U.S.

Economic Watch

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Economic Analysis

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Commercial Paper Outlook

As Bad as the Great Depression

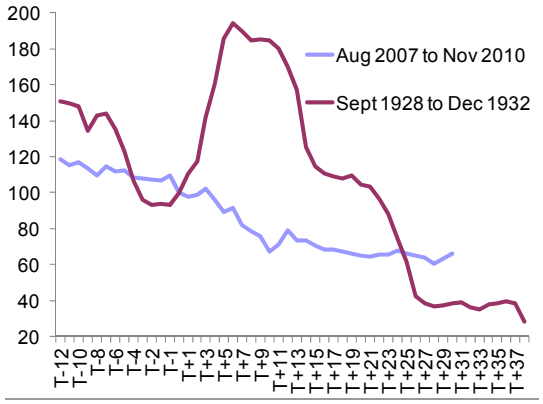
- **Declines in commercial paper are consistent with historical data from the Depression**
- **The dollar basis is sensitive to shocks in commercial paper and limits dollar funding**
- **Our forecasts imply a mild recovery starting in 2013**

A Conduit Too Far: Commercial Paper 2011-2013

During the golden age of finance, commercial paper grew in prominence because it combined the scale and liquidity of US financial markets with short-term funding structures. Commercial paper operates along three lines: asset-backed commercial paper (ABCP), financial commercial paper and corporate commercial paper. Corporate commercial paper is used by large firms to finance short-term needs for working capital and inventory management. ABCP emerged from the rapid growth of conduit structures or structured investment vehicles, which are typically sponsored by a financial entity to invest in long-term assets, often securitized assets originated by clients or some other financial institution. ABCP therefore became popular with commercial banks (both US and non-US), who accounted for roughly 75 percent of ABCP in 2007. Some financial firms may issue financial commercial paper to raise short-term funds. The main issuers of financial commercial paper are non-US financial institutions and finance companies. Foreign financial institutions may set up subsidiaries or affiliates in the US in order to tap the commercial paper market. Additionally, the access to commercial paper allows non-US financial firms to directly raise funds in dollars on a short-term basis. Finance companies are also quintessential issuers of financial commercial paper, although in the past decade they have shifted more towards the medium-term-notes market for their funding needs. Naturally, all of this seized to a halt during the Lehman crisis, which exposed fractures at every part of the commercial paper architecture. The carnage is known: total commercial paper has declined as much as during the Great Depression.

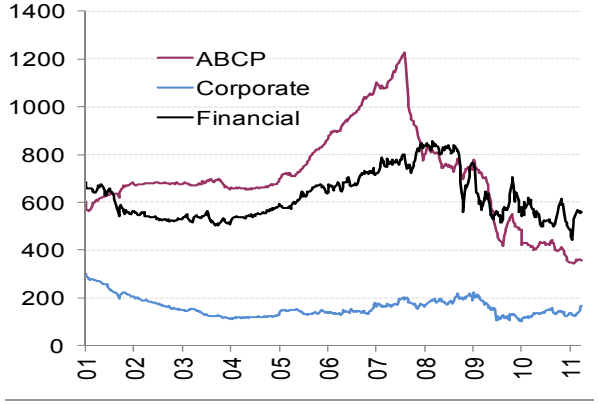
This brief will outline the supply, demand, monetary, and regulatory drivers of commercial paper moving forward. We will outline some related difficulties in dollar funding. Our outlook for commercial paper is dire give the economic and monetary policy context.

Graph 1
Nominal Monthly Commercial Paper Outstanding, 2007-2010 and 1928-1932



Source: BBVA Research; Indexed to T= Oct 1929, Sept 2010

Graph 2
Weekly Major Commercial Paper Categories Outstanding, 2001-2010, In $bn, Nominal



