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Tax data analytics
A new era for tax planning and compliance

Like other business functions, tax departments face increasing demand to operate more efficiently. At the same time, expectations are growing for tax to provide strategic tax viewpoints and additional value to the broader organization.

Tax data analytics can help address these expanding requirements and open new avenues for tax executives and their teams to engage with the broader business. Tax data analytics combines tax technical knowledge, large sets of data, and new technologies such as visualization tools to generate insights and deeper understanding. Tax analytics can help an organization's tax function make smarter, real-time decisions to improve business performance and drive strategy.

A recent Deloitte Dbriefs webcast provided an overview of tax data analytics concepts and components, along with areas of potential value creation through use of analytics. Also presented were practical examples of how companies can apply analytics in combination with visualization tools to identify and explore key tax issues and opportunities.

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The tax function — a late analytics adopter

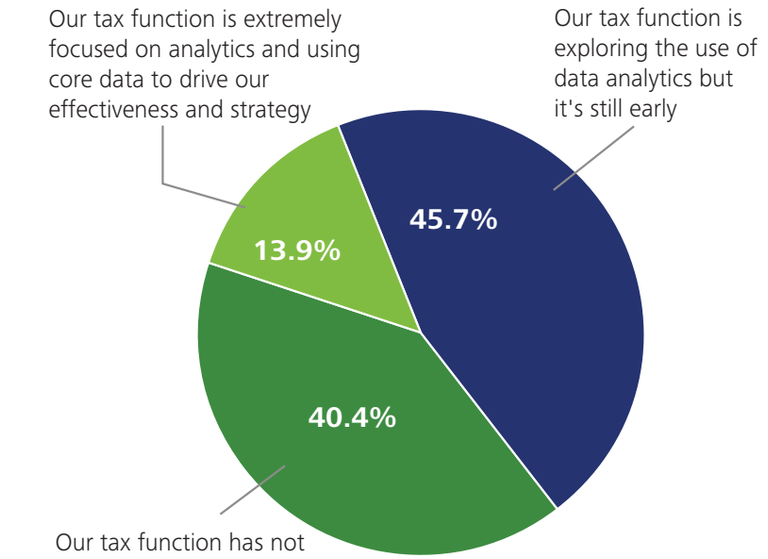
Despite being a quantitative field, tax has been hesitant to embrace analytics. But there are signs of growing interest. Participants were polled during a Deloitte Dbriefs webcast. Of those who provided an opinion on their tax function's focus on analytics, nearly 60 percent of respondents indicated their organization is either exploring the use of data analytics or is extremely focused on using it to drive effectiveness and strategy.

Among areas where analytics is used, direct tax compliance and provision were most common, cited by 49 percent of respondents.

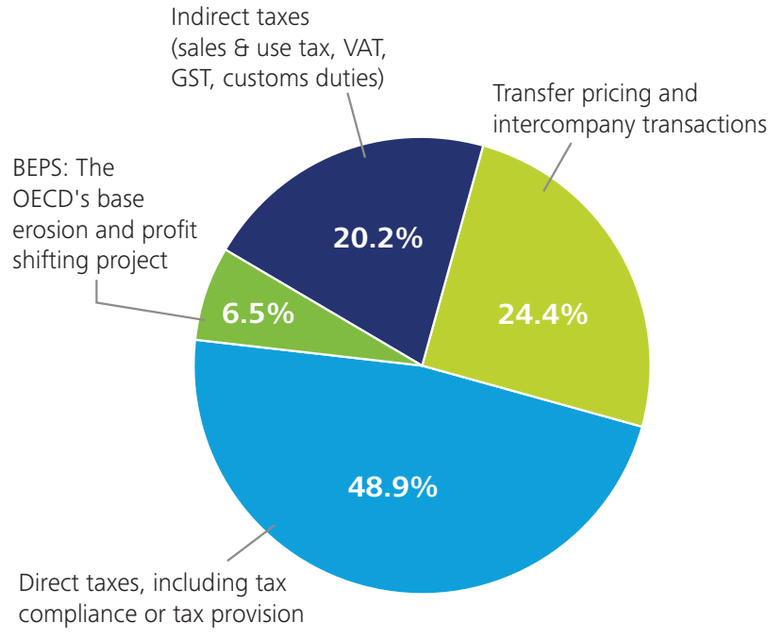
Several factors may contribute to this slower uptake in tax as opposed to other parts of the business. Most tax software is compliance oriented rather than analytics focused. Numerous legal entities exist within the enterprise, sometimes on different ERP systems and with different tax issues. Tax law is complex, and too little data is available to analyze tax structures. In the Dbriefs poll, data issues were cited most frequently (32 percent) as the biggest challenge in executing analytics strategy.

