VAT and customs symposium

Global VAT review and data analytics

Using data analytics to manage risk and generate cash

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Introduction
Introduction

Importance of managing VAT

► The ever increasing globalization of business and increased complexity of business operations and global supply chains makes it more important than ever to think about transaction taxes such as VAT and other similar indirect taxes. With supply chains covering multiple countries, each with their own VAT type taxes and their own specific rules, the opportunities and risks can be significant.

► Typically, global VAT under management is more than 30% of the non-US revenues and can, in practice, result in billions of dollars of VAT under management each year. A small error in accounting for this VAT can result in significant missed opportunities/lost cash and material exposures.

► Indirect taxes, including VAT, property taxes and other goods/services taxes (including customs duties), represent the largest share of global business tax outlays, comprising more than 75% of all business tax expenditures. VAT and sales tax are the largest of these, representing almost 40% of business tax expenditures.
Indirect taxes represent the largest share of global business tax outlays, comprising more than 75% of all business tax expenditures. 

Source: OECD 2008 study

Based on business accounts FY 2013 ($m)
Introduction

Global VAT trends

- Increased focus by tax authorities on VAT compliance
- Increased assessments
- Increased cooperation among different country tax authorities
- Increased use of data analytics by tax authorities
- Tax authorities introducing legal requirements to file electronic data and undertake electronic reconciliations with accounting data
Introduction

Overview of common VAT opportunities/risks

Global VAT

- Recovery/opportunities
- Liability/risks
- Process improvements

Cash refunds
- VAT refunds
- VAT offsets against other taxes
- VAT credits against output VAT
- Recovery of incorrectly charged VAT
- Recovery of foreign VAT

ERP/IT system improvements
- Tailoring of existing ERP system
- Maximize use of tax technology enablers (e.g., Vertex/Sabrix software bolt-ons)
- System design and implementation
- Tax code review/optimization
- VAT compliance automation

VAT planning
- Country VAT incentives
- VAT-free reliefs
- Creation/elimination of entities to improve supply chain VAT recovery and cash flow
- Sale of receivables
- VAT grouping

Cash flow
- Acceleration of cash flow using higher-frequency returns
- Acceleration of VAT refunds
- Negotiations with tax authority

VAT management
- Continuous data monitoring
- Introduce VAT key performance indicators (KPI)
- Global VAT compliance oversight
- VAT under management metrics
- Introduction of leading practices

Customs programs
- Use of deferment regimes to defer VAT and customs duties
- Bonded warehouse
- Foreign trade zone/processing under customs control

Supply chain
- Improve efficiency of global contract structuring
- Optimize intercompany transactions
- Procurement efficiencies
- Structuring of sales contracts for greater efficiency

Processes and controls
- VAT manuals
- VAT training programs
- Increased automation and reduction of manual processes
- Use of shared services centers
- Introduction of documented standard processes and controls
Balancing priorities in global VAT management

**Tax life cycle**

### VAT planning
- The VAT under management in material jurisdictions
- Monthly/quarterly VAT working capital requirements
- Sales of VAT receivables
- VAT free reliefs
- Cash flow acceleration
- Country VAT incentives
- Partial exemption analysis

### VAT management
- The number of full-time equivalents (FTEs) dedicated to indirect tax
- The percentage of tax department resources dedicated to indirect tax
- Introduction of KPIs and leading practices
- Training for staff

### VAT controversy
- The number and amount of penalties paid on VAT assessments
- The number of unanticipated audit challenges/assessments from the tax authorities
- The cost of audit defense (internal and external)

### VAT accounting
- The degree of automation of the end-to-end tax process
- The percentage of VAT posting errors (AR and AP)
- VAT invoicing errors (e.g., percentage of invoices returned by suppliers)
- The cost of producing an invoice

### VAT compliance
- The number and frequency of corrected filings
- The number and frequency of formal disclosures – i.e., corrections that are separately disclosed to the authorities as opposed to amending/correcting a return
- The number and amount of penalties for either correcting filings or making formal disclosures
- The cost of return preparation – the number of FTEs spent on VAT compliance and outsourcing
- The percentage of filings on time vs. number of penalties and amount for late filings and/or payment
## Introduction

