



U.S. INFRASTRUCTURE

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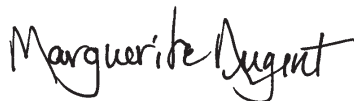
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In this week's special report, Standard & Poor's Ratings Services delves into many facets of an area often taken for granted by the average citizen until something goes awry—transportation infrastructure. The plight of the nation's infrastructure has not been lost on industry participants and the U.S. Government. But while there appears to be a broad, bipartisan agreement in Washington that something must be done to upgrade the country's roads and rail networks, bridges and tunnels, and airports and seaports, a number of issues still divide Congress, not the least of which is how this will be financed.

Credit analyst Jodi Hecht says that a swift resolution of this sticking point has become increasingly important, given that the U.S. now ranks 24th in the world for quality of overall infrastructure. And the cost of not investing sufficiently in the country's roads and bridges could be \$3.1 trillion in lost GDP growth by 2020.

The issue is coming to a head as a major source of revenue for infrastructure funding—state and federal gasoline taxes—is declining because of continuing economic uncertainty and an increase in the use of fuel-efficient vehicles. Meanwhile, the cost of maintaining highways has expanded with the national population and is compounded by the aging of the system and the growth of suburbs around most cities. Repair demands will continue to grow as the system ages, and we expect maintenance costs to grow faster than both inflation and revenue from gasoline and vehicle taxes.

What does all this mean for the credit quality of transport providers? Credit analyst Geoffrey Buswick notes that the service provided, financial performance, and capital and facility development are among the factors we consider during the rating process. But the most important factors are demand for the facility and whether it is maintained to provide safe and reliable service. However, he notes that "Demand and consumer preference are usually aligned with economic cycles. During an economic recovery, credit measures for most transportation sectors typically improve as greater economic activity spurs job growth, which thereby increases commuter activity, business travel, the number of products shipped, and consumers' disposable income." Needless to say, the current economic environment only adds to the general sense of uncertainty about how to proceed with future projects.



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SPECIAL REPORT

12 U.S. Transportation Infrastructure Falls Into Disrepair While Washington Bickers Over Funding

By Jodi E. Hecht, New York

The need to repair and expand the U.S. transportation infrastructure may not have provoked the political posturing that more voter-sensitive issues have in recent months, but debate in Washington over the topic continues. Despite the broad, bipartisan agreement that something must be done, numerous issues divide Congress, including how to finance a sweeping upgrade of the country's transportation means.

17 U.S. Transportation Infrastructure: Increasingly Unpredictable Federal Funding Could Stall Projects

By Geoffrey Buswick, Boston

Transportation infrastructure is the backbone of the U.S. economy and plays a role in the way of life for virtually the entire population. With the Congressional focus on reducing the budget deficit, funding for transportation projects may be lower. The transportation infrastructure sector relies on government funding, but state and federal funding has become increasingly unpredictable. This can result in a domino effect of severe consequences.



22 State Highway User Tax Bonds Maintain High Credit Quality Despite Higher Gas Prices

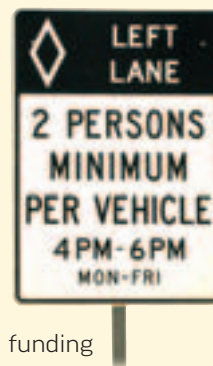
By Dave G. Hitchcock, New York

The historically high fuel prices in the U.S. these days have caught many people's attention, and not just SUV drivers. Holders of state highway user tax bonds may wonder whether rising prices will affect the credit quality of their bonds, which gas tax revenues support. Because states generally tax fuel on a per-gallon basis, falling demand could lower revenues. Demand could also fall if more people switch to fuel-efficient, hybrid, or electric vehicles.

32 Buying Time: Credit Considerations In Analyzing U.S. Managed-Lane Facilities

By Matthew Hobby, New York

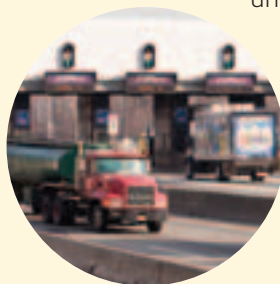
Standard & Poor's expects overall U.S. traffic to resume growth now that the economy is recovering, although the rate of growth may be lower than historical rates. Many urban U.S. communities are facing worsening gridlock as well as limited funding for new freeway lanes. So, local governments are increasingly turning to managed-lane facilities to relieve not only traffic congestion, but also drivers' anxieties—and to raise revenue.



39 U.S. Public And Private Toll Road Operators: Price Increases Converge As Project Funding Intensifies

By Ben Macdonald, CFA, San Francisco

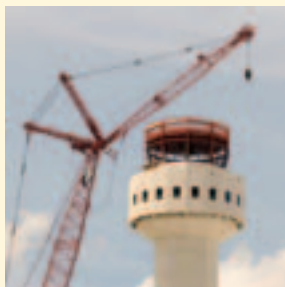
Of the 75,000 miles of U.S. highways, only about 7% require tolls. But that mix could change as tighter government budgets force officials to seek methods to fund new projects. These include selling underused assets, putting tolls on free highways, and building premium-price express toll lanes. With growing demand for new roads, coupled with rising operating and maintenance costs, toll roads likely will remain a key financing option for U.S. roads.



