



Tax data analytics  
Gaining efficiency while  
addressing compliance



Increasingly, tax authorities in multiple countries are using data analytics tools to audit business tax data electronically. This trend has significant compliance implications for many companies. One of your most important tools for managing the increasing risk may be tax data analytics.

Deloitte hosted a [Dbriefs](#) webcast to discuss global regulatory developments involving tax data and processes. Presenters explained the concept of tax data analytics and shared several examples of how to apply analytics tools in day-to-day tax operations. More than 1,600 participants shared their own views through responses to polling questions posed during the webcast.

### Enhancing value through evolving technologies

As background to a discussion on tax data analytics, it is helpful to start with the evolution of a tax function's adoption and use of technology. Typically, this happens on a continuum, as depicted in the exhibit below. On the left side, you will see a static environment with almost no automation, limited controls, and no real rules maintenance; and on the right, a very progressive environment with processes that are highly integrated into the overall business. Most tax functions today fall somewhere in the middle.

A leading global vision for the tax function is to develop highly integrated processes that break down silos in favor of an integrated "lifecycle" approach — one that:

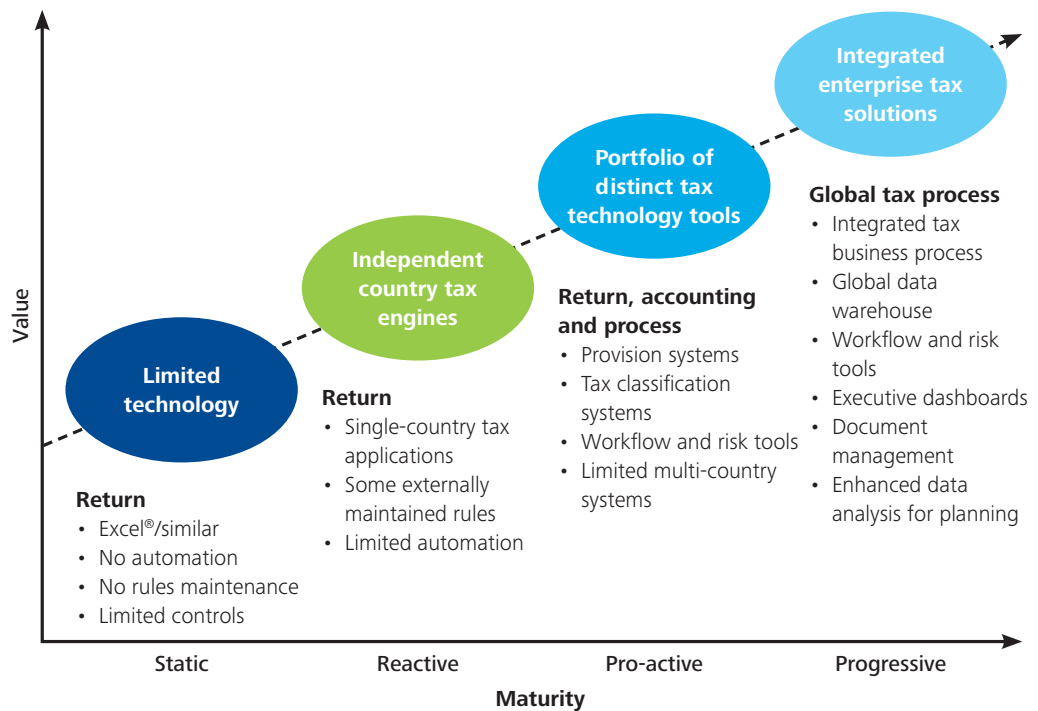
- Includes a high degree of integration between tax accounting and tax compliance.
- Uses tax-sensitized data for multiple purposes.
- Leverages technology-enabled processes and standardized work papers across all legal entities.

This may seem a little like utopia, but various forces are converging to move tax operations in that direction. Two very significant forces are the increasing sophistication of technology tools and requirements by governments for electronic data submission.

### Global tax management challenges

The current global regulatory trend began with the Sarbanes-Oxley (SOX) legislation in the United States, which introduced a requirement to report material weaknesses. Other countries quickly followed with similar legislation. As a result, companies had to build business control frameworks to address potential business risks. With respect to tax, as more and more material weaknesses were reported, tax became part of the business control framework.