**Global VAT management – market trends**

### Trends in finance and global VAT management

<table>
<thead>
<tr>
<th>Models/characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Limited or no global and/or regional visibility</td>
</tr>
<tr>
<td>- Limited or no documented VAT accounting processes and controls or manuals; processes that exist are locally developed. There is no regional or global standard</td>
</tr>
<tr>
<td>- Significant IT data remediation and manual process to prepare returns</td>
</tr>
<tr>
<td>- Little focus on effective indirect tax management time spent on fire-fighting compliance issues</td>
</tr>
<tr>
<td>2. Some regional governance, including limited regional visibility and control over workflow and processes</td>
</tr>
<tr>
<td>- Some documented process and controls and some use of data analytical based technology</td>
</tr>
<tr>
<td>- Some IT data remediation and manual process for return preparation</td>
</tr>
<tr>
<td>3. Full regional/global visibility</td>
</tr>
<tr>
<td>- Global/regional standardized “best practice” process and controls</td>
</tr>
<tr>
<td>- Leveraging technology and systems to eliminate manual processes; integrated approach to the record-to-report process</td>
</tr>
<tr>
<td>- Focus on effective indirect tax management/KPIs using data analytics and other technology approaches</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance and management</th>
<th>Standardized processes and execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>Regional/global</td>
</tr>
<tr>
<td>Control, access and visibility over local process</td>
<td>Simplification, standardization and cost reduction</td>
</tr>
<tr>
<td>Local country approach</td>
<td>Regional/global</td>
</tr>
</tbody>
</table>

- **1** Limited or no global and/or regional visibility
- **2** Some regional governance, including limited regional visibility and control over workflow and processes
- **3** Full regional/global visibility
Introduction

How data analytics can help manage global VAT

Many businesses do not have visibility on the amount of VAT being managed globally, or the risks and opportunities or process improvements available to reduce VAT costs. EY provides various technology enabled approaches, including the use of data analytics, to help clients. Clients typically have different needs, and there are different technology enabled options to help meet all types of client needs. For example:

► A client may operate in one country where there is already an extensive VAT function and, as a result, the person responsible for VAT may be looking for sophisticated data analytical tools to analyze the transactional data and assist with VAT planning.

► A person with VAT global responsibility may be looking for assistance with understanding the global VAT footprint and receiving regular VAT KPIs for each legal entity/country.

► A specific global/regional business decision, such as the roll out of a new ERP system, may create a specific need, e.g., a pre-or post-implementation systems review.
Introduction
How data analytics can help manage global VAT

► There are a variety of technology enabled approaches running on various sources of data which can be used to increase the effectiveness of global VAT reviews and to help effectively manage global VAT.

► We are going to focus on four key technology options using data analytics and visualization technology.

► Global VAT profile
► Global risk and opportunity review
► ERP health check
► Global continuous data monitoring
Global VAT reviews

Using data analytics to manage risk and generate cash
1. Global VAT profile
Global VAT management

VAT profile

Global VAT profile (questionnaires) – Customized questionnaire can be rapidly deployed to collect key data (see next slide) with minimal disruption to client staff. This well-established process allows you to identify key VAT metrics, VAT compliance/filing status and high-level potential opportunity and risk areas. The findings are summarized in global VAT profile heat maps. This high-level review helps to identify high risk/high opportunity countries to undertake a more detailed VAT opportunities and risk review (this more detailed review typically involves the use of data analytics). The high-level global VAT profile also provides a valuable oversight for you on the current VAT risk/opportunities profile in each region/country.

- Global VAT profile reviews five key indirect tax areas:
  - Cash recoveries/opportunities and liabilities/risks
  - Processes and controls
  - Compliance
  - ERP systems
  - Supply chain

- Results may be sorted on any number of predefined parameters, allowing cash refunds/opportunities, liabilities/risks and internal processes and controls to be viewed by region, country or topic. This assessment guides the identification of the countries that would benefit from a more in-depth review.

