & Xiong 2014, Duffie 2014). In particular, once a trader is classified as a speculator, all of his or her positions are viewed as speculative. Conversely, once a trader has been identified as commercial, all of his or her positions are categorized as hedging. This procedure, consequently, involves the danger of under- or overestimating the proportion of speculative vis-à-vis hedging positions in the market.

But while the CFTC reports have since the 1980s provided at least some insight into the open interest composition of US-American markets, there were, until recently, no equivalent reports for commodity futures markets in Europe. This changed, however, when in 2018, the European Securities and Markets Authority (ESMA) started publishing position reports for European commodity futures in the style of the CFTC's Commitments of Traders reports. These new reports offer two key advantages to researchers: First, they allow analyzing speculation on European futures markets, which have in the past, due to the lack of appropriate data, largely been ignored by the literature. Second, and more importantly, the ESMA reports do not only break down positions by the different trader types. Instead, they also distinguish for each type of trader between risk-reducing and

[1] For a detailed description of the different CFTC reports, see e.g. Sanders et al. (2010) or Irwin & Sanders (2012).

speculative positions. Thus, the open interest held by a hedger is not automatically interpreted as a pure hedging position.

This paper provides a detailed description of the new ESMA reports. We discuss the different categories of trader types and trading motives in the reports and address the issue of data availability. Thereafter, we select a total of ten European commodity futures markets, including three energy contracts, six industrial metal contracts and a contract for carbon-dioxide emission allowances. Various graphical illustrations are used to display how the open interest of these markets is divided between speculative vs. risk-reducing positions and the long and short positions held by the different types of traders. Lastly, we compute a number of speculation measures in two ways. First, we differentiate between different trader types, second, we distinguish between the different trading motives.

Our analysis reveals that measures of speculative activity are much higher when they are based on trading motives instead of trader types. Consequently, the extent of speculative positions might have been underestimated in earlier studies, largely because the former ignore the speculative positions taken by commercial traders. Concerning the CFTC's Commitments of Traders reports, this suggests that they could significantly be improved by further breaking down positions depending on the traders' underlying trading motives. Moreover, we urge European policy makers to adjust reporting standards, such that more markets, in particular agricultural markets, are covered by the ESMA reports.

The remainder of this paper is structured as follows: Section 2 summarizes the legal background of the ESMA reports and details how they are structured. In Section 3, we discuss the availability of observations and provide descriptive statistics of the reported positions. Section 4 analyzes the levels of speculative and hedging activity in European commodity futures markets. Finally, Section 5 concludes and derives implications for public policy.

2 ESMA's Commoditments of Traders Reports

The surge of commodity prices in 2008, during the time of the so-called financialization, has led to an intense debate about the impact of speculative positions in commodity futures markets. While speculation in US-American markets could readily be gauged from the trader position data gathered by the CFTC, speculation in European markets could only be estimated using rather rough proxies such as the speculation ratio, which divides trading volume by open interest. In order to eliminate this problem, European policy makers introduced three pieces of legislation, which have established a standardized reporting scheme for open positions held in European commodity futures markets.

As specified in Art. 58 of Directive 2014/65/EU, futures exchanges operating in Europe are under this new reporting standard obliged to compile two types of reports, each of which breaks down the open positions held by different types of traders in their market. The first of these reports must be produced on a weekly basis and is made public by the European Securities and Markets Authority (ESMA). The second report must be provided on a daily basis to the national competent authorities and is not made public. In what follows, we consequently focus on the first of these reports. For simplicity, we will refer to them as "ESMA reports".

The submission timeline and format of these weekly reports is determined by Commission Implementing Regulation (EU) 2017/953. It stipulates that the ESMA reports refer to position breakdowns at the close of business weeks. Thus, they typically refer to open positions held at the end of Friday. The reports must distinguish between positions held by five different types of traders: "Investment firms or credit institutions", "Investment funds", "Other financial institutions", "Commercial Undertakings" and "Operators with compliance obligations under the European trading scheme for carbon dioxide emission allowances". The first of these groups includes predominantly investment banks. The second category

mainly covers exchange-traded funds, pension funds and hedge funds, while the third group largely consists of insurance companies and re-insurers. Traders that engage in the physical production and processing of the underlying commodities are classified as commercial undertakings. The last category comprises operators of carbon dioxide emission intensive installations, such as factories and power plants, which are since 2005 required to participate in the European Union Emission Trading Scheme (ETS). As they are also involved in the production of physical goods or the provision of energy, we will treat them as a second group of commercial traders.

As a considerable number of European commodity futures markets are rather illiquid and dominated by a small number of traders, three reporting thresholds have been defined in Art. 83 of Commission Delegated Regulation (EU) 2017/565 to limit the amount of information that can be learned from the ESMA reports about the behavior of specific traders. If there are less than 20 open position holders of a specific futures contract at the close of a business week or if the total open interest of that contract is less than four times the deliverable supply, exchange operators are exempt from submitting the position breakdown for this contract in that week. Moreover, if there are less than five position holders of a given trader type, their number is not reported, even if the other thresholds are met and the rest of the report is published.

The reports of the exchanges summarize how many position holders their were per trader category in any given week. Moreover, they record their aggregate long and short positions and how these have changed since the last reporting date. The key advantage of these reports, in opposition to those of the CFTC, is that they do not only break down positions by the different trader types. Instead, they further distinguish for each type of trader between positions that "reduce risk directly related to commercial activities" and positions that pursue other, i.e. speculative, motives. The complete breakdown of positions in the ESMA reports

is visualized in Figure 1.

[Figure 1 about here.]

By enabling us to compare positions that are motivated by risk reduction vs. positions that are motivated by speculation, this breakdown allows measuring speculation more accurately than other reports, e.g. those of the CFTC, that only distinguish between different trader types. This is because when working with reports of the latter type, one must make the implicit assumption that speculative traders exclusively hold speculative positions, while hedgers only hold risk-reducing positions. In this case, speculative activity by hedgers and hedging activity by speculators would remain undetected. As the position breakdown of the ESMA reports enables us to compute speculation measures in both ways, i.e. either differentiating by trading motive or by trader type, the ESMA reports enable us to do two things: First, they allow us to accurately measure speculative activity in European commodity markets. Second, they also allow us to make inferences about how inaccurate speculation is gauged when only distinguishing by trader type and not by trading motive. If speculation measures based on trading motives lead to higher values than speculation measures that only differentiate between the different types of traders, this would be a clear indication that the market features a large amount of otherwise undetectable speculation that stems from traders who are classified as hedgers.

