

Tower Research Capital Europe B.V.

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Pillar 3 disclosures for the year ended 31 December 2019

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1. Introduction: Pillar 3

The following disclosures are provided in accordance with the Pillar 3 rules as set out by the Articles 435-451 of the European Capital Requirements Regulation (“CRR”), with disclosure made only to the Articles applying to this firm. The disclosures have not been audited by the Company’s statutory auditors.

2. Pillar 3 overview and description of business

Tower Research Capital Europe B.V. (“TRC Europe” or “the Company”) is a €730,000 investment firm, authorized and regulated by Netherlands Authority for the Financial Markets (“AFM”). The principal activity of the Company during 2019 was proprietary trading in equities and futures on a high frequency algorithmic basis across various European exchanges. The data presented in this report refers to TRC Europe’s regulatory position as at 31 December 2019. The Company did establish a UK branch during 2019 as well and the analysis of risk weighted assets is included within this assessment. The Company was not regulated during 2018 and so no comparative data is disclosed in this Pillar 1 disclosure

The prudential framework for investment firms under EU CRR and EU CRD consists of three “Pillars”:

- Pillar 1 sets out the minimum capital requirements for the Company;
- Pillar 2 deals with the Internal Capital Adequacy Assessment Process (“ICAAP”) and the Supervisory Review and Evaluation Process through which the Company and the regulator satisfy themselves regarding the adequacy of capital; and
- Pillar 3 aims to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess key pieces of information on a firm's capital resources, risk exposures and risk assessment process.

These Pillar 3 disclosures have been prepared solely to comply with regulatory requirements to provide public information on the Company’s risk management objectives and policies, its capital position, its approach to assessing the adequacy of its capital and its exposure to credit, market and operational risks.

The disclosures will be issued as a minimum on an annual basis and will be published on the Company’s website www.tower-research.com/london as soon as practicable after the completion of its annual report and financial statements.

3. Risk Management objectives and policies

The Board’s approach to risk management is to ensure that all material risks are defined, understood and effectively managed through controls and other risk mitigation techniques.

Risk Management is the process of identifying the principal risks to the Company achieving its strategic objectives, establishing appropriate controls to manage those risks and ensuring that appropriate monitoring and reporting systems are in place to ensure that controls remain robust and evolve with the changing risk profile of the Company.

The Company's operations expose it to certain prudential risks such as credit risk, liquidity risk, operational risk and market risk. The Company considers prudential risks regularly and seeks to limit the adverse effects on the financial performance of the Company.

The Board of Directors has overall responsibility for the establishment and oversight of the Company's risk management framework. The Company's risk management policies are established to identify the risks faced by the Company, to set appropriate risk tolerance limits and controls, and to monitor risks. The risk management appetite and policies are reviewed regularly to reflect changes in market conditions and the Company's activities.

A number of control functions, such as daily risk metrics and profit/loss measurement, are produced at a business or trading desk level. Each trading desk monitors positions and risk factors through the Company's real time risk platform, with breaches escalated through the risk management process. All trading is subject to extensive pre and post trade controls, with new product and new limit requests subject to a formal request, review and approval process, by the global risk management team. Key risk metrics are monitored with frequencies as appropriate to the risk. Tolerance levels are set and tracked through quarterly review and the overall Company governance process.

The Risk committee meets monthly to review key risk indicators, and is attended by business heads and risk, legal and compliance regional heads.

Overall Company market risk is monitored by the European chief risk officer. The chief risk officer is part of an independent global risk function across the Tower group.

4. Scope of Application

The disclosure requirements of EU CRR apply to TRC Europe only. The Company is not part of a consolidated group for consolidated supervision purposes and hence the disclosure has been made on a solo basis.

5. Own Funds

The Company's policy is to remain well capitalised and soundly financed. TRC Europe will maintain a strong capital base to support the development of the business and to ensure regulatory capital requirements are met at all times.

The table below summarises the capital resources position at 31 December 2019.

	31 December 2019 (€'000s)
Called up equity share capital	730
Capital Contribution reserve	35,908
Audited retained earnings	(302)
Tier 1 capital	36,336

Deductions	-
Holdings in common equity tier 1 instruments of financial institutions	-
Adjusted Tier 1 capital	33,815
Total Capital Resources	33,815

Capital resources equates to TRC Europe's audited financial statements net assets for the year ended 31 December 2019 so there is no need for a reconciliation table.

6. Risk exposure overview

The material risks to which TRC Europe is exposed to are detailed below, explaining how the Company manages these risk exposures on a day to day basis. In addition, the relevant Pillar 1 methodologies and the resulting requirements at 31 December 2019 are disclosed.