Evolution of tax function's adoption and use of technology



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However, approaches around the world still vary. Authorities in the United Kingdom and Australia, like those in the United States, focus on obligations and responsibility. For example, since 2010 large businesses in Australia have been assigned a risk rating by the Australian Tax Office, derived by extending and enhancing data analytics and risk profiling techniques. In other countries, such as the Netherlands and China, authorities are looking at ways to cooperate with companies. For example, new Chinese regulations require large taxpayers to grant the tax authorities increased access to their internal tax risk control systems — a “horizontal monitoring” arrangement based on trust and transparency where the audit takes place in real time. India, on the other hand, is moving toward more audit-based controls as opposed to physical controls, but coupling that relaxation of controls with introduction of strict penalty and prosecution provisions. Finally, some European countries are moving towards e-audits and delivery of a “standard audit file” to tax authorities.

Clearly, technology plays a role in these developments — and particularly the growing use of Extensible Business Reporting Language (XBRL), an interface that provides authorities access to a company’s records electronically. Use of XBRL is mandatory in the United States and much of Western Europe, but also in countries like India, China and Japan. Notably, it is in development in various other countries, including Russia, Brazil, and Argentina.

With access to data in electronic format, authorities have the ability to run tax data analytics and go beyond random checking, as they did in the past, to full audits using tax data analytics. While this isn’t necessarily common practice at the moment, it is likely authorities will move in this direction — and quicker than we think.

### Emergence of data analytics

In today’s business world, most organizations are “drowning” in data but need to be able to make sense of it in a short timeframe. Data analytics is a means of supplying decision makers with relevant data so that they can make more informed decisions.

In practical terms, data analytics covers large populations of data rather than samples and draws data from multiple systems and data sources, extracting useful information to provide objective, factual results. It is used to supplement or replace other procedures, such as observation, inquiry or sampling — in effect, improving our ability to identify trends, risks, and anomalies.

Several major trends are driving the adoption of new approaches to business analytics. Taken together they underscore an unforgiving demand for improved performance and a wake-up call for more disciplined risk and information management. These include:

- Exponential growth in data volumes and technology capacity.
- Regulatory demands for deeper insight into risk, exposure, and public responsiveness.
- The need to remain competitive and drive profitable growth, which depends on being able to understand and meet customers’ needs.
- The growing complexity of enterprise data sources, including “newer” sources such as e-mail, Facebook and other social networks, or sensor-enabled facilities.
- The need to process unprecedented amounts of information in order to uncover hidden patterns that may otherwise go undetected.

How does tax fit into this environment? Federal, state, and international taxing authorities are increasingly aggressive in pursuing revenues and, accordingly, interested in making sure you are compliant with their rules and regulations. In addition, organizations are under extreme pressure to meet the public’s needs. At the end of the day, companies must have a proactive audit defense, run efficient tax operations, produce accurate reporting and tax accruals, *and* be SOX compliant. Data analytics can help on all counts.

### A practical approach to tax data analytics

Over the past two decades, companies have invested heavily in origination and servicing systems to streamline their processes. This has resulted in a significant increase in organized data, as well as a shift in focus toward analyzing information to improve performance. Accordingly, the tax function must change its mindset from “what I need to do” to “what I need to know.”

Advanced analytics enable us to do a number of things that operational reporting typically did not, including:

- Looking forward rather than back.
- Discovering and simulating rather than “slicing and dicing.”
- Predicting what will happen rather than just understanding what did happen.
- Modeling changes that could happen if we change facts and circumstances.
- Improving information rather than just analyzing it.
- Establishing and using key performance predictors (KPPs) rather than just key performance indicators (KPIs).

The exhibit below illustrates an example of a tax data analytics approach that leverages “hidden” data. When you think of indirect tax, most of the master data required comes from transactions owned by other processes. Interactive tax data analytics allow you, for example, to access all of the “hidden” data and apply predefined rules in order to detect potential risks or opportunities and test indirect tax calculations.

Most tax organizations and companies can benefit from data analytics; however, those more likely to benefit have:

- Large North American and/or global operations spanning many jurisdictions.
- Substantial numbers of business-to-business and intercompany transactions.
- Shared services centers for accounts payable (AP) and accounts receivable (AR) processes, as well as for tax compliance.
- Outsourced tax compliance in various Asia-Pacific countries.
- Substantial impact of indirect taxes on cash flow.
- A complex transfer pricing model.