3 Data and Descriptive Statistics

This section first provides a brief overview over the availability of ESMA position reports. Thereafter, it summarizes the number of traders and open positions taken by the different trader types. Finally, this section explores the nature of these traders' positions, i.e. which traders tend to prefer long positions

over short positions and who rather engages in speculative as opposed to risk-reducing trading activities.

The earliest ESMA reports start in January and February 2018. Since then, i.e. until the end of July 2019, a total of 117 different European commodity futures contracts have at least once been included in the reports. Around 60 of them have been included more than 70 times, i.e. they have continuously been covered throughout the entire existence of the ESMA reports. Of these, we select ten for the subsequent analysis of our paper. Our selection includes three energy contracts, namely futures for Brent crude oil, gasoil and WTI crude oil. Moreover, we consider six industrial metal contracts for aluminum, copper, lead, nickel and zinc. Lastly, our sample includes a futures contract for carbon dioxide emission allowances (EUA) under the European Union Trading Scheme. The three energy contracts as well as the emission allowance contract are traded at the ICE Futures Europe, while the industrial metal contracts are traded at the London Metal Exchange (LME). A prominent omission from our selection are agricultural futures contracts. This is because these are rarely part of the ESMA reports and thus not suitable for analysis. Most of them, e.g. coffee, cocoa, and sugar futures trading at the ICE Futures Europe, have only once been included in the reports in February 2018 and not since.

Figure 2 displays the average number of persons holding open positions in the futures markets included in our sample. The highest number of traders are active in the three energy contracts of our sample, i.e. the markets for Brent crude oil, gasoil and WTI crude oil with an average of 2261, 1412 and 542 persons, respectively. Within this group of commodities, it is in particular a large number of investment funds and other financial institutions that take open positions. Concerning the industrial metal contracts, we observe that most traders active in these markets are either investment funds or commercial undertakings. The fewest traders are active in the tin market, where on average only 132 persons

hold open positions.

[Figure 2 about here.]

Obviously, the largest group of traders does not necessarily hold the largest number of open positions. The latter are shown in Figure 3. Again, the most dominant markets are those for Brent crude oil and gasoil. In these markets, 4.7 and 2.0 million open positions are held on average, respectively. However, also the markets for aluminum and emission allowances feature large numbers of open positions. In terms of open positions, the energy markets are dominated by commercial undertakings and financial institutions that are neither categorized as investment firms or investment funds. In the metal markets, commercial operations hold a large share of open positions, but investment firms take even larger positions. The same types of traders are also the most dominant in the futures markets for carbon dioxide emission allowances. Similar to the number of traders, it is again the tin market that with only 39 thousand open positions features the least amount of trading activity.

[Figure 3 about here.]

Figure 4 depicts the average number of positions per trader taken by the different types of traders. Here, it becomes apparent, that across the board investment firms take the largest individual positions. In the cases of aluminum and EUA futures, their average individual positions even amount to 20 and 22 thousand contracts, respectively. A second group that takes large individual positions are commercial undertakings and operators with compliance obligations under the European carbon trading scheme. Conversely, investment funds take, despite their large aggregate positions (s. above), small individual positions that in many cases do not exceed 1000 contracts per trader. An even more extreme case is that of traders who participate in the ETS for carbon dioxide emission allowances.

While these traders hold some positions in the metal markets of our sample, they hold no positions in any of the energy markets. Neither do they hold positions in the market for EUA futures. The latter might be explained by the fact that these traders can cover there demand for emission allowances by either purchasing them in the primary auctions of the ETS or by buying (or selling) them on the secondary spot market.

[Figure 4 about here.]

Next, we seek to explore the trading behavior of the different types of traders in the ESMA reports. For this purpose, we compute their weekly "net-long" and "net-risk-reducing" positions. We do so by first subtracting for each category of traders their total short position, i.e. short positions stemming from both speculative and risk-reducing trading, from their total long position. Second, we subtract their total speculative position, i.e. speculative positions that are either long or short, from their total risk-reducing position. The results of these calculations are visualized in Figure 5. Each dot in this diagram resembles the aggregate position that a specific trader type has taken in a given week. Different colors are used to distinguish the different types of position holders. Points to the left of the vertical zero-line resemble situations, where a certain trader type took an aggregate net-short position. Points to the right of it suggest net-long positions. By analogy, points below the horizontal zero-line indicate net-speculative positions, while points above it document net-hedging positions.

[Figure 5 about here.]

Concerning the horizontal dimension of the plots, that is whether positions are net-short or net-long, we observe that the positions of investment firms, depicted in light gray, follow no clear pattern across different markets, as they are predominantly net-long in some markets, and net-short or around evenly split

between net-long and net-short in others. Within markets, however, the weekly aggregate positions of investment firms do follow certain patterns. They are e.g. almost always net-long in the markets for Brent crude and gasoil futures, but net-short in the markets for WTI crude and EUA futures. Similar findings are obtained for the industrial metal markets. In the markets for aluminum, copper and lead, their positions are almost net-long, while they are almost always net-short in the nickel market.

The positions of investment funds, indicated by red dots, exhibit no clear pattern in terms of being predominantly short or long either. Their positions are typically clustered around the center of the diagram. Only in the markets for Brent crude oil and gasoil, they deviate from this pattern and tend to be net-long. Yellow dots are used to indicate the positions of other financial institutions. These positions are except for Brent, gasoil and EUA futures mostly found on the right hand side of the diagram, suggesting that these traders prefer to hold net-long positions.

One of the strongest preferences for either long or short positions is that of commercial traders. Their positions, which are highlighted in blue, are generally located towards the far left of the diagram, suggesting that these traders hold a far greater number of short than long positions. They, however, deviate from this pattern in the markets for WTI crude oil and EUA futures, where they take net-long positions. Lastly, traders participating in the ETS exhibit no strong preference in either direction. This is not surprising, given the earlier finding that they typically do not hold large positions anyway. The few positions they hold in the metal markets tend to be rather long than short.

Of course, the more interesting dimension of the plots in Figure 5 is the vertical one. If a group's aggregate positions are located towards the bottom of these plots, this group of traders is mainly motivated by speculative motives. Conversely, if the majority of its aggregate positions lie above the horizontal zero-line,

this group, at least as a whole, tends to engage in hedging. Here, the key result is that almost all groups tend towards the bottom of the plots, thus most aggregate positions are speculative. Concerning investment firms, investment funds and other financial institutions, this finding is obviously not surprising. What does stand out, however, is the fact that in many markets, the aggregate positions of commercial undertakings are just about as often in the speculative region of the plots than they are in the risk-reducing region. Thus, many of the positions taken by alleged hedgers are in fact speculative. An exception to this rule is the market for EUA futures, where the aggregate positions of commercial undertakings are truly risk-reducing. On the other extreme, not a single aggregate position of commercial traders in the market for tin futures is motivated by risk-reduction.

