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CFO Insights
Using Econometrics to Bolster Scenario Planning

Worries over the future of the eurozone have been a consistent theme in the CFO surveys conducted globally by Deloitte's member firms. And despite additional moves by the European Central Bank (ECB) to shore up the euro, results from the third-quarter edition of Deloitte's *Global CFO Signals* showed continued concern about one or more countries leaving the single currency.[1] In Norway, for example, CFOs surveyed assigned a 22% probability of a member(s) exit within six months; UK CFOs pegged the chances at 27% within 12 months; and in Switzerland, CFOs were even more specific, assigning a 48% probability of Greece not being part of the European Union in three years. (see sidebar: *Euro actions and attitudes*)

A European Union member exit, of course, is only one possible outcome of the euro crisis. Others include a drop in the value of the euro, a complete breakup of the currency union, or a continuation of the current volatility. Each scenario could impact business strategy and operations not just in Europe but around the globe. And then, of course, a black swan event could materialize and dwarf these possibilities.

For CFOs, examining the impact of these possible outcomes requires a robust scenario planning process. Aside from examining multiple outcomes, such a process can establish a number of concrete plans, from fundamental changes in strategy caused by global paradigm shifts to tactical contingency planning for shorter-term developments. Moreover, a scenario-based planning effort using econometric analysis—the application of statistical techniques to analyze economic data—can enhance the competitive advantage of a business and position an organization to be better able to adapt to an ever-changing business environment.

In this issue of *CFO Insights*, we will discuss the four key phases of scenario-based planning and how econometrics can be used to help CFOs and their finance teams establish effective action-oriented processes.[2]

Phase I. Define the purpose, scenarios, and associated strategic implications

To begin, consider a U.S.-based multinational manufacturing company with manufacturing operations in Asia. Most of the company's sales are generated in the United States and in markets across Europe. But the company's executives are concerned about the implications of changes in the eurozone and want to build scenarios to evaluate the effects of the euro crisis over the next year.

The first step in developing scenarios for any situation is to ensure that the process is properly linked to the objective. In this case, that is to determine the effects of potential near-term developments involving credit and currency markets on the execution of an existing strategy. The next step is to formulate a set of scenarios. The number can vary; typically two to four are the most manageable. The scenarios reflect "what-ifs" concerning aspects of the business environment that are of greatest interest to the company. For example, assume in Scenario 1 that fiscal reforms and emergency measures prevent any national defaults, but the value of the euro falls substantially. In Scenario 2, Greece defaults and it, along with several other countries, leave the eurozone, resulting in two or more sets of monetary and economic repercussions (inside and outside the eurozone). In Scenario 3, internal dissension causes a breakup of the eurozone altogether, with a wider range of aftereffects.

Phase II: Conduct the financial impact analysis

In this phase, econometric modeling is used to estimate the financial impact of each scenario. In the first scenario, a weakened European economy would have a direct impact on European sales, as well as a potential indirect impact on U.S. sales. At the same time, the euro would be weakened compared to the U.S. dollar and Asian currencies. As this happens, the relative cost of manufacturing products in Asia becomes more expensive, coupled with weakening demand in Europe. Moreover, the weakened euro would make the European operations less profitable. In the second and third scenarios, there would be national currencies to consider as well. Which national and product markets are affected and to what extent will be different in each scenario.

By analyzing the ripple effects of the different versions of a weakened European economy, executives can identify contingency plans and tactical, operational solutions, which are discussed in Phase III. In this phase, though, they need to project the financial impact, develop the econometric model, and establish a monitoring process as follows:

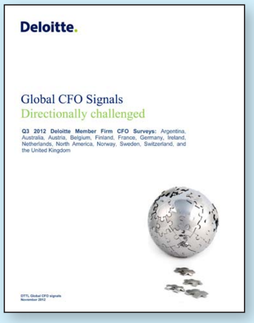
Projecting financial impact: To project the potential financial impact of scenarios, the first step is to identify the economic indicators that impact the business. The manufacturing company in the example may find that European revenue is correlated to three economic indicators: European sovereign state GDP, the exchange rate between the U.S. dollar and the euro, and durable goods orders. Other examples of indicators could include inflation rates, consumer spending, or investment in a particular sector.

Two of the more challenging parts of this process are defining the future states of the economic indicators and obtaining historical data extracts. Another challenging aspect can sometimes come as somewhat of a surprise—getting historical data from a company's systems. Taxonomy and system changes throughout the years, as well as data quality issues, can often complicate a seemingly simple task.

Developing an econometric model: After the appropriate data have been obtained, an econometric model can be developed to establish a relationship between historic performance and economic indicators. Multiple regression is a common technique used to make predictions and projections. In essence, revenue is projected by applying the historical relationship to the state of the indicators in the scenarios. Before building an econometric model, various aspects of both the data and business that could impact results should be considered. Common considerations include seasonality, mergers, performance lags, business diversity, and one-time events.

Establishing a monitoring process: After initial projections are established, a monitoring process should be built to identify trending and changes in the indicators. By maintaining ongoing commentary surrounding changes in the forecasts, CFOs can gauge whether their scenarios and corresponding actions remain appropriate. Staying current with economic developments will also make it easier to act on scenarios for shorter-term tactical operations, or perhaps identify a new scenario.