Despite these hurdles, executive-level demand for strategic tax information and insights is beginning to build momentum. In some instances, as well, regulators are ahead of companies in analytics deployment.

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



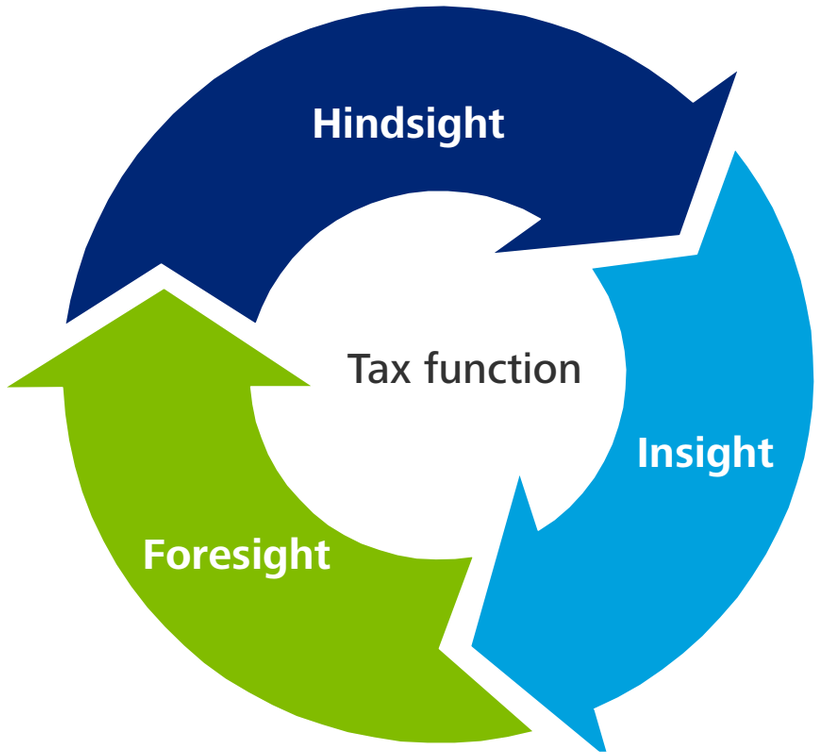
Are you using tax analytics to address any of the following tax areas? Choose your top area if there is more than one.



Change the mindset from “what I need to do” to “what I need to know”

Traditionally, tax data-gathering has focused on **hindsight**, dealing with data from transactions that have already occurred for business planning and compliance purposes. While hindsight remains important, tax organizations are looking to use data more for gaining **insight**, and even **foresight** into what lies ahead. Analytics can help move tax toward insight and foresight, changing its mindset from “what do I need to do?” to “what do I need to know?”

Insight can be attained by drilling deeper into data using more sophisticated queries to understand how aspects of the business may affect tax outcomes. Using past data to understand what actions are correlated with which outcomes can provide insights into drivers of tax impacts. For example, are cash taxes paid to a jurisdiction appropriate relative to projected taxable income and statutory tax rates? Or, how is employee international travel affecting the company’s permanent establishment exposure?



Foresight is also attainable in the absence of future data. Past data can be used to create a statistical model to project into the future. Functions including marketing and supply chain operations use such an approach, and tax can follow suit. For example, how can monthly trends in book income, cash taxes, and effective tax rates help reduce the potential for surprises?

Tax and the role of analytics

The tax function gathers data from various sources and systems across the enterprise, uses it to solve problems and find answers, and then delivers information in the form of return filings, reports, and presentations. Data analytics is fundamentally changing tax's role by providing the ability to explore and explain data in new ways.

Tax analytics can help answer questions that couldn't be cracked previously. For example, analytics can help illuminate the impact on tax rates of external and internal changes in the business environment. Or, analytics can be used to scour contracts for language that could lead to different-than-expected tax consequences.