4 Measuring Speculative Activity

The previous section established that a considerable number of the positions taken by commercial traders are not guided by hedging motives. To investigate the extent of speculation more thoroughly, we consider various well-established metrics to gauge the amount of speculative activity in the market. Each of these metrics relates the number of speculative positions to the number hedging positions in the market. The values of these metrics naturally depend on how positions are either classified as speculation or hedging. As explained before, one can on the one hand differentiate positions by the types of traders holding them. On the other hand, one can distinguish positions by the motives of the traders holding them. Given the results of the previous section, it is obviously the latter approach that promises to capture speculative activity more precisely, as the former approach would misclassify all of the speculative positions taken by commercial traders.

The key advantage of the ESMA reports is that their detailed breakdown of

positions allows to compute speculation measures in both of the ways described above. If one differentiates by trader type, the total number of speculative positions in the market is computed by summing up the positions of all non-commercial traders. In the case of the ESMA reports, these are investment firms, investment funds and other kinds of financial institutions. By analogy, the total number of hedging positions in the market is computed by summing up the positions of all commercial traders, i.e. in case of the ESMA reports, commercial undertakings and traders with compliance obligations under the ETS. Conversely, if one differentiates by trading motives, the total number of speculative positions in the market is computed by summing up all positions that are not held for risk-reduction purposes, regardless of who holds these positions. The total of hedging positions is then again computed analogously as the sum of all positions that are held to reduce risk. This paper considers three different measures of speculation and, using both of the two approaches described above, computes each of them twice. If the two approaches produce strongly different results for the same speculation metric, this is a clear sign that one of them, presumably the one that differentiates by trader type, either grossly under- or over-estimates the level of speculation in the market.

The first speculation metric, which has e.g. been used by Manera et al. (2016) is referred to as the total share of speculation T, and is computed as

$$T_t = \frac{SL_t + SS_t}{SL_t + SS_t + HL_t + HS_t}\,, \tag{1}$$

where SL_t and SS_t denote the long and short positions of speculators in week t, while HL_t and HS_t denote those of hedgers. The second measure, which we call the long share of speculation L, only focuses on the amount of long speculation

in the market, and is thus computed as

$$L_t = \frac{SL_t}{SL_t + HL_t} \,. \tag{2}$$

Lastly, we also consider Working's (1960) T index of excessive speculation W, which is computed as

$$W_t = \begin{cases} 1 + \dfrac{SS_t}{HS_t + HL_t} & \text{if } \; HS_t \geq HL_t \\ \\ 1 + \dfrac{SL_t}{HS_t + HL_t} & \text{if } \; HS_t < HL_t \end{cases} \,. \tag{3}$$

This index is bounded below by unity, which resembles a situation where the positions of hedgers are perfectly offset by the opposing positions of speculators. The index deviates from unity, if the number of these opposing positions more than offsets the net position of hedgers. In case of $HS_t \geq HL_t$, i.e. when hedgers take an aggregate net-short position, the index increases with the number of short positions of speculators SS_t. Conversely, in the case of $HS_t < HL_t$, i.e. when hedgers are net-long in the aggregate, Working's T increases with the number of long positions of speculators SL_t. The term "excessive" is therefore not be understood in a normative manner, instead it merely refers to the "excess supply" of speculative positions in the market.

[Figure 6 about here.]

The barcharts in Figure 6 display the average values of the different speculation measures for each of the markets in our sample. Each measure is computed twice, first by distinguishing between trader types, as one would do when using CFTC-style data, then by distinguishing between trading motives. The former is indicated by gray bars, the latter by blue bars. The shares of total open interest held by speculators (T) range between 50 and 67 percent when distinguishing by trader types. However, when distinguishing by trading motives, the values

range from 61 to 75 percent. Similar observations are made for the share of long open interest held by speculators (L). When using the first approach for energy and metal contracts, L ranges from 52 to 74 percent as opposed to from 74 to 85 when using the second approach. Notice that the values of L are in the EUA futures market, regardless of which method is used, considerably lower than in the other markets. They are 25 and 44 percent when differentiating by trader type or trading motive, respectively.

The difference between the two approaches of measuring speculative activity is even greater when measuring speculation using the Working's T index. When only distinguishing by trader type and thus lumping together speculative and risk-reducing positions of in particular commercial undertakings, W ranges from 1.4 to 2.3 across the different energy and metal markets. Conversely, when differentiating positions by the underlying trading motives and thus disentangling in particular the positions held by alleged hedgers, W ranges from 2.0 to 2.6. Again, lower levels of speculation are found for the EUA futures market, where W equals 1.3 or 1.6, respectively.

5 Summary and Conclusion

Using a novel set of European trader position data, this paper was able to make two contributions to the literature: First, it is the first paper to provide an overview over the recently launched ESMA reports and to assess the level of speculation in various European energy and metal futures markets. Second, given the detailed breakdown of positions in the ESMA reports, that not only differentiates between different trader types but also between different trading motives, we were able to study the extent to which speculation measures differ when either basing them on the former or the latter approach of classifying open positions. Our findings regarding speculation, therefore, extend beyond the European case.

The main results of this paper can be summarized as follows: In terms of open interest, European energy markets are largely dominated by commercial undertakings and financial institutions such as insurance groups that are neither classified as investment firms nor investment funds. Metal markets, are also dominated by commercial undertakings, but even more so by investment firms. In most markets, commercial traders take an aggregate short position, while non-commercial traders typically hold long positions. Concerning speculation, we find that many positions taken by commercial undertakings are in fact not motivated by risk-reduction. Consequently, when computing several frequently used speculation measures, we find substantially higher levels of speculation when classifying open positions based on trading motives instead of trader types.

Our work, therefore, has important implications for both policy makers and researchers alike. First, the debate surrounding the validity of the Masters hypothesis and related claims concerning the detrimental effects of financial speculation is not settled yet. Numerous papers have in the past used position data from the CFTC and established that speculative positions have no significant impact on returns or their volatility. These results might, however, be driven by the fact that the CFTC reports only breakdown positions by trader type, such that a considerable share of speculative positions could remain hidden in these reports, if they stem from traders categorized as commercials. Therefore, we advise American policy makers to augment the CFTC reports by adding a trading-motive-based breakdown of positions. In that case, researchers will be able to more accurately measure speculation and thus also more precisely capture its potential impacts on return dynamics.