- The key findings are plotted on a heat map so potential cash recoveries/opportunities and risk/liabilities can be readily identified. An example of a heat map is shown below:
Global VAT management

VAT profile

Global VAT profile information

This profile will include readily available, but key, VAT information about Client X entities in each country. Examples of the key information are set out below:

► Details regarding VAT registrations for all entities in each country
► Scope of indirect tax filings, periodicity and status of all filings in each country
► High-level overview of the current-state VAT accounting end-to-end process
► Amount of VAT declared on sales
► VAT incurred on purchases
► VAT that has not been recovered on purchases
► Value of exports and information surrounding export documentation
► Liabilities/risks already identified, including reason, value and outcome
► Tax authority assessments in statutory period and outcome
► Cash recoveries/opportunities already implemented/identified, including value of savings and outcome
► The value of VAT receivables over time
► ERP system information
2. Global VAT risk and opportunity reviews
Global VAT opportunity and risk reviews

Use of data analytics

The use of data analytics is necessary to provide a really comprehensive analysis of the end-to-end VAT accounting process and the associated global VAT risks and opportunities. Data analytics can provide a detailed country-by-country VAT analysis across the different operational activities of your business (e.g. purchases, sales, exports and cross border services). The review can be focused on whatever key opportunity and risk areas are of most importance to you, e.g., cash recoveries and ongoing future VAT savings, understanding the current global VAT function effectiveness and global VAT risk profile, ERP systems health check and supply chain optimization.

Combining data analytics with visualization software can provide a summary of opportunities and risks identified in an easy to use summary format, with drill down capabilities. This allows you to drill down to the underlying explanation of opportunities/risks and supporting transactional data, as appropriate.

An example of the output from data analytics is as follows:
Global VAT opportunities and risk reviews

Data analytics – example output for user

<table>
<thead>
<tr>
<th>Risk areas</th>
<th>Cash saving areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country</strong></td>
<td><strong>Tax</strong></td>
</tr>
<tr>
<td>Brazil</td>
<td>ICMS</td>
</tr>
<tr>
<td></td>
<td>ISS</td>
</tr>
<tr>
<td></td>
<td>PIS / COFINS</td>
</tr>
<tr>
<td></td>
<td>PIS / COFINS / ICMS / IPI</td>
</tr>
<tr>
<td></td>
<td>PIS / COFINS / ISS</td>
</tr>
</tbody>
</table>
## Global VAT opportunities and risk reviews

### Example of data analytical findings

<table>
<thead>
<tr>
<th>Nr #</th>
<th>Finding</th>
<th>Financial impact in $US</th>
<th>Root cause analysis</th>
<th>Process change needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transfer pricing adjustments ($2m negative import)</td>
<td>Opportunity $116k</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>Supply chain transactions with multiple parties</td>
<td>Exposure $2.5m</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>Recoverable foreign VAT charged by suppliers</td>
<td>Opportunity $1.8m</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Unclaimed recoverable domestic VAT on purchases</td>
<td>Opportunity $7m</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>VAT charged on exempt products</td>
<td>Reputational risk</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>6</td>
<td>Sales to EU customers with Dutch VAT (BE/DE)</td>
<td>N/A</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>Failure to account for reverse charge VAT</td>
<td>Risk – penalties of 5%</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>Accelerate input VAT posting</td>
<td>Cashflow improvement $145m</td>
<td>X</td>
<td>Y</td>
</tr>
</tbody>
</table>
Input from the client is necessary during the following activities:

1. Intake meeting:
   To have a better understanding of the financial administration and IT environment we request an intake meeting, which will take one day or two days, with the financial director, IT department, global/regional indirect tax manager etc.

2. Data request and data extraction:
   Extracting data should involve the IT department over a period of 1-7 day(s).

3. Discuss VAT analytics:
   After the VAT data analytics have been run and analyzed, a meeting is typically planned with the person responsible for VAT to discuss findings and anomalies.

4. Documentation review:
   If any documents (i.e. hardcopy invoices or transport documents, contracts etc.) need to be reviewed to provided the necessary VAT assurance to our findings, we request the client provides access to the relevant documents and an explanation where necessary.