Visualization

Visualization can be a useful technology any time humans look at data output and make decisions based on it. Visualization-oriented tools, as well as visualization capabilities found in statistical and business intelligence tools, can help equip tax specialists to explore and explain data in new ways and allow users to understand data better by seeing it in context.

Visual analytics helps users reach insights more quickly by more readily presenting factors and insights. Visualization can be used to explore the interplay of different scenarios on the global tax footprint, providing the ability to change the assumptions of one scenario and quickly see the impact across others. Visualization can also highlight anomalies in large sets of transactional data, improving the ability to investigate discrepancies.

Sound data management

Sound data management is both essential to effective use of tax analytics and potentially a substantial challenge. Along with the large, disparate data volumes involved, tax calculations are routinely created in multiple instances of spreadsheet programs and stored in separate systems, and often the data generated isn't fed back into source systems. Important data from different areas of a company can also have errors or inconsistencies or be incomplete, making it more difficult to extract, analyze, and manage data.

Tax data infrastructure

One resource particularly important to development and use of tax data analytics is a tax data infrastructure that harmonizes and integrates tax data across the organization to achieve a single working version for tax purposes. While the reliance on spreadsheets noted previously can impede such an effort, establishing a tax data warehouse can be a helpful step.

In many cases, though, tax data needs to be integrated with other types of data, including financial, supply chain, and inventory. Combining tax data with other data in an enterprise data warehouse can increase the value of the data infrastructure.

People

Another important resource is people. Finding people who understand both tax law and analytics is proving difficult for some organizations. In response, some companies are hiring quantitative professionals or data scientists and teaching them about tax, rather than vice versa, or they are recruiting people from elsewhere in the organization who possess these skills.

Tax analytics applications

Data analytics can help an organization and its tax function drive toward becoming an insight-driven organization, or IDO. An IDO harnesses the power of data and analytics to inform decision-making—not through discrete, individual projects, but by embedding analytics throughout the enterprise, including in the tax function.

Various types of analytics can be applied to tax issues and investigation (Figure 1). To date, tax organizations have used analytics primarily in creating descriptive scorecards and visually representing large volumes of data in more digestible formats — forms of *hindsight*. These first use cases of analytics are helping organizations determine where to allocate resources, focus on anomalies in results, and identify potential areas of risk.

As organizations find value in these initial analytics projects, they will advance their capabilities into more complex areas such as predictive and prescriptive analytics. Predictive analytics uses data about the past to identify key predictors for the future, and statistical models to project what might happen in a given tax situation. Prescriptive analytics takes the insights even further, and suggests actions that should be taken based on opportunities and risks identified.

Analytics can be employed to make comparisons between different business units from a tax perspective, as well as analyze the implications of tax-related decisions such as buying or selling assets. Or, analytics can be used to sample certain tax items to understand the potential for errors in a particular population, as well as the audit risk created by those errors. Leveraging analytical tools already in use at many organizations, tax can also participate in broader analytics efforts within the enterprise.