Second, the lack of ESMA reports on agricultural markets is highly regrettable. After all, the issue of financial speculation in commodity markets is heavily focused on and most fiercely debated concerning agricultural futures markets. Potential reasons for these missing reports are either a lack of data coming from the

exchanges or that open positions in agricultural markets generally do not reach the reporting thresholds. Therefore, we urge policy makers in Europe to either enforce the position reporting more strictly or lower the reporting thresholds for agricultural futures contracts.

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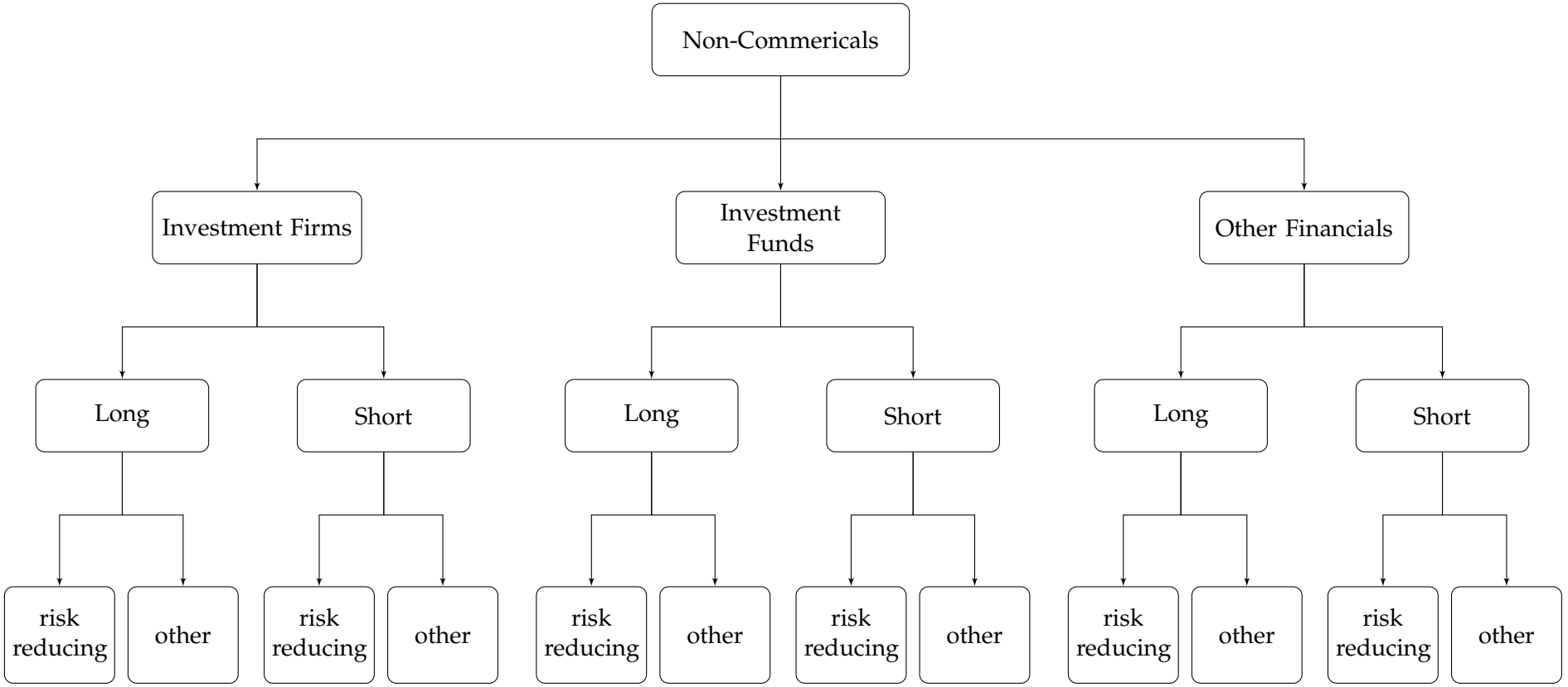