Overall, in order to complete a data analytics assignment, past experience has shown us that resources should be made available over a period of 3-15 days depending on the number of countries and scope of the projects.
Global VAT opportunities and risk reviews

Data analytical tests

0. General checks
   - DB1: Reconciliation transaction with tax tables
   - DB2A: FX check on all transactions
   - DB2B: FX VAT impact analysis

1. Transaction type
   - DB3: Purchase type analysis
   - DB4: Import analysis
   - DB5: Source country analysis
   - DB6: EU acquisition analysis

2. Material type
   - DB7: Material classification analysis
   - DB8: Effective VAT rate analysis for purchases

3. Supplier type
   - DB9: Supplier mismatch analysis
   - DB10: Supplier tax code analysis

4. Customer type
   - DB11: Customer mismatch analysis
   - DB12: Effective VAT rate analysis for sales

Output examples

FX check on all transactions

Sales flows

Source country analysis
Global VAT opportunities and risk reviews

Data analytical tests

5. Tax point
- DB13: Timing analysis on purchases
- DB14: Timing analysis on sales
- DB15: Accelerate input VAT recovery analysis
- DB16: GR/IR analysis

6. Collecting country
- DB17: Place of supply analysis
- DB18: Reverse charge analysis
- DB19: Effective use and enjoyment analysis
- DB20: Distance selling analysis

7. Procedures
- DB21: Reconcile with tax filings
- DB22: VAT G/L analysis
- DB23: Manual entry analysis

8. Compliance costs
- DB24: Compliance costs findings
- DB25: Customized scripts

9. Specials
- DB26: Scenario building

Output examples

Timing Analysis

Compliance cost

Scenario Building
Demo data analytics
Before filing your VAT return, a leading practice is to reconcile the numbers on the return with the financial accounting data/statutory reports. Tax authorities commonly expect this. G/L Analyzer can help you to do this quickly and accurately.

G/L Analyzer provides “one mouse click away”-transaction type and transaction number references and, as it provides this transactional level information, any errors, risks and opportunities can be quickly identified.

The tool is designed to meet global auditing standards, demonstrating that financial statements, corporate income tax returns and VAT returns are all filed and based on the very same underlying transactional data records.

G/L Analyzer offers the tax function control over the VAT compilation process by offering a systematic and user friendly methodology that identifies, stores and archives all VAT relevant business transactions during the VAT return compilation process.
Due to ERP set up error, input VAT on purchases was not completely captured during VAT return filing processes. G/L Analyzer enabled a German company to demonstrate the level of under claimed input VAT and to convince the tax authorities to:

a. Process $40m refund for previous years

b. Accept inclusion of otherwise missed input VAT in running VAT returns process

Other: Tax authority agreed to provide annual VAT return reconciliation(s) based on G/L Analyzer’s reconciliation methodology.
3. ERP systems health check
A large multinational organization will enter into thousands of transactions each day, all of which need to be captured, controlled and reported by the ERP system in accordance with local VAT laws.

Changes in business structure, supply chains, tax legislation and policy must all be reflected in the ERP system. Incorrect or misaligned ERP configuration, in response to business changes, can lead to serious VAT accounting errors and VAT leakage. As a result, active VAT risk management in this area is critical.

VAT compliance risk in the ERP system can be created by:
- New business structures
- Policy changes by tax administrations
- Legislation changes at the jurisdictional, state or municipal level
- Growth through mergers and acquisitions
- Changes in logistics flows
- Multiple ERP instances and use of legacy systems
- ERP migrations or implementations
Despite the potential risks involved, most organizations have very limited processes and controls in place to manage them. The most common reason for this is that responsibility for the tax configuration and maintenance of the ERP system falls into a “black hole,” with neither the tax nor the IT teams having direct responsibility to manage the risk.

An ERP health check undertakes a review of the ERP system’s functionality and the process and controls in place to maintain the system. Areas of focus typically include:

- Suitability of tax codes used
- Review of tax condition logic
- Accounts payable tax code defaults and condition rules for purchases
- Integrity of the master files
- Process and controls in place to identify necessary system changes
- Controls implemented to access the system
- Completeness of reporting functionality
An ERP health check is typically undertaken for the following three reasons:

- As a stand alone ERP health check
- Pre-global/regional ERP/tax engine implementation review
- Post-global/regional ERP/tax engine implementation review

The key findings from an ERP review will include:

- Identification of inherent risks within the ERP environment, e.g., limited controls over access to master files and no process to update systems for legal changes
- Highlighting gaps in master file data, e.g., missing VAT registration numbers
- Identifying missing tax codes or redundant tax codes
- Indirect tax determination errors
- Overview of G/L account set-up
- Assessment of the reporting functionality for VAT compliance and planning
ERP systems health check