Source: Federal Reserve

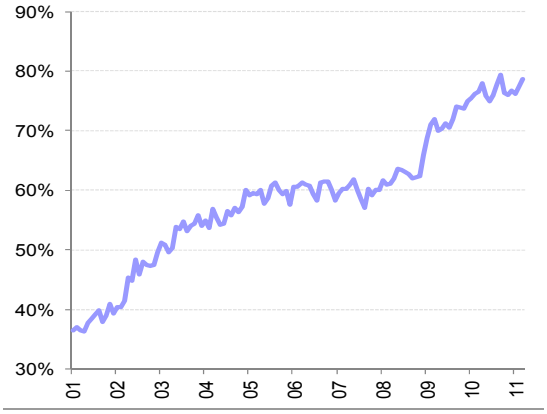
In general, buyer demand for commercial paper arises from money market funds and mutual funds, generally private savings. Traditionally, investors enjoyed rare defaults and slightly better yield than short-term Treasuries. However, given a different risk perception in the market and extremely low yields this is no longer the case. Commercial paper supply conditions revolve around credit quality, monetary policy and business activity. For the three categories of commercial paper – ABCP, corporate and financial – each is affected by the term structure of interest rates, which governs the financing decisions and demand for types of debt at different maturities. The key short-term interest rate affecting commercial paper is the Fed Funds rate and its relationship to the three-month commercial paper rate. Rising short-term commercial paper rates, which traditionally move in tandem with the Fed Funds rate, should increase investor interest in holding commercial paper, prompting supply. Of course, at the present moment we expect the Fed Funds rate to remain exceptionally low for an extended period of time. This will represent a serious impediment to any near-term recovery in commercial paper.

Outside of the term structure, financial commercial paper issuance is related to commercial and industrial lending (C&I), nonresidential capital spending, credit quality of financial firms and large-time deposit growth. Although financial firms' credit quality has improved, their reliance on short-term funding is curtailed and business finance will remain slow due to lackluster growth. Additionally, regulatory changes will preclude as extensive use of short-term funding by financial firms. Many international banks used US-based subsidiaries to raise dollar funds in the commercial paper market. Indeed, the importance of foreign firms in the financial commercial paper market has only increased since the crisis, which pushed out US financial firms dependent on wholesale funding (Chart 3, which includes foreign and domestic subsidiaries of foreign firms). Fractures in the commercial paper market coincided with a sharp rise in the dollar basis (calculated using the Fed Funds rate and the 3 Month LIBOR). Stresses in dollar funding have occurred since the fall of Lehman – most notably at the beginning of Greece's sovereign debt crisis – but the associated tremors in commercial paper discounts are not as large. Overall, the degraded size and usage of the commercial paper market represents a drag on dollar funding internationally.

Corporate commercial paper is the most stable of the three commercial paper categories, but the upside is limited. Corporate paper traditionally responds to cash flow, equipment spending and inventories, but we do not expect very robust activity in these areas. Moreover, corporations are refinancing long-term debt and taking advantage of extremely low long-term rates, a substitute for short-term financing. Firms are very liquid, so the need for external financing is low. Credit trends are generally improving for corporations, but these previously mentioned factors will predominate.

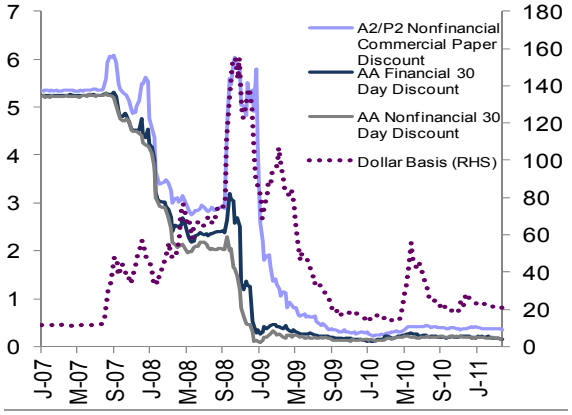
Due to the reshaping of securitization laws and credit risk retention requirements in the Dodd-Frank Act of 2010, ABCP will probably take the longest to recovery from the shock of 2007 and will remain lackluster clear to 2012. A good word to describe the ABCP market is "wrecked." ABCP growth generally is the result of warehousing mortgage assets and consumer borrowing, both of which is permanently shocked from the credit crunch.

Graph 3
Foreign Firms as % of Financial Paper



Source: Federal Reserve; Note: Not Seasonally-Adjusted

Graph 4
30 Day Discount Rates and Dollar Basis



Source: Bloomberg

Forecasts for Commercial Paper

Although extremely volatile, we approached forecasting commercial paper from the standpoint of threshold effects. We employ three different models: a threshold autoregression model (TAR), a univariate smooth transition model (STAR), and a multivariate logistic smooth transition model (LSTAR). For the last model, commercial paper issuance is related to the commercial paper rate and GDP growth.