Figure 1: Structure of Non-commercial Positions in the ESMA Reports

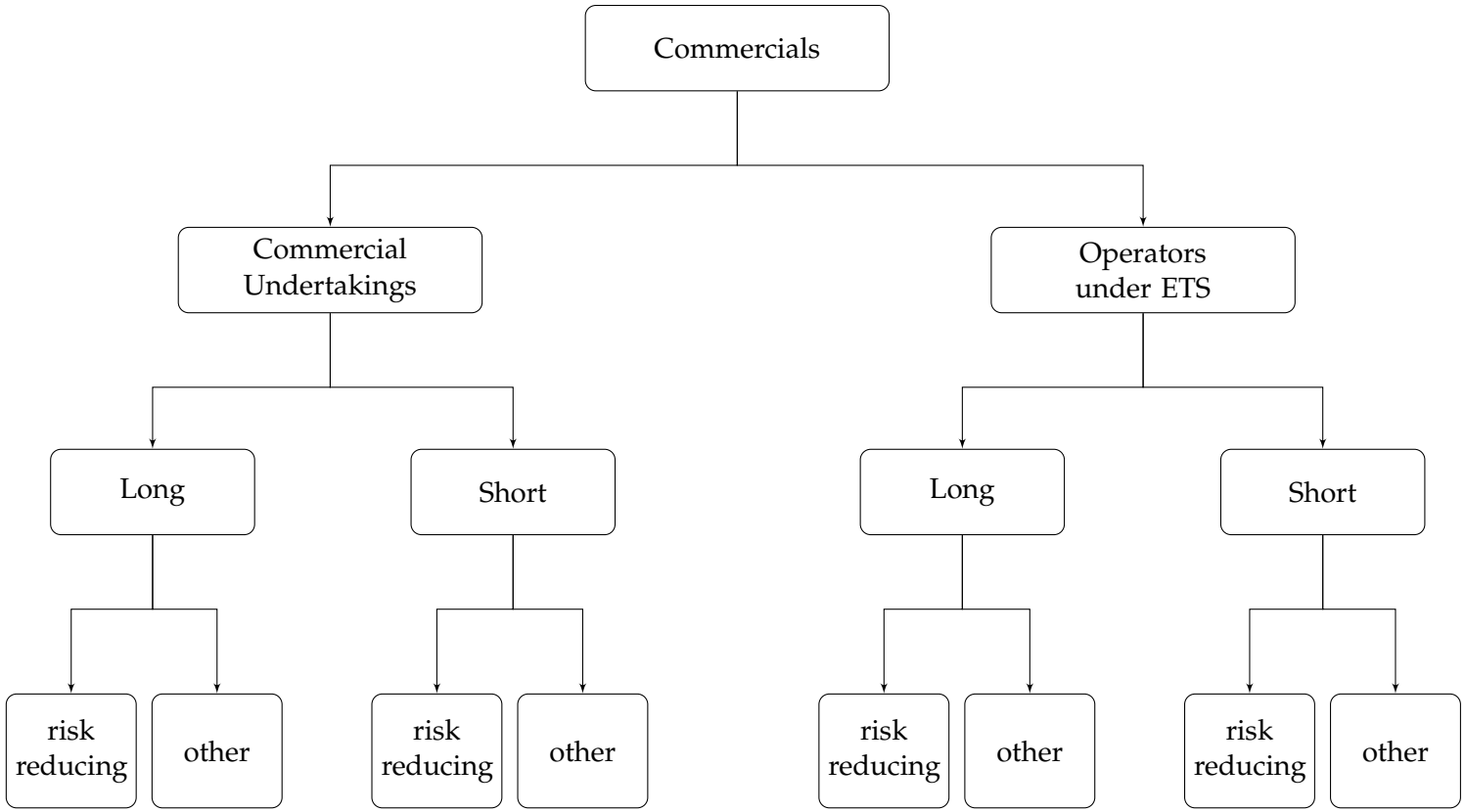

Figure 1 (cont.): Structure of Commercial Positions in the ESMA Reports

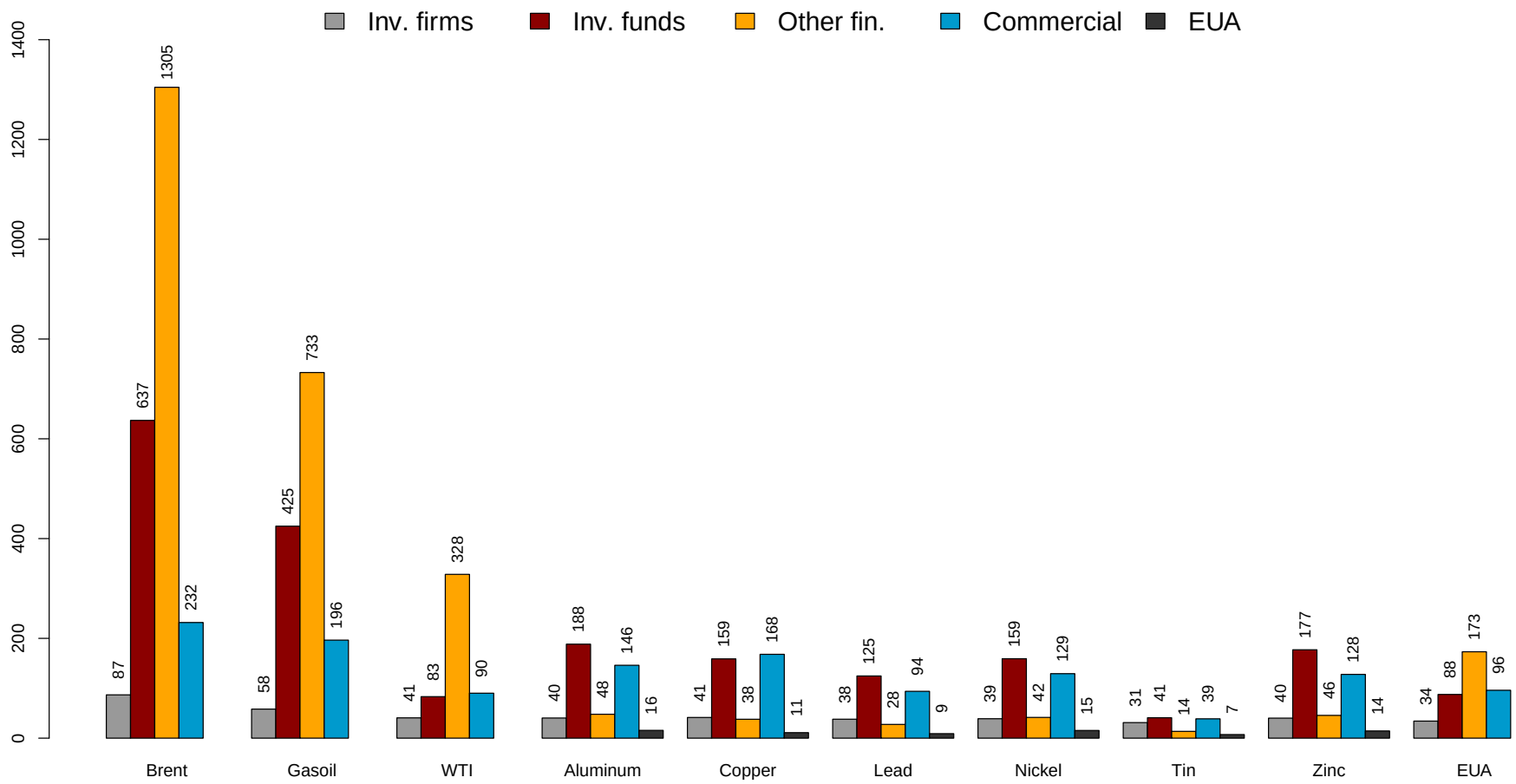

Figure 2: Number of Traders

Note: The figure displays the average number of traders holding open positions in the different futures markets.