The specific benefits gained by an ERP review for a pre-global/regional ERP/tax engine implementation are as follows:

- A review of master file integrity highlights deficiencies that will impact the operation of the new ERP system if not addressed
- Identifying current state manual process that could be eliminated through maximizing the functionality of the new ERP system
- Identify additional reporting needs to assist VAT planning

The specific benefits gained by a post-global/regional ERP/tax engine implementation are as follows:

- To provide comfort that the ERP system logic is set up appropriately
- Confirm compliance and planning reporting requirements are met
- Highlight problems early in the implementation process to improve the efficiency of future wave implementations
4. Global continuous data monitoring
Global continuous data monitoring

An effective global VAT management function will have the ability to continuously monitor KPIs and systems data to provide ongoing visibility to the global VAT status. This gives you ongoing peace of mind that your end-to-end VAT accounting processes are effectively managing your global VAT obligations, reducing risk and optimizing the cash position.
Global continuous data monitoring

Process

Key concepts

► Pure monitoring

► Simple use of analytics for day to day

► Simple and customized dashboards

► Flexible reporting

1. Connect data sources

2. Optimize, automate and monitor

Business rules

3. Receive / validate exceptions

4. Report and refine

5. Refine rules and tailor business processes
Global continuous data monitoring

KPI dashboard

Global continuous data monitoring provides KPI dashboard of structured and unstructured data.

This dashboard provides KPI information relating to:
1. VAT paid to tax authority
2. VAT return submitted on time
3. VAT paid on time
4. Value of irrecoverable VAT
5. Value of assessment
6. Value of VAT receivables
Global continuous data monitoring can undertake a wide range of tests and analyses on a periodic basis allowing the user to drill down to the financial, transactional and inventory data. This sample dashboard reconciles financial revenue data with VAT data (both different sources within SAP). Often, an exposure can be identified from the difference highlighted between revenues created by a lack of tax determination on manual postings/TP adjustments.
Demo global continuous data monitoring
Case studies
Global VAT reviews

Use of data analytics

Data analytics can be used across all industries. Examples of reviews undertaken utilizing our data analytics methodology:

- World’s leading oil and gas producers
- Global consumer electronics producer and trader
- EU retailer organization
- Global pharmaceutical industry leader
- Global European-based chemicals producer
- Global USA based hygiene and energy technologies company
Global VAT reviews

Use of data analytics

Cash recovery

► Released $30m of trapped VAT in client supply chain by expediting refund claims
► Redesigned the supply chain to significantly improve VAT cash flow on a go-forward basis
► VAT reclaim global Telco contract – $5m.
► Identified tax code mispostings by AP processors, resulting in recovery of under-recovered VAT on purchases amounting to several million dollars

Risk – Latin America

► Failure to update systems to account for a change in turnover tax legislation, resulting in irrecoverable turnover tax burden of approximately $200k per month
► Non-payment of reverse-charge VAT required under local legislation, resulting in exposure to penalties and interest
► Exposure to VAT on sales due to unclear contractual arrangements

Compliance

► Built defense file against tax assessment from European tax office based on statistical sampling method. Due to the results of data analytics, the tax assessment was withdrawn during appeal process
► Have carried out data analytics projects replacing tax audits in European countries
► Expedited VAT filing process with on average four days per country, resulting in reduction of compliance costs.
► Use of data analytics as part of Tax Control Framework

Process improvements – global VAT process and controls review

► Undertook a global VAT review with a deep dive in 15 material countries
► Identified the introduction of incorrect VAT codes in AP process
► Identified significant manual processes and set out automation options in Asia-Pacific
► Identified insufficient control over IT systems access, generating VAT errors due to incorrect master file data
► Identified lack of backup transactional data storage legally required in Latin America
► Identified insufficient controls globally and lack of desktop procedures
5. Summary

*Using data analytics to manage risk and generate cash*
Many businesses do not have visibility on the amount of VAT being managed globally, or the risks and opportunities or process improvements available to reduce VAT costs. Data analytics and other technology tools can be used to help clients manage global VAT. These technology enabled solutions can be used for many different purposes, including:

- Identifying cash recoveries and ongoing future VAT savings
- Understanding the current global VAT function effectiveness
- Preparing a global VAT risk profile
- Undertaking an ERP systems health check
- Ongoing pro-active VAT management
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