The TAR model, in particular, allows us to treat moments of very high and very low commercial paper growth with different specifications based on a statistically-determined threshold which assumes that the state variable changes discretely between states. We found a significant threshold effect in commercial paper issuance. This captures the effect of unusual events like recessions and financial crises. The STAR model extends the TAR model by making the transition between states more gradual and smoother. The LSTAR model takes this threshold another step forward by allowing for a nonlinear specification and by relating commercial paper outstanding to other related financial and macroeconomic indicators such as the commercial paper rate and nominal GDP. The LSTAR model is also able to handle a continuous transition between states which make these models suitable for possible structural breaks and asymmetries that the economy might be exposed to.

The TAR model can be written as

$$y_t = \begin{cases} \alpha_{10} + \alpha_{1p} y_{t-p} + \epsilon_{1t} \text{ if } y_{t-i} > \tau \\ \alpha_{20} + \alpha_{2p} y_{t-p} + \epsilon_{2t} \text{ if } y_{t-i} \leq \tau \end{cases}$$

Where τ is the threshold value. The LSTAR models can be written as

$$i_t = \alpha_0 + \alpha_1 x_{t-i} + \alpha_2 z_{t-i} + \theta(\beta_0 + + \beta_1 x_{t-i} + \beta_2 z_{t-i}) + \epsilon_t$$

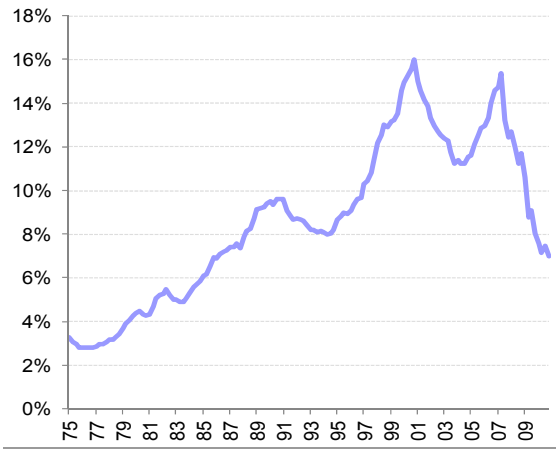
where θ, transition function, has a logistic function:

$$\theta = 1/[1 + \exp[-\gamma(w_{t-i} - c)]],\ \gamma \geq 0,\ i = 0, 1,\ \text{or n}$$

where c is the threshold value and w_{t-i} is the threshold variable. By construction, θ fluctuates between 0 and 1. For extreme values of θ, the model becomes linear. In addition, γ is a speed of transition indicator. If $\gamma \to \infty$, the model becomes a linear regression whereas if $\gamma = 0$, the model converges to the threshold model with extreme regimes. Therefore, anything between these two extreme cases, γ determines how smooth the transition between states would be. In logistic models, positive coefficient values would indicate that the commercial paper growth rate reacts more aggressively to the explanatory macroeconomic and financial indicators when the threshold variable is high than when it is low. In the LSTAR nonlinear model, the starting points are determined by the coefficients of a corresponding linear model and the model is estimated by nonlinear least squares using Gauss-Newton method with 5000 iterations. The STAR model also assumes a logistic transition function.