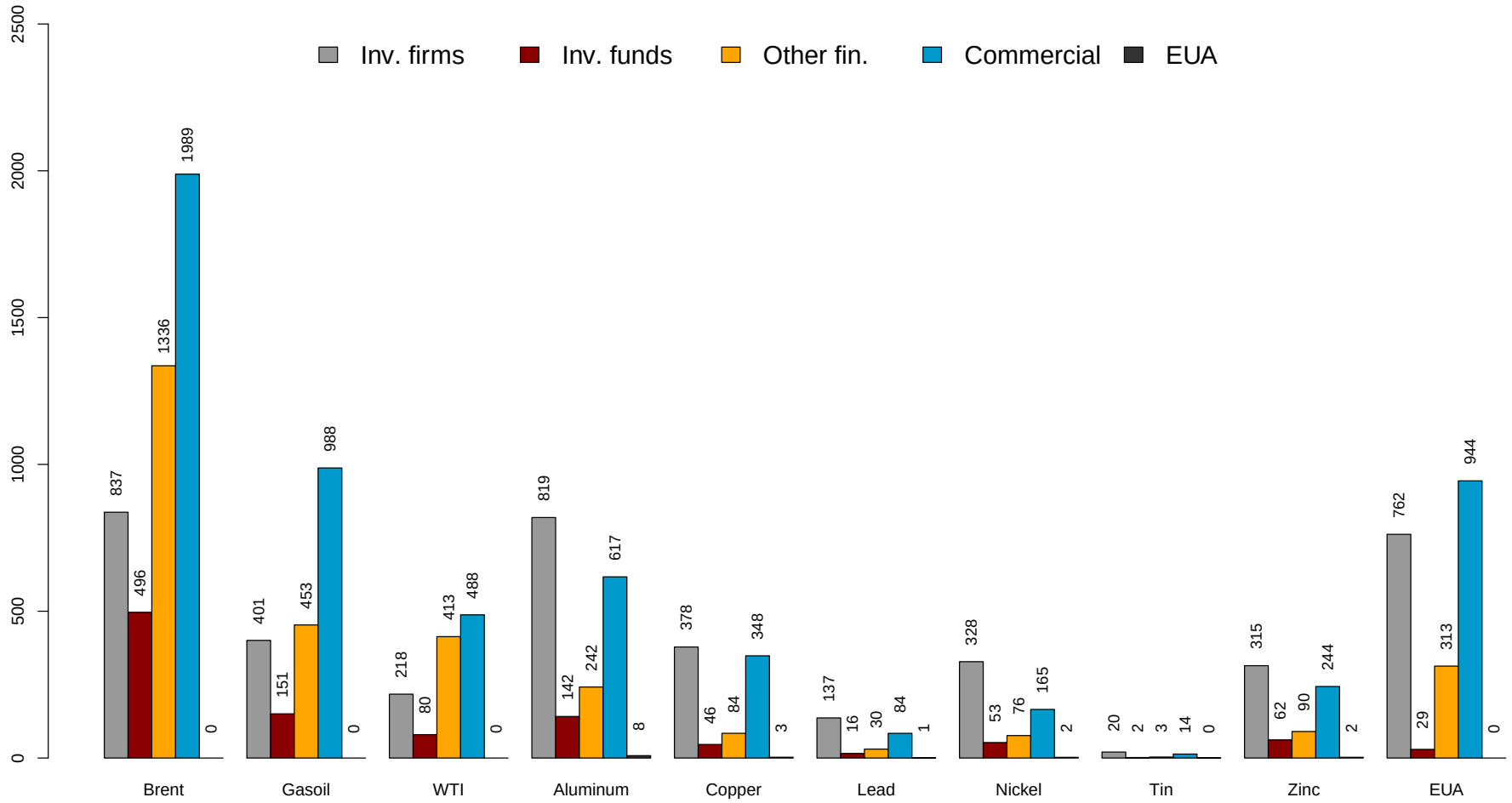

Figure 3: Open Positions

Note: The figure displays the average number of open positions (in 1000s) held in the different futures markets.

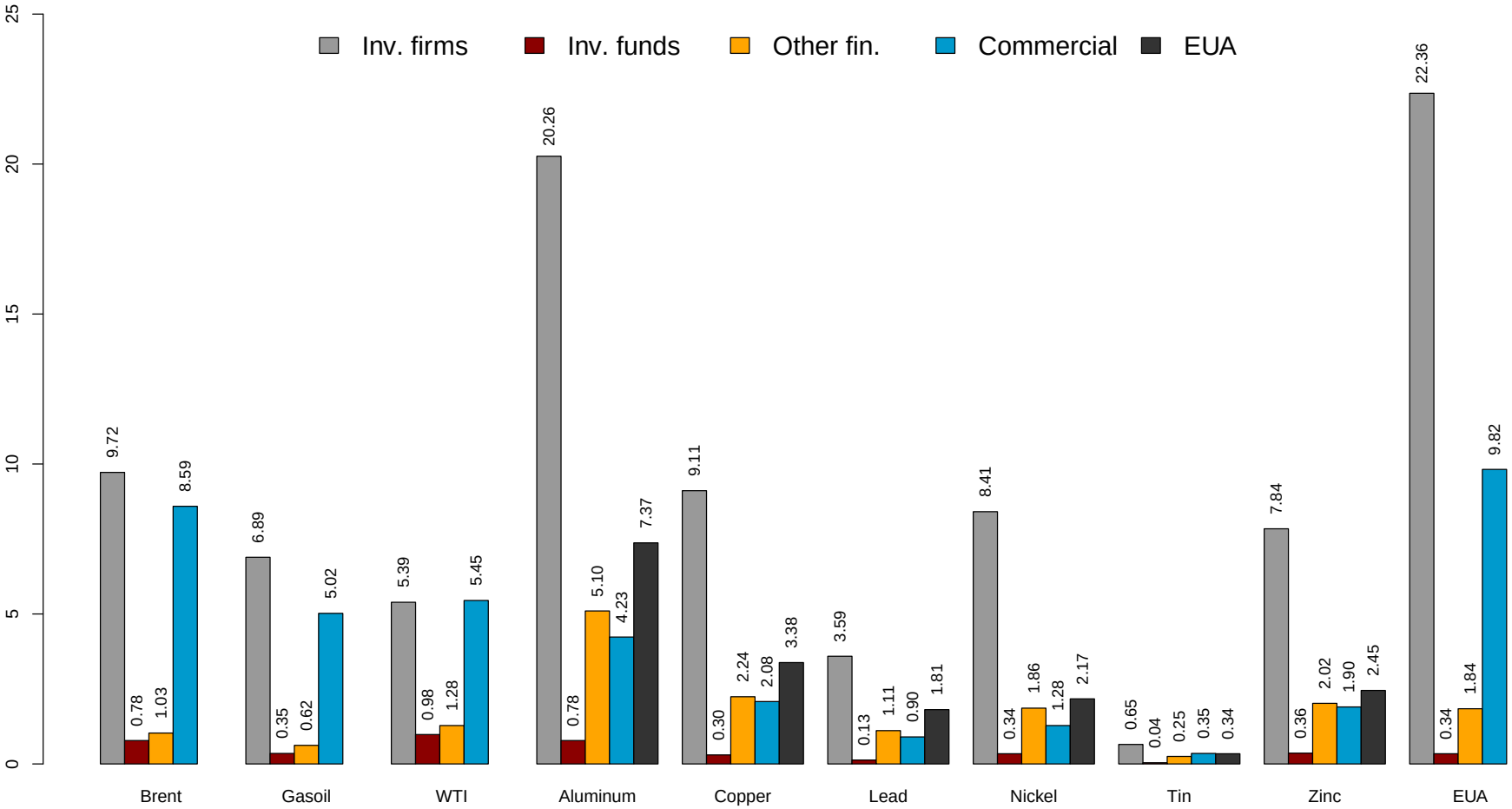

Figure 4: Open Positions per Trader

Note: The figure displays the average number of open positions per trader (in 1000s) in the different futures markets.