Deloitte's *Global CFO Signals*: Euro actions and attitudes



Judging by the results of the third-quarter CFO surveys conducted globally by Deloitte's member firms, CFOs are concerned about the potential of a breakup in the single currency. Many just aren't worried enough to be changing their operations—at least not yet.

In several of the 14 surveys that comprised the latest Deloitte ***Global CFO Signals*** report, CFOs were asked to assign a probability of one or more euro members leaving the single currency.[3] In Norway, for example, on average, CFOs attached a 22% probability to a member exit in the next six months; UK CFOs assigned a 27% probability of a departure within 12 months; and German CFOs weighed in with a 44% overall probability of an exit within five years—although a similar number believed it will survive with the current members intact.

In Switzerland, the results were more granular. For example, the average probability of Greece leaving the common currency within the next 12 months was estimated to be 27%; however, over a three-year period, the probability rose to 48%. Portugal, Spain, and Italy were also considered at risk, with an average exit probability over three years of 19%, 16%, and 11% respectively.

It is interesting to note, however, that CFO concerns have eased in some countries. In Belgium, for example, announcements from the European Central Bank and the introduction of the Outright Monetary Transactions seemed to have lessened CFOs' worries about the eurozone: in the third quarter 16% considered the likelihood of a member state leaving the eurozone high, down from 42% last quarter. In the UK, the assigned probability shrank 25% from last quarter. And even in Finland, where fears of secession rose slightly, the majority of CFOs only assigned a 20% chance or below to the first eurozone member exiting within 12 months.

As for responding to the crisis, few CFOs reported that their companies were ready to deal with adverse developments. In Belgium, for example, more than 70% of respondents who expect at least some effect on their company's business in the event of a member exit reported making few or no preparations—or seeing no way to mitigate the risks of a euro breakup. Similarly, in Germany, 64% of companies have not done any planning/preparation for a euro exit. In Sweden, one out of four CFOs surveyed said their companies had performed some kind of stress test regarding a situation where the euro does not exist in its present form, but only 7% had adjusted their operations to such a situation.

Still, there are repercussions that could be felt for some time. In the UK, for example, CFOs surveyed rated the economic weakness of the euro area as second only to macroeconomic uncertainty in its dampening effect on business investment.

Phase III: Analyze scenario impacts and define responses

After potential financial impacts are identified in Phase II, the next step is to draw inferences and consider what the company would do in each scenario.

In the example, the multinational manufacturing company can develop plans to mitigate potential revenue loss incurred in each of the eurozone distress scenarios. It may identify strategies ranging from increasing global integration to diversifying its product portfolio and/or customer base, and from reducing cost structure through headcount or process improvements to changing its marketing strategy. The company can also identify means for coping with major swings in currency values. Thinking through each scenario provides insights as to how to deal with any of the potential outcomes.

Through monitoring the environment, the company can also determine the appropriate time to implement the plans and will be well positioned to change course to help mitigate any negative effects. In the process of thinking through scenarios and responses, the company may also identify changes that would be beneficial regardless of which scenario should come to fruition. Putting such "no-regrets" changes into effect allows a company to improve its ability to deal with a range of potential business conditions without reducing its current competitiveness and without discounting any particular prediction of what lies ahead.

Once strategies have been identified, company executives can work with key stakeholders to develop an integration plan and socialize any required changes to current practices that may be needed to deal with scenario conditions. Business managers who have helped to develop the models can help integrate the models into their day-to-day efforts as organically as possible. Success can depend on how well the plans are received and how much ownership the managers feel they have had in the process.

Phase IV: Adapt and refine the econometric model

After the initial model has been socialized and key stakeholders feel comfortable with the model and the process itself, the process and its four phases can be restarted. Monitoring events to determine when the future has become reality relative to the scenarios, including establishing benchmarks to prompt action relative to real-world developments, will drive the process back through the four phases. Continuous evaluation of the base model, including the ongoing relevance of economic indicators, is critical in order to expand and hone it until the model reaches its full functionality.

Meanwhile, additional feedback can be obtained from the business managers, which will help in enhancing the model as well as building relationships and gaining trust. Finally, it is important to be realistic about the timeline. Do not expect to deliver a "final" model in a few months. Although the process can take time to develop, over the long term the effort will likely be worthwhile.

Endnotes

[1] *Global CFO Signals,* "Directionally Challenged," see 3Q2012, November 2012. http://www.deloitte.com/view/en_GX/global/insights/focus-on-the-issues/cfo-connect/279bd73bf5ffa310VgnVCM2000003356f70aRCRD.htm

[2] "Econometric analysis for scenario-based planning," Strategic Analytics, Deloitte Services LP Available online at http://www.deloitte.com/view/en_US/us/Insights/browse-by-role/Chief-Financial-Officer-CFO/2e38056406359310VgnVCM2000001b56f00aRCRD.htm

[3] *Global CFO Signals*, "Directionally Challenged," see 3Q2012, November 2012.

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