Together, these factors require an organized view of all taxes and the ability to have in hand at least the information that tax authorities also have.

### A U.S. example of tax analytics: Sales and use tax

For U.S. sales and use tax, the ability to analyze and scrutinize data for potential tax errors can be very valuable. While this isn’t an exhaustive list, these are some of the potential tests an indirect tax function may need to conduct to detect errors:

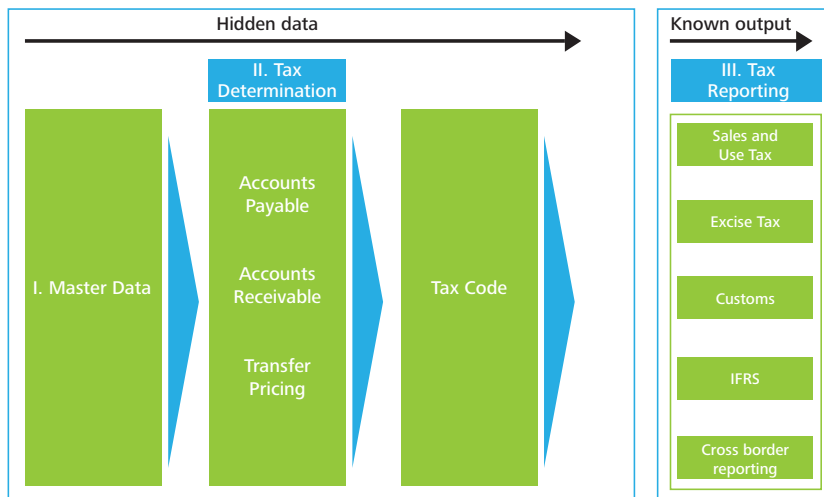
- Jurisdictions where tax was charged or exempted
- Tax rate based on jurisdiction, customer, product, and other data drivers
- Self-accrued use tax
- Vendor charged sales tax
- Gross sales vs. taxable sales
- Taxation based on nexus profile
- Customer exemptions based on documentation held
- Taking valid exemptions based on use: resale, manufacturing, etc.

For most tax organizations, resource and time constraints, coupled with the sheer volume of transactions and need to verify which tests are eligible for which transactions, makes executing this broad amount of data analysis impractical.

With up to 7,500 tax jurisdictions and as many as 15,000 tax rates, many companies with a broad U.S. nexus profile have turned to transaction tax software bolt-on solutions to help ease the significant burden of maintaining rates and rules manually in an ERP system. Depending on the complexity of a company’s tax determination and reporting requirements, the number of data elements passed from the ERP system to the transaction tax software for accurate calculation can be substantial. But the accuracy of the tax decision is dependent on the data inputs of different users responsible for supplying data at various points along a given business process. Manual review of data elements is simply too cumbersome; while a handful of high-dollar transactions may receive this kind of scrutiny, most data and resulting tax calculations are accepted as “good enough.”

Applying an analytics tool to the overall process enables you to extract data from the tax software database and automate the analysis to determine whether the system is producing the results as designed based upon user inputs. So, after collecting and mapping data into the analytics tool, a tax analyst should be able to see a high-level snapshot of possible coding errors — for example, incorrect, missing, or generic values — in a variety of data groupings, such as use tax accrued amount, sales tax paid to vendor amount, plant, vendor, company code, jurisdiction, etc.

### Example of tax data analytics approach



A data analysis and monitoring tool also allows tax departments to prepare for potential audits more effectively. In fact, continuous monitoring of tax data may help transform an indirect tax department from reactive audit defense mode to proactive error remediation mode. In addition, tax data analytics may help:

- Communicate to the business the benefit of correcting data errors
- Reduce time spent on manual data analysis activities — often significantly
- Remediate data entry errors proactively and prevent them from happening in the future

#### A global example of tax analytics: Value added tax

Outside of the United States, the issues and methods are similar; however, the systems are a little different. Most countries have a value added tax (VAT) or a goods and services tax (GST) system. Unlike the U.S. sales and use tax, VAT is levied on all transactions — goods as well as services — in the supply chain, so there are many more transactions in most cases. For most companies, however, VAT should be a pass-through tax, taxed to the end customer and not a cost to the business. In practice, though, it can be much more complex, and the tax function may need to test these types of transactions to understand VAT compliance and tax determination:

- Duplicate invoice based on invoice number and amount
- Duplicate invoice based on supplier number/name, invoice number, month and amount
- Duplicate invoice based on invoice number, invoice date, and amount
- Transactions without a tax code
- Zero-value VAT transactions
- Posting and invoice date comparison
- Discrepancies between tax code at purchase order (PO) level and AP invoice
- Sales to domestic customers without VAT
- Sales to foreign customers with VAT
- Purchases from domestic vendors without VAT
- Purchases from foreign vendors with VAT
- Zero-rated EU sales postings without valid customer VAT numbers

While bolt-on engines are quite common in the United States, elsewhere many companies use internal tax functionality in systems such as SAP® and Oracle®. Given the large number of local tax requirements, implementations outside the United States can be quite complex.

One particular example of the value of tax data analytics is in addressing the European Union legal requirement to maintain the correct VAT numbers for customers and, as of January 12, 2012, the names and addresses of customers. Responsibility lies with the recipient, but the supplier of services also has obligations because, particularly in cross-border situations, the authorities want to make sure that VAT services have been reported correctly. Even though a VAT number was correct when entered into the system, this does not guarantee that it remains accurate; therefore, it is important to conduct regular checks of VAT numbers to determine that the customer master data is correct. A data analytics tool can automate monitoring and testing of the required VAT master data.

These are just two examples of why it is important to remain aware of and, more importantly, be involved in your organization's discussions around analytics. Tax analytics help us make informed decisions and add value to the tax function. As tax leaders, we must continue to explore the "art of the possible" — including our opportunities for using analytics to improve transactional-level data.

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**Tax executives' perspectives**

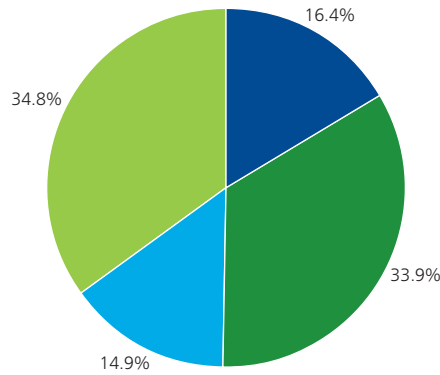
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The changing environment around electronic data has had an impact on many tax functions' access to data. About 34 percent of webcast participants said the changes have improved data access in a limited way, while another 16 percent said they have aggressively implemented data

improvements beyond the minimum requirements. Fifteen percent said their tax functions continue to struggle to get accurate data without a lot of manual effort.

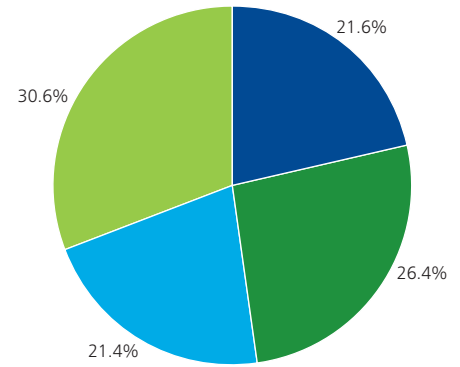
Data analytics is critical to addressing compliance and other pressures in today's tax environment, but less than a quarter of webcast participants (22 percent) said their companies are "extremely focused" on analytics and using core data to drive corporate effectiveness and strategy. About 26 percent said their organizations are exploring the use of analytics but haven't seen tangible results yet. Another 21 percent said they have not yet embraced data analytics to any significant extent.

**Given the changing environment around electronic data, has your tax function's access to data been improved?**



- Yes, we have aggressively implemented data improvements beyond the minimum requirements
- Somewhat, the changes required have allowed us to improve our data access but in a limited way
- No, we struggle with getting accurate data without a lot of manual effort
- Unsure/not applicable