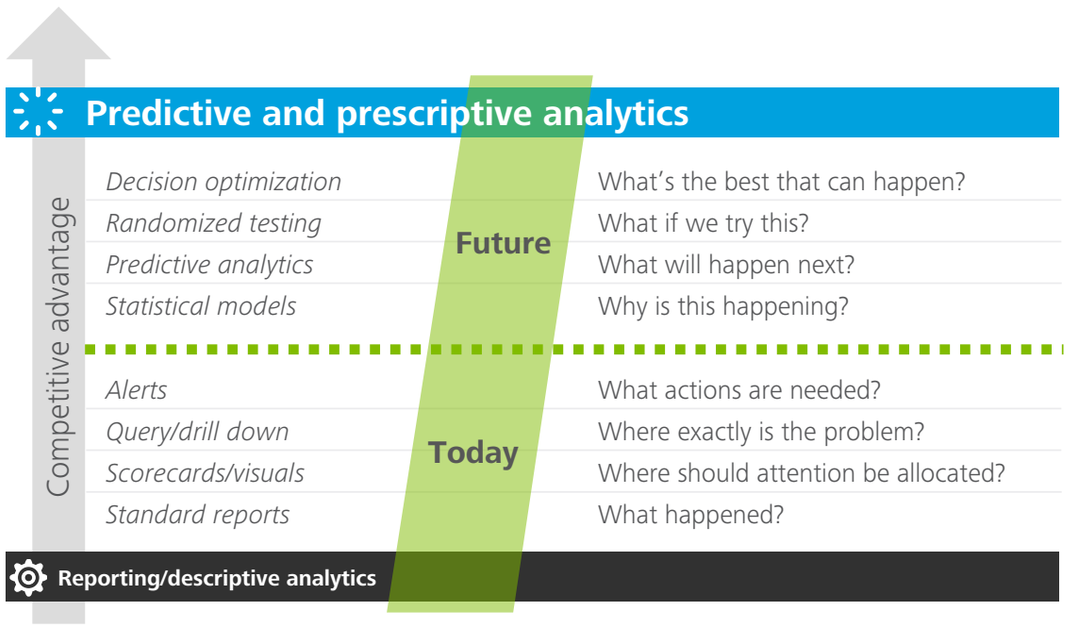
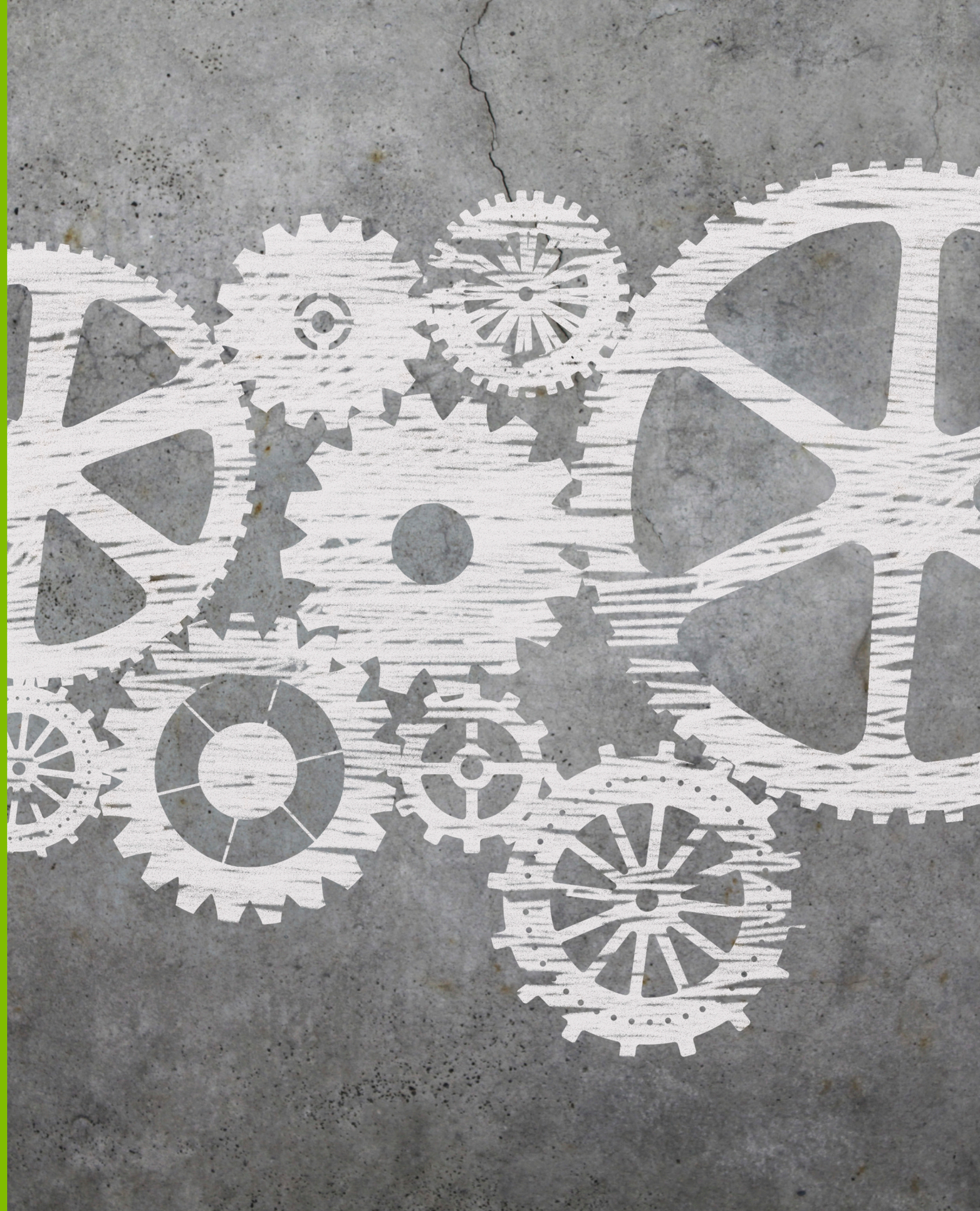