6.1 Market risk

Market risk is the potential for changes in the value of investment positions due to market changes, including interest and currency rate movements as well as fluctuations in the prices of investment positions. Market risk is directly impacted by the volatility and liquidity in the markets in which the related underlying financial instruments are traded.

The Company is exposed to market risk both on intraday and overnight portfolios. Risk limits are set and monitored to prevent excessive intraday and overnight risk accumulating.

Foreign exchange risk is the risk of loss due to the fluctuation of exchange rates. For non-trading assets and liabilities, exposures are monitored and where necessary reduced through foreign currency spot transactions.

Under Pillar 1, TRC Europe is exposed to the following components of market risk:

- Position risk on its equity positions;
- Commodity risk on its commodity future exposures;
- Interest rate risk on its debt instruments; and
- Foreign currency exchange risk on its trading book and overall balance sheet.

For position risk on its equity positions, TRC Europe applies the standardised equity method as detailed in Articles 342-343 of the EU CRR.

TRC Europe only trades non-securitisation debt instruments. As a result, Article 336 of the EU CRR is applied as the methodology for calculating the specific risk element of the interest rate risk on its trading book. The duration-based calculation, as detailed in Article 340, is used to calculate the general market risk element of the interest rate risk. Foreign exchange risk is calculated using Article 352 of the EU CRR.

The table below summarises the Pillar 1 market risk requirement with the comparative data for 2018. Year on year fluctuations depend entirely on the 31 December balance sheet, which can vary heavily from one year to the next

Market Risk Requirement	31 December 2019 (€'000s)
Equity Position Risk Requirement	8,314
Interest Rate Risk Requirement	15
Foreign Currency Position Risk Requirement	2,679
Total	11,008

6.2 Credit risk

Credit risk is the risk of financial loss due to the failure of a counterparty to perform according to the terms of a contract. TRC Europe bears the risk if issuers whose securities or other instruments it holds, clearing agents, exchanges or other financial intermediaries default on their obligations to TRC Europe.

The credit quality of counterparties with whom TRC Europe transacts is monitored by the Management and Risk functions. All institutional counterparties are highly rated.

6.2.1 Exposure by geographic distribution (£'000s)

Below are the 31 December 2019 and 31 December 2018 credit risk exposure disclosures, showing the credit exposures by the type of exposure class and geographical distribution.

31 December 2019

Credit exposure class	Europe (€'000s)	Americas (£'000s)	Total
Claims on institutions	158,912	-	158,912
Corporates	6	9,029	9,035
Other items*	621	-	621
Total	159,539	9,029	168,568

*Other items include prepayments, other debtors and tangible fixed assets.

6.2.2 External credit Assessment Institution

TRC Europe applies the standardised approach to calculating credit risk under Pillar 1. TRC Europe uses the ratings of Standard & Poor ("S&P") and Moody's to assess the credit quality of all exposure classes. The tables below show the breakdown of exposure value, and risk weighted values after applying the haircuts determined by categorisation in each credit quality step for the year ended 31 December 2019.

31 December 2019

Credit exposure class	Credit Step	Risk Weighting	Total Exposure (€'000s)	Risk Weighted Exposure	Credit risk Requirement
Institutions	1	20%	158,912	31,782	2,542
Central government	1	20%			
Institutions	3	20%			
Institutions	5	50%			
Institutions	Unrated	20%			
Corporates	Unrated	100%	9,035	9,035	723
Other items	Unrated	20%	621	621	50
Other items	Unrated	100%			
Total			168,568	41,438	3,315

6.3 Counterparty credit risk

Counterparty credit risk is defined as the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flows. Given the nature of trading, TRC Europe has low counterparty credit risk with little exposure to long settlement transactions and risk limited to financial derivatives exposures to a central counterparty.

TRC Europe applies the mark-to-market method in accordance with Article 274 of the EU CRR for calculating the exposure value for the purposes of measuring counterparty credit risk. For the year ended 31 December 2019, the counterparty credit risk requirement for TRC Europe was €258,898.

6.4 Liquidity risk

Liquidity risk is the risk that the Company either does not have available sufficient financial resources to enable it to meet its obligations as they fall due, or can secure such resources only at excessive cost.

The Company manages liquidity risk tolerance in line with its liquidity policy. The Company will ensure, as far as possible, that it has sufficient liquidity to meet its liabilities when due, without incurring unacceptable losses or risking damage to the Company's reputation. The Company maintains a highly liquid balance sheet, consisting primarily of cash, highly liquid marketable securities and short-term receivables; the Company has a very low liquidity risk appetite.