**Which of the following best describes your company's focus around data analytics?**



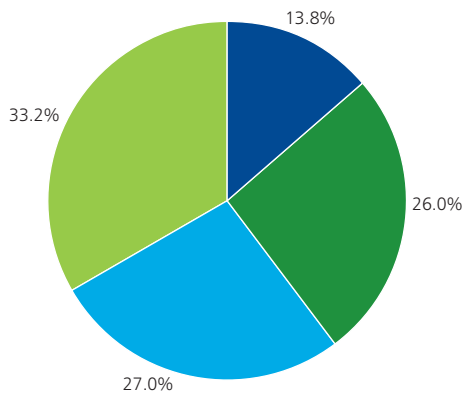
- Our company is extremely focused on analytics and using core data to drive our corporate effectiveness and strategy
- Our company is exploring the use of data analytics but I have not seen tangible efforts as of yet
- Our company has not embraced the use of data analytics to any great extent
- Unsure/not applicable

Source: Deloitte's Tax Operations Dbriefs webcast, "Tax Data Analytics: Gaining Efficiency While Addressing Compliance," held on March 15, 2012. Polling results presented herein are solely the thoughts and opinions of survey participants and are not necessarily representative of the total population.

When asked the same question, but about their tax function rather than their company as a whole, webcast participants indicated that tax is behind the rest of the organization in use of data analytics. Only 14 percent of respondents said their tax function is extremely focused on analytics and using core data to drive corporate effectiveness and strategy. Just over a quarter, or 26 percent, said their tax functions are using data analytics but haven't seen tangible results. Twenty-seven percent said their tax function has not embraced data analytics.

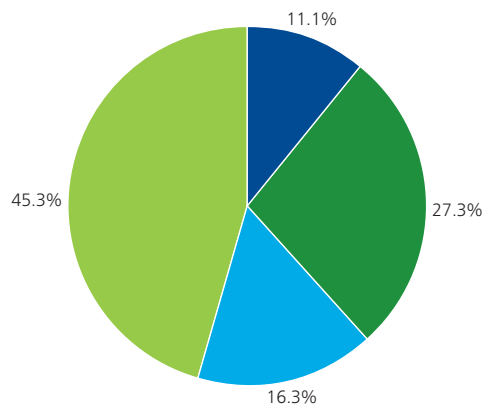
Indirect taxes is one area of the tax function that can benefit significantly from tax data analytics, yet few (11 percent) of webcast participants said their tax functions are active in using indirect tax compliance data generated to perform analytics and drive value to the business. Just over a quarter, 27 percent, said they have not figured out how to leverage data that is available, beyond streamlining compliance efforts.

**Which of the following best describes your tax function's focus around data analytics?**



- Our tax function is extremely focused on analytics and using core data to drive our effectiveness and strategy
- Our tax function is exploring the use of data analytics but I have not seen tangible results as of yet
- Our tax function has not embraced the use of data analytics to any great extent
- Unsure/not applicable

**From an indirect (VAT or Sales and Use) tax perspective, which of the following best describes your tax function's ability to leverage existing compliance data to deliver value through analytics?**



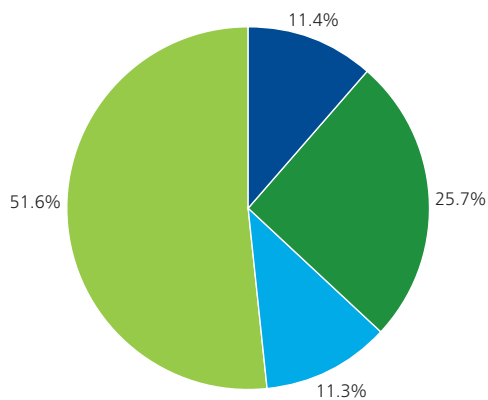
- Our function has been very active in using the compliance data generated to perform analytics and drive value to our organization
- Our function has not figured out how to leverage the data that is available beyond streamlining our compliance efforts
- Our function is not responsible for the indirect compliance or planning efforts
- Unsure/not applicable

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Likewise, only 11 percent of webcast participants indicated that their companies' ERP systems are able to provide accurate transactional data through the system's native functionality. About 28 percent said they are able to provide transactional-level data but require a lot of manual verification in order to gain accuracy. Eleven percent said they use so many different ERP systems that transactional data accuracy is "confusing" to users.

**From an indirect (VAT or Sales and Use) tax perspective, which of the following best describes your company's ERP systems ability to deliver accurate/transactional level data?**



- Our ERP systems are able to provide accurate transactional level data through its native functionality
- Our ERP systems are able to provide accurate transactional level data through its native functionality
- We have so many different ERP systems that the accuracy of the transactional data is confusing to the users
- Unsure/not applicable

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