

1. Record Nr.	UNINA9910633938803321
Autore	Nelson Christopher
Titolo	Methods of strategic trade analysis : data-driven approaches to detect illicit dual-use trade // Christopher Nelson
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2023] ©2023
ISBN	9783031200366 9783031200359
Descrizione fisica	1 online resource (191 pages)
Collana	Advanced Sciences and Technologies for Security Applications
Disciplina	382.021
Soggetti	Commercial statistics - Data processing Trade regulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Keywords -- Contents -- About the Author -- Chapter 1: Introduction -- References -- Chapter 2: Introduction to Strategic Trade Analysis -- 2.1 The International Trade Analysis Landscape -- 2.2 What Is Strategic Trade? -- 2.3 Development of Strategic Trade Obligations and Initiatives -- 2.4 STA Stakeholders -- 2.5 The Need for Strategic Trade Analysis -- 2.5.1 Lower Priority Relative to Other Security Concerns -- 2.5.2 Volume of International Trade -- 2.5.3 Nature of Strategic Goods -- 2.5.4 Regulatory and Jurisdictional Issues -- 2.5.5 Wide Range of Parties Involved in Transactions -- 2.5.6 Data and Strategic Goods Detection -- 2.6 Conclusion -- References -- Chapter 3: Fundamental Systems of Strategic Trade Analysis -- 3.1 The Harmonized System -- 3.2 Strategic Trade Controls and ECCNs -- 3.3 Correlation Between the HS and STCs -- 3.3.1 Connecting the Dots Through Correlation Tables -- 3.4 Evolving Nomenclatures and HS2022 Amendments -- 3.5 Data Availability for STA -- References -- Chapter 4: Introduction to STA Methodologies -- 4.1 Script for Illicit Strategic Trade -- 4.2 Strategic Trade Risk Assessment -- 4.3 Mirror Statistics -- 4.4 Market Share Analysis -- 4.5 Transshipment and Re-export Analysis -- 4.6 Machine Learning -- 4.7 Network Analysis -- 4.8 Applications of Strategic Trade Analysis -- Chapter 5: Scripting an Illicit Strategic Trade Transaction --