Figure 1. Analytics in tax—now and in the future

Tax analytics opportunities

- Understanding drivers of tax in key areas
- Predicting earnings, tax impacts, sales and use taxes
- Making comparisons between units over time
- Analyzing implications of decisions, such as buying or selling assets
- Sampling tax items to understand potential errors and audit risk
- Analyzing unstructured documentation
- Interpreting tax law



Ways to jumpstart tax data analytics

Figure 2 depicts areas in which prebuilt modules can serve as building blocks for tax data analytics. The tax data warehouse serves as a central repository for data already available. The data can be in an actual tax data warehouse or the ability to access data residing elsewhere, such as in ERP systems, bolt-on systems, tax compliance software, and tax provision systems.

The six areas surrounding the tax data warehouse in Figure 2 share several traits that make them prime candidates for tax data analytics. They are detailed and data intensive, focus on important organizational processes, and often involve iterative or repetitive analyses.

Three tax areas demonstrate how data analytics and visualization tools can be used to better understand the tax environment and support decision making: *direct taxes, transfer pricing, and indirect taxes.*

Figure 2. Data analytics opportunity areas

Direct taxes

Direct tax is an area in which descriptive analytics can add significant value. Figure 3 portrays federal income tax information in a more informative, dynamic manner than looking at lines on a tax return, spreadsheet, and workpapers. A user of this tool can interact with the data, drilling down to supporting detail and changing the view completely with just a click or two.

For example, in reviewing a tax return or conducting due diligence on a target company, the user can quickly see in the top left quadrant that book income has been rising quickly over three years, while taxable income has been decreasing rapidly. What is happening in the business to cause that, and what does that mean from a tax perspective?

The chart on the right of Figure 3 reveals that the differences are being driven largely by temporary items. And, the bottom left quadrant lists the largest temporary adjustments. The visualization helps focus attention on issues driving tax liability, in this case unrealized and realized exchange losses, depreciation calculations, and intercompany transactions.

Figure 3. Tax analytics–direct taxes

Transfer pricing

Figure 4 shows the power of visualization in depicting and understanding transfer pricing outcomes. An organization can pick whatever metrics it would like to examine, such as metrics reported in new country-by-country reporting requirements, or anything that is relevant to the business. As an example, the depiction of country-by-country employee expenses as a percent of revenue (top right quadrant) flags potential outliers. Combined with the display of employee expenses per number of employees (bottom left quadrant), the data reveals that this organization's operations in Italy have a different profile than the other countries. This information can help the transfer pricing specialists make sure that the outcomes are reflecting business realities, narrow the focus of inquiry, find patterns, and identify areas for further study.