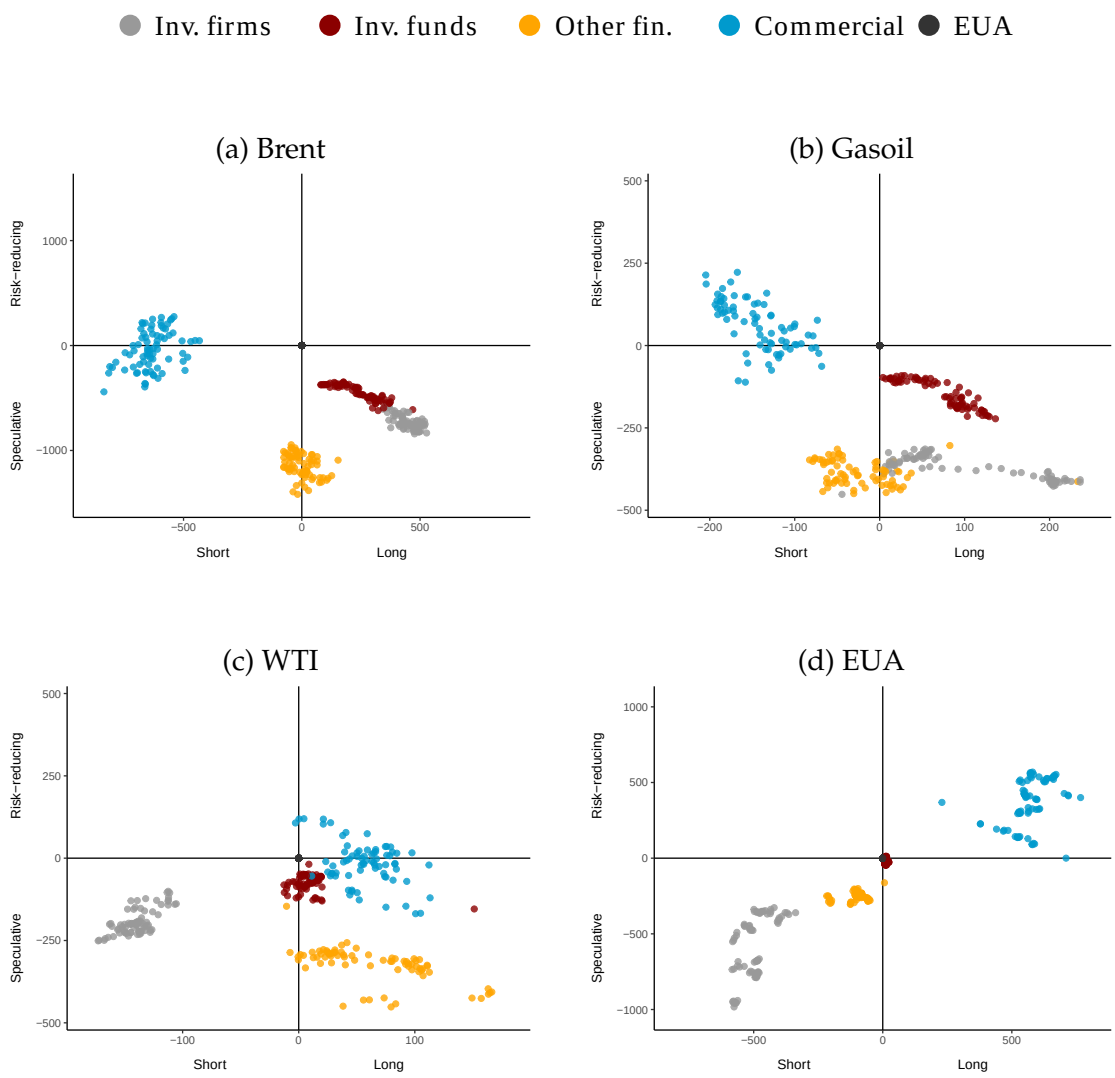

Figure 5: Visualization of Net Positions (Energy and EUA Contracts)

Note: Each dot in this figure resembles one weekly aggregate position taken by one of the different trader types. Net-long positions are located to the right of the vertical zero-line and net-short positions to the left of it. Analogously, net-risk-reducing positions are located above the horizontal zero-line and net-speculative positions below of it.