5.1 Scripting Process -- 5.2 Script for an Illicit Strategic Goods Transaction -- 5.2.1 Act I-Arranging the Acquisition -- 5.2.2 Act II-Purchase and Pre-shipment Arrangements -- 5.2.3 Act III-Transport -- 5.3 Using the Script -- References -- Chapter 6: Strategic Trade Risk Assessment -- 6.1 Transaction-Level Risk Indicators -- 6.2 Risk Indicators Based on Historical Data -- 6.3 Advanced Risk Assessment Indicators -- 6.4 Examples of Adding Layers to Risk Indicators. 6.4.1 Keyword Searches and Commodity-Specific Monikers -- 6.4.2 Restricted Entity Lists -- 6.5 Application of Risk Indicators -- 6.5.1 Integration into Customs Risk Management Systems (CRMs) -- 6.5.2 Reviewing Past Transactions -- 6.6 Pros and Cons -- 6.6.1 Pros -- 6.6.2 Cons -- 6.7 Conclusion -- References -- Chapter 7: Mirror Statistics -- 7.1 Differences in Reported Trade Data -- 7.2 What Can Mirror Statistics Tell Us? -- 7.3 Process -- 7.3.1 Identify the Target Strategic Good(s) -- 7.3.2 Identify Trade Partner(s) and Flows of Interest -- 7.3.3 Gathering Trade Data -- 7.3.4 Analysis-What Are We Looking For? -- 7.3.5 Complementary Research -- 7.4 Example Cases -- 7.4.1 Canadian Exports of Heavy Water -- 7.4.2 Nuclear Cooperation Between South Korea and the United Arab Emirates -- 7.5 Mirror Statistics: Pros and Cons -- 7.5.1 Pros -- 7.5.2 Cons -- 7.6 Conclusion -- References -- Chapter 8: Market Share Analysis -- 8.1 Global Market Share -- 8.1.1 Identify the HS Codes for the Strategic Goods We Want to Measure -- 8.1.2 Select the Scope of the Market Share Assessment -- 8.1.3 Gather Harmonized Statistical Trade Data Within the Scope for the Selected HS Codes -- 8.1.4 Calculate Market Share -- 8.2 Example Cases for Global Market Share Analysis -- 8.2.1 Global Export Market Share for Detonating Fuses -- 8.2.2 The Strategic Trade Atlas -- 8.3 Refining Market Share Through HS-ECCN Correlations -- 8.4 Market Share Analysis: Pros and Cons -- 8.4.1 Pros -- 8.4.2 Cons -- 8.5 Conclusion -- References -- Chapter 9: Transshipment and Re-export Analysis -- 9.1 Examples of Transshipment/Re-export Leading to Diversion -- 9.2 STA Methods for Analyzing Transshipment and Re-exports -- 9.2.1 Transaction Flagging -- 9.2.2 Import-Export Matching -- 9.2.3 Transshipment/Re-export Estimation Methodology -- 9.3 Transshipment/Re-export Methodologies: Pros and Cons. 9.3.1 Pros -- 9.3.2 Cons -- 9.4 Conclusion -- References -- Chapter 10: Machine Learning for Strategic Trade Analysis -- 10.1 Discussion of Machine Learning Terms -- 10.2 Examples of Machine Learning in Similar Domains -- 10.2.1 Case Study I-Using Decision Trees to Classify Customs Noncompliance -- 10.2.2 Case Study II-Clustering and Logistic Regression for Customs Targeting -- 10.2.3 Case Study III-DATE for Customs Fraud Detection -- 10.2.4 Summary of Case Studies -- 10.3 Before We Start-Training and Test Sets -- 10.4 Supervised Classification with Resampling -- 10.4.1 Data Collection and Preparation -- 10.4.2 SMOTE Resampling -- 10.4.3 Modeling with Random Forest -- 10.5 Unsupervised Learning Techniques -- 10.5.1 Isolation Forest for Outlier Detection -- 10.5.2 K-Means Clustering -- 10.6 Natural Language Processing -- 10.6.1 Text Preprocessing -- 10.6.2 Fuzzy Matching -- 10.6.3 Supervised Text Classification -- 10.7 Parameter Tuning and Feature Selection -- 10.8 Model Performance -- 10.9 Machine Learning: Pros and Cons -- 10.9.1 Pros -- 10.9.2 Cons -- 10.10 Conclusion -- References -- Chapter 11: Network Analysis -- 11.1 What Is Network Analysis Used For? -- 11.2 Network Concepts -- 11.2.1 Centrality Measures -- 11.2.2 Community Detection and Modularity -- 11.3 Constructing a Network -- 11.3.1 Data Sources for Network Analysis -- 11.3.2 Steps to Create a Network Diagram -- 11.4 Using Network Analysis for STA -- 11.4.1 Connecting

the Dots -- 11.4.2 Facilitators -- 11.4.3 Industrial Capability Analysis -- 11.4.4 Temporal Analysis -- 11.4.5 Finding Disruption Points -- 11.5 Case Study: The Asher Karni Network -- 11.5.1 Facts of the Case -- 11.5.2 Preparing the Data -- 11.5.3 Karni Network Diagram -- 11.5.3.1 Focus on Order 4: Triggered Spark Gaps -- 11.6 Network Analysis: Pros and Cons -- 11.6.1 Pros -- 11.6.2 Cons -- 11.7 Conclusion -- References.

Chapter 12: Applying Strategic Trade Analysis -- 12.1 STA Application Areas -- 12.1.1 Strategic Trade Investigations -- 12.1.2 Understanding Strategic Trade Flows -- 12.1.3 Boost Correlation Efforts Between the HS and STC Lists -- 12.1.4 Strategic Capabilities Database -- 12.1.5 Unlicensed Trade in Strategic Goods: Pattern Recognition and Remediation -- 12.1.6 Post-clearance Audits, Future Targeting, and Additional Scrutiny -- 12.1.7 Enhanced Outreach Efforts -- 12.1.7.1 Supporting Domestic Outreach -- 12.1.7.2 Supporting International Outreach -- 12.1.7.3 Creating a Cycle of Improvement -- 12.2 Gaps in Strategic Trade Analysis -- 12.3 Areas of Future Research -- 12.4 Conclusion -- References.

---