Graph 5

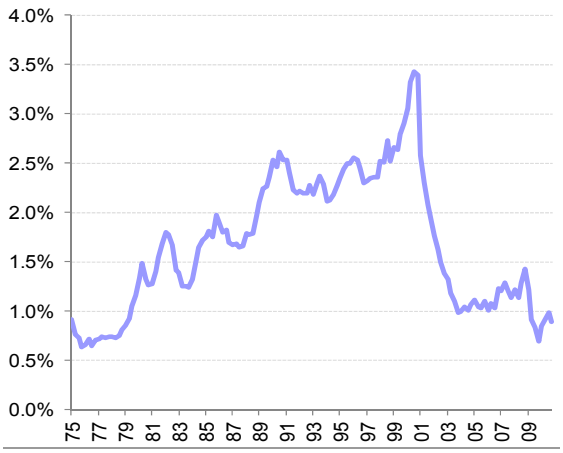
Commercial Paper as % of GDP



Source: Federal Reserve

Graph 6

Nonfinancial Paper as % of GDP

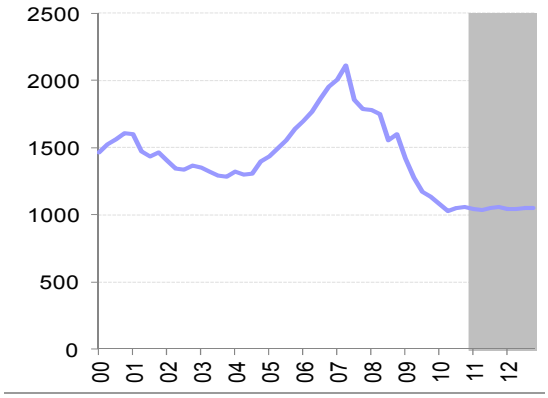


Source: Federal Reserve

The data include the federal funds target rate, commercial paper issuance and nominal GDP. The sample covers the period between 1952:1 and 2010:4 using quarterly data which are available at Haver. The LSTAR model is estimated for period between 1975:1 and 2010:4 due to data availability. The BBVA Research baseline scenario is used for the future path of nominal GDP and interest rates which were used in the LSTAR model.

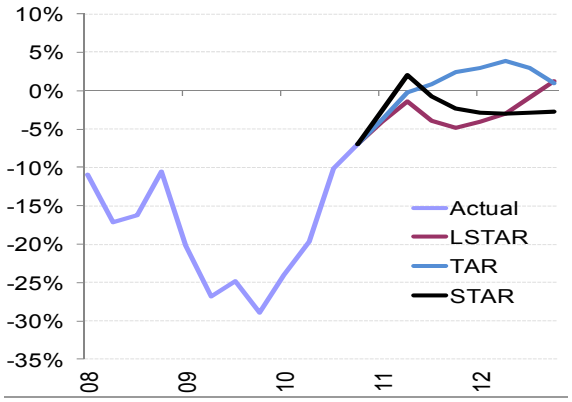
The models offer different advantages and disadvantages, but the threshold models are signaling to us that we should not expect growth in commercial paper for several quarters. It is likely that the next available data from the Federal Reserve's Flow of Funds will show that commercial paper outstanding fell at a -4% YoY rate. We can expect the average YoY growth rate in 2011 and 2012 to be around -2% and 0.5%, respectively. Overall, we anticipate that the level of nominal commercial paper will remain flat for several quarters. The implications of this forecast are that traditional sources of borrowing through commercial banks will remain favorable while the short-term market undergoes a healing process. The level of the Fed Funds rate is also a determinant, as it will change the relative favorability of long-term versus short-term funding. Although it will take several quarters or longer to recover, we do expect commercial paper to return, but with the excesses of the past excised.

Graph 7
Commercial Paper Forecast, $bn Nominal



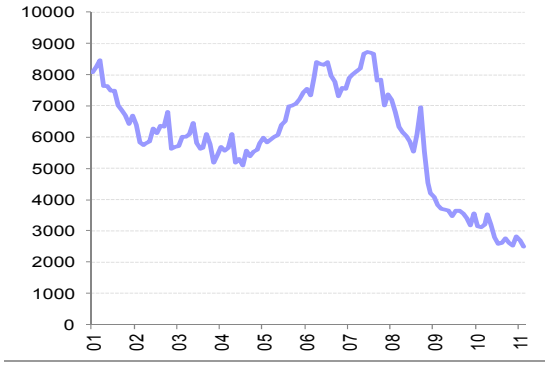
Source: BBVA Research & Federal Reserve

Graph 8
Commercial Paper Models, YoY % Change



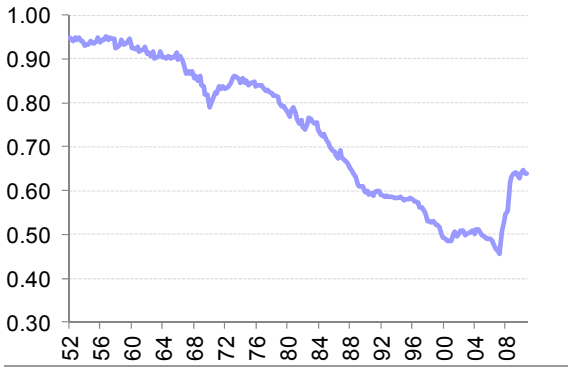
Source: BBVA Research

Graph 9
Commercial Paper Issuance, Number



Source: BBVA Research & Federal Reserve

Graph 10
Commercial Paper-Loan Mix, Ratio



Source: BBVA Research & Federal Reserve