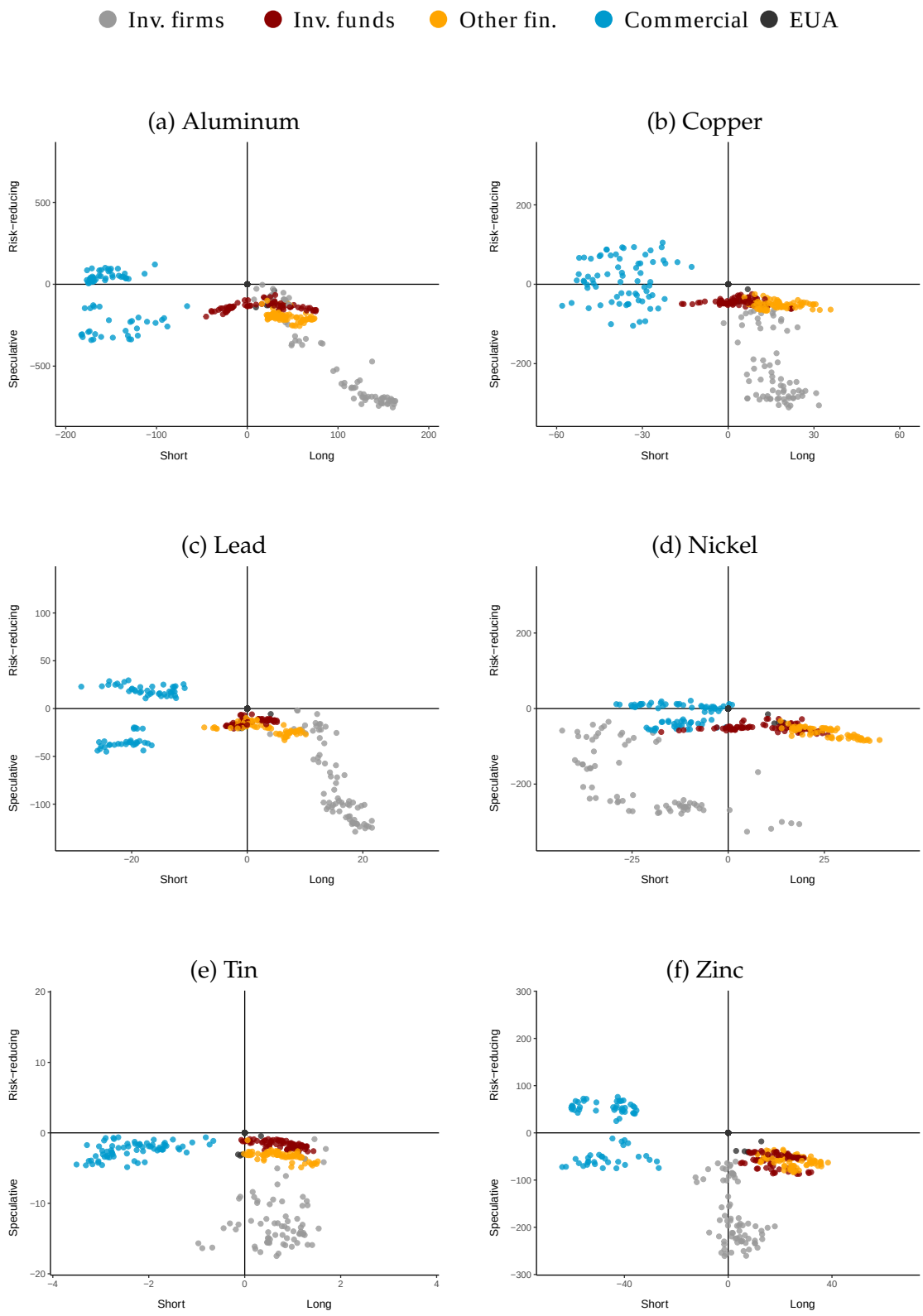

Figure 5 (cont.): Visualization of Net Positions (Industrial Metal Contracts)

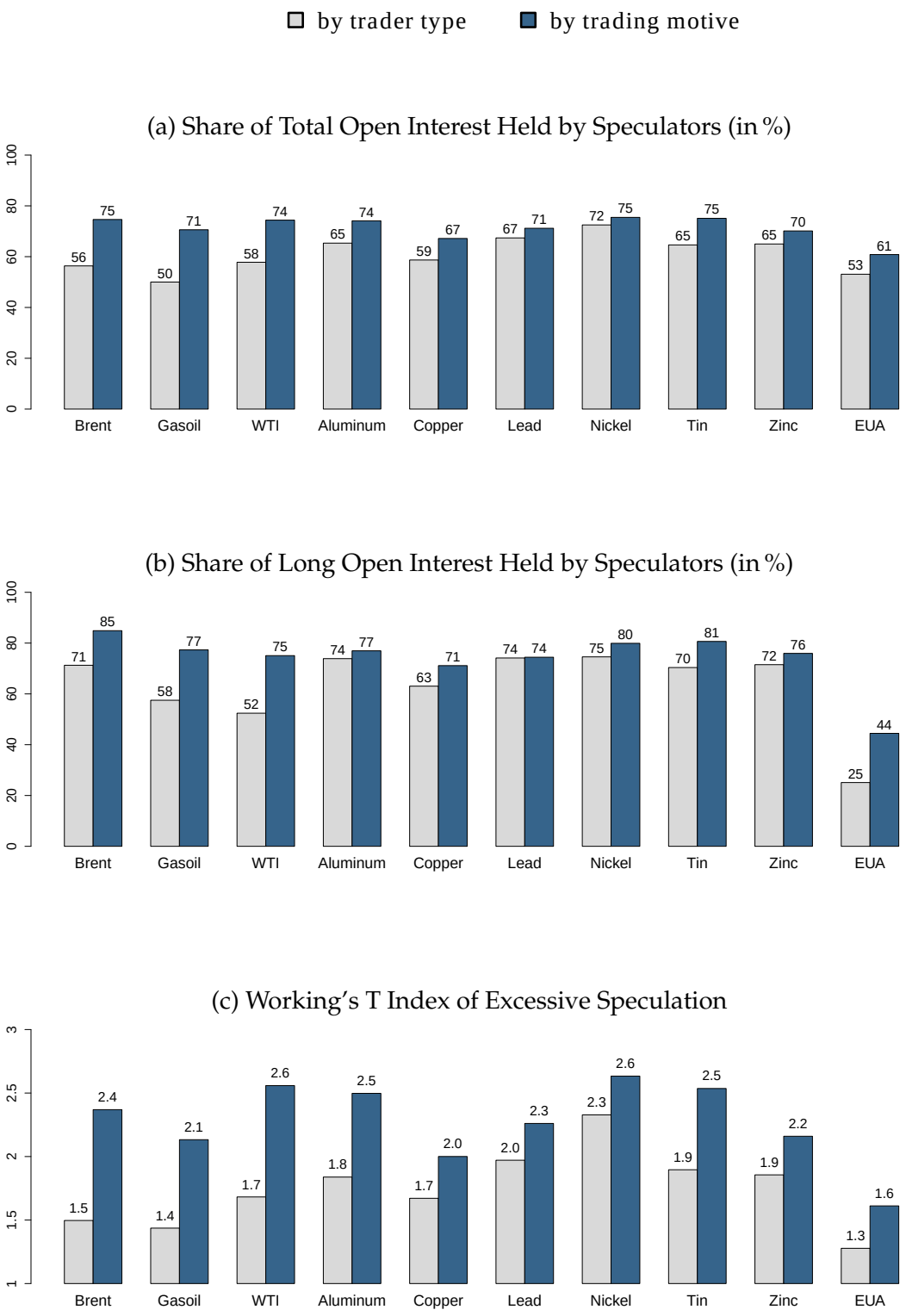

Figure 6: Measures of Speculative Activity