The Company monitors its liquidity position daily, which is reviewed by senior management and finance. Key risk indicators are collated and reported on a monthly basis. Cash positions are monitored and reconciled daily by the Finance function. The liquidity policy of the Company is reviewed by senior management and approved by the Board of Directors.

6.5 Operational Risk

Operational risk is the inherent risk of material loss or other adverse impact resulting from inadequate internal processes, people or systems or from external events. The Company seeks to minimise operational risk through a structured controls framework and monthly monitoring of key operational risk indicators.

TRC Europe measures Operation Risk under Pillar 1 using the fixed overhead requirement given the Firm only conducts proprietary trading and its business is cleared via a general clearing member.

As at 31 December 2019 this fixed overhead requirement was €5,657,356.

6.6 *Business/strategic risk*

Business/strategic risk is the risk arising from a change in business, both as a result of internal decisions and external factors and events such as an economic downturn characterised by stock market falls and reduced business activity. As part of business planning, senior management consider general stress and scenario testing to then set appropriate risk appetite levels for the business.

6.7 *Securitisation risk*

Securitisation risk is the risk that capital resources held against a securitised transaction are insufficient. The Company does not have any exposure to securitisations, either on or off balance sheet, and has no contingent liabilities in respect to any vehicle.

6.8 *Residual risk*

Residual risk is the risk that credit risk mitigation is less effective than expected and therefore the risk is retained by TRC Europe. TRC Europe does not take advantage of any credit risk mitigation and so exposure to this risk is minimal.

6.9 *Concentration risk*

TRC Europe believes that the firm is not materially exposed to concentration risk given the business is diversified in the asset classes it trades as well as its clearing arrangements.

6.10 *Interest rate risk in the non-trading book*

TRC Europe does not have a non-trading book business that is exposed to interest rate risk and so this risk is immaterial to TRC Europe.

6.10 *Pension obligation risk*

Pension obligation risk is the risk caused by a firm's contractual or other liabilities in relation to a pension scheme. It also includes the risk that a firm might make payments or other contributions to a pension scheme because of a moral obligation or because the firm considers that it needs to for some other reason.

TRC Europe operates a defined contribution scheme for certain UK employees of the UK branch as determined by their contract of employment. Contributions are not material and are charged to the profit and loss account as they are incurred. TRC Europe provides no other post-retirement benefits to its employees.

7. Approach to Assessing Internal Capital Adequacy

TRC Europe has carried out its internal capital adequacy assessment to ensure the Company holds sufficient internal capital against the risk exposures detailed in Section 6. The ICAAP forms an integral part of the Company's risk management processes. The ICAAP is updated at least annually, or when a material change in the business occurs, and is reviewed and approved by the Board of Directors.

8. Capital Requirements

The table below shows the capital adequacy position for the firm at 31 December 2019:

Capital Adequacy	31 December 2019 (€'000s)
Credit risk requirement under the standardised method	3,315
Counterparty credit risk	259
Market risk	11,008
Fixed Overhead Requirement	5,657
Total Pillar 1 Requirements	20,239
Pillar 1 Risk Total Risk Weighted Exposures (“TRWE”)	252,988
Total Capital Resources	33,815
Capital Surplus over Pillar 1 Requirements	13,576
Capital resources/Pillar 1 TWRE	13.4%

9. Remuneration Policy disclosures

Given the nature of the firm’s size, internal organisation and the nature, scope and complexity of activities, the Company has made its Remuneration Policy disclosures as required under Article 450 of the EU CRR.

The Remuneration Policy Statement (“RPS”) is adopted each year by TRC Europe’s Board of Directors. The CEO oversees the annual review and update of the RPS, which includes an analysis of all new offers of employment and additional data from the Human Resources and Legal departments. The Board of Directors has the ultimate responsibility for the implementation of the RPS.

TRC Europe’s compensation plan is composed of base salary (fixed remuneration), benefits (fixed remuneration) and bonuses (variable remuneration).

Annual discretionary bonuses are awarded based on TRC Europe’s financial performance, including the performance of the Tower group of companies, the relevant trading team’s performance (if applicable), and the individual’s financial and non-financial performance, including an evaluation of the individual’s compliance with TRC Europe’s policies and procedures.

Trading performance bonuses are awarded to eligible trading team members. Eligible individuals receive varying levels of participation in the profits they generate for TRC Europe (adjusted for various costs related to the trader’s team) with the amount of the bonus being calculated using a Sharpe ratio analysis. An individual’s non-financial performance, including an evaluation of the individual’s compliance with TRC Europe’s policies and procedures, is also taken into account when determining the amount of the award.

Total remuneration awarded by TRC Europe for the year ended 31 December 2019 is available for inspection at the Company’s registered offices.