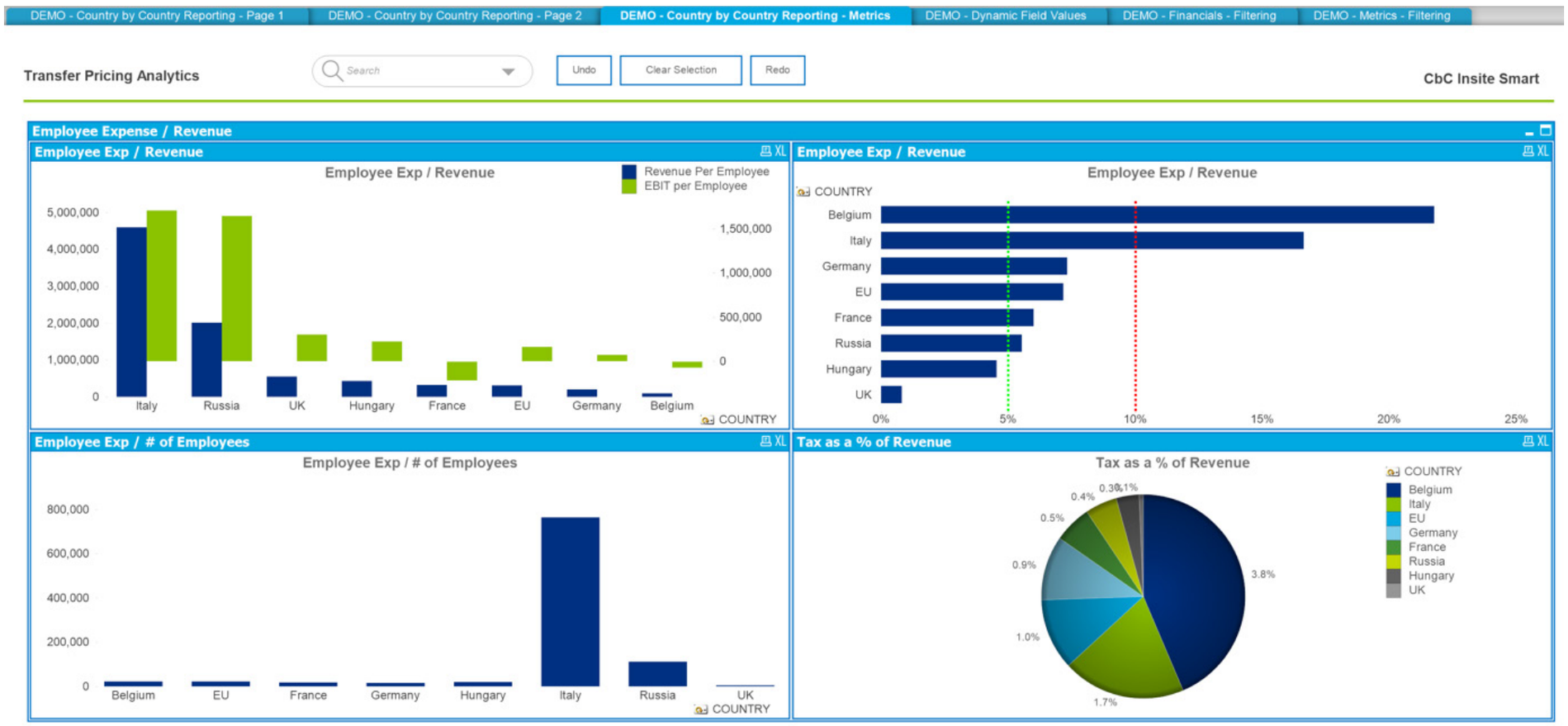


Figure 4. Transfer pricing

Indirect taxes

Indirect tax offers considerable opportunities to leverage analytics. Indirect tax management and compliance are handled by operating business units in many organizations. Every transaction an organization enters into requires an indirect tax decision to be made – even if that decision is that the transaction is exempt from indirect taxes. Thus the volume of information that surrounds the ultimate indirect tax outcomes can be immense. The process is often highly automated, but also reliant on manual information entry. Tax is often expected to manage indirect tax controversy, without having day-to-day control over the processes that create and report the liabilities. Given the volumes of data and the velocity of the transactions, the tax function is often left dealing with summarized data, samples of data, or, worse yet, problems that a taxing authority raises after the fact.

Figure 5 shows how analytics can help in monitoring indirect taxes both from a risk perspective and in terms of avoiding overpayments. The graphic on the left depicts filters that can be used to focus on specific time periods and jurisdictions.

The top-left pie chart shows spending by general ledger category, enabling, for example, a sales tax specialist to quickly drill into different areas and see underlying transactions. At top-right, use tax by jurisdiction is displayed and can be sorted based on purchase order amounts, invoices, and total use tax. The pie chart at bottom left enables a view of analysis by vendor spending, while the chart at the bottom right shows spending patterns by legal entity within the organization. A couple of clicks can take the user from a view of millions of transactions down to finding an individual transaction and all of its accompanying details in ERP and other systems.

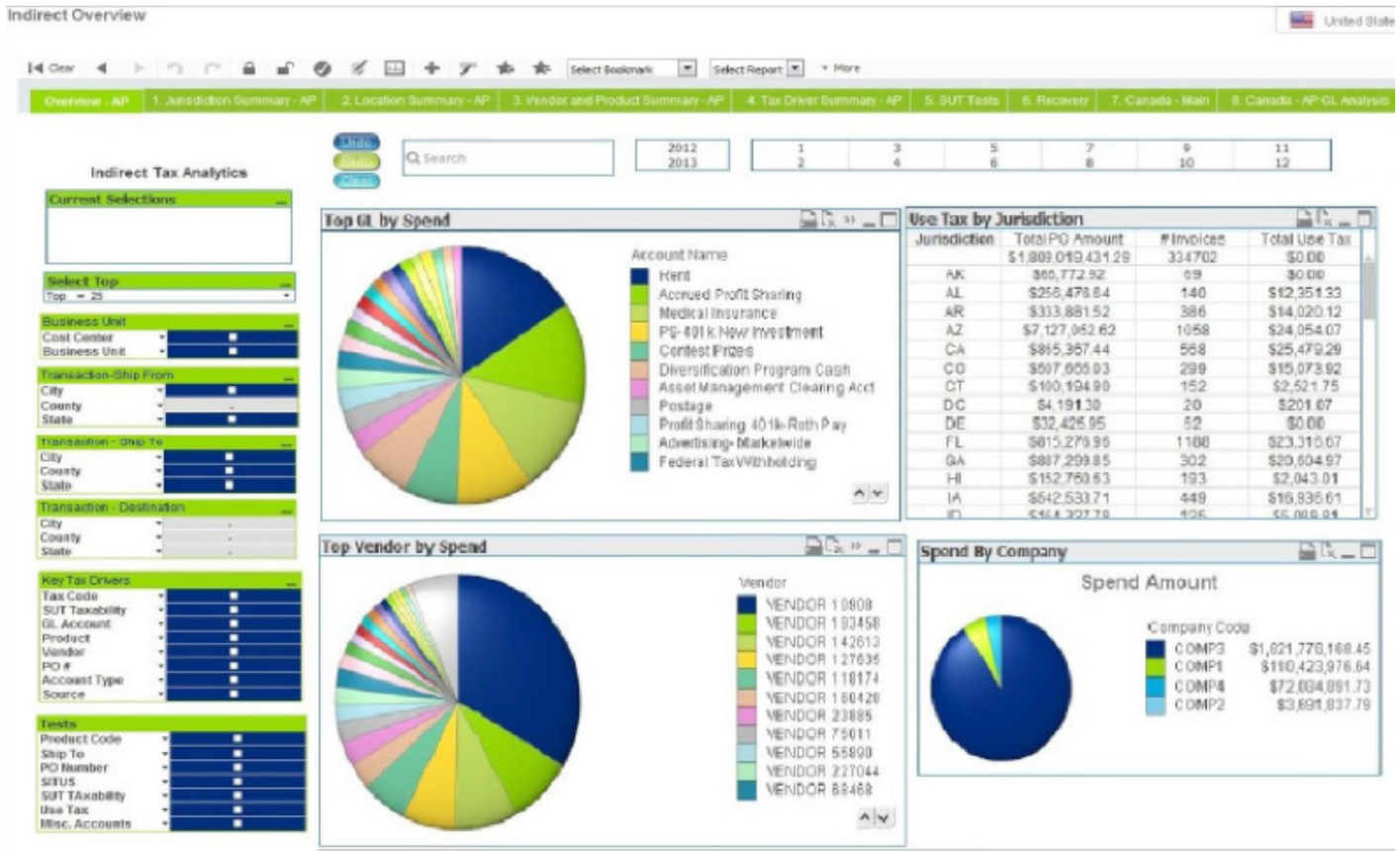


Figure 5. Indirect taxes

Elevating the tax role with data analytics

Tax data analytics is both a powerful investigative tool and, through visualization, a graphic medium for communicating findings and discoveries. Importantly, analytics can play a vital role in meeting growing organizational expectations that tax will contribute to strategy setting and serve as a catalyst for organizational growth and success.

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