45 FAA Funding Reductions Could Ground Some U.S. Airport Projects

By Joseph J. Pezzimenti, New York

The need for funding for safe, reliable, and up-to-date transportation infrastructure keeps growing in step with the demands of a rising population, and airports are no exception. But declining federal support, a weak economy, and the financial stress that might result from some financing options could make it tougher for U.S. airports to pay for critical projects. As such, they may increasingly need to approach the capital markets to get the funding they need.



CREDIT FAQ

51 How Government Support—And Government Funding—Affect Our Rating On Amtrak

By Lisa Jenkins, New York

The disagreements in Congress regarding fiscal policy and the passage of the Budget Control Act Amendment of 2011, which calls for significant reductions in expenditure growth over the next 10 years, make future appropriations for Amtrak harder to predict. Even so, we still believe Congress will continue to support Amtrak in its current form for public policy reasons.

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Topic	Date	Location
U.S. Housing Market & Outlook for Private-Label RMBS	April 18	New York
U.S. Local Governments Proposed GO Criteria—A Roundtable Discussion	April 24	San Francisco

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Ratings On The United Kingdom Affirmed At 'AAA/A-1+'; Outlook Stable

Standard & Poor's Ratings Services affirmed its 'AAA' long-term and 'A-1+' short-term unsolicited sovereign credit ratings on the United Kingdom (U.K.). The outlook remains stable. The transfer & convertibility (T&C) assessment on the U.K. remains at 'AAA'.

The unsolicited ratings on the U.K. reflect our view of its wealthy and diversified economy, fiscal and monetary policy flexibility, and adaptable product and labor markets. We believe that the U.K. government maintains a strong commitment to implementing its fiscal mandate, and has the ability and willingness to respond rapidly to economic challenges. We also view the U.K. as having deep capital markets with strong demand for long-dated gilts by domestic and non-resident institutional investors alike.

In our view, the U.K. government's efforts over the next few years to engineer a steep correction in the fiscal accounts will likely drag on economic growth. At the same time, we expect that household spending in the short term will likely be dampened by sluggish nominal wage growth, a fragile labor and housing market, and a high, albeit falling, private sector debt burden—despite recent measures introduced to support private consumption. Nevertheless, we believe the U.K. economy's

capacity to absorb shocks has improved. The household sector has developed a savings buffer and large corporations have accumulated substantial cash positions. There are other indications that a gradual rebalancing of the economy has started: net trade in goods and services made a positive contribution to GDP growth in 2011, partly in response to the 20% real-effective depreciation of the exchange rate since 2007. However, the pace of export volume growth slowed during 2011, largely due to a weakening external environment, which we expect to continue to negatively affect the U.K.'s export performance in 2012. Despite having run a current account deficit over the past two decades, the U.K.'s net international investment position has remained essentially stable as a percentage of output.

We expect the U.K. will post relatively modest real GDP growth of about 1.6% between 2012 and 2015, although we acknowledge that these projections are highly uncertain and subject to risks in either direction depending on domestic credit conditions and external developments. We expect the economy to reach 2007 output levels in real terms only in 2014. An accommodative monetary policy should, in our view, provide some support to the economy, as low

interest rates keep private-sector debt-servicing costs moderate, and the currency at competitive levels. However, we also think that economic rebalancing may lead to lower growth in tax revenues than the Office for Budget Responsibility (OBR) currently projects, which could put pressure on public finances.

The government's fiscal aim is to balance the cyclically-adjusted current budget by the end of a rolling five-year time horizon, currently fiscal-year 2016 to 2017. A supplementary target aims to see public sector net debt as a percentage of GDP falling by fiscal year 2015 to 2016.

We forecast a general government deficit of nearly 4% of GDP in calendar year 2015, using the accruals-based European (ESA 95) accounting standard, compared with the government's 2.9% projection for fiscal year 2015 to 2016. Standard & Poor's higher estimates for the deficit are largely based on our view that economic growth will likely be lower than that forecast by the OBR. Despite our projections for a slower pace of fiscal consolidation, we anticipate the general government net debt burden to peak in 2014 at just below 90% of GDP on an ESA 95 basis, before gradually declining. This compares to our previously published opinion



in October, 2011, that net general government debt would peak a year earlier, in 2013, and at a lower level.

Nevertheless, we see general government debt of just under 90% of GDP as a sustainable burden for the U.K. in light of the country's advantages, namely its superior monetary and fiscal flexibility, economic resilience, and political resolve to stabilize public finances. Moreover, we see that the U.K. Treasury benefits from access to deep local currency capital markets, and the decisive backing of a lender of last resort, namely the Bank of England. The market-value weighted average maturity of U.K. government debt is more than 14 years, which should help contain the U.K. government's annual public gross borrowing needs compared with those of peer sovereigns.

We assess the contingent liabilities stemming from systemic risk in the banking sector, public enterprises, and public finance initiatives as "moderate". Although a large amount of term funding, of about £140 billion (9.3% of 2011 GDP), is

(continued on page 6)

(continued from page 5)

Ratings On The United Kingdom Affirmed At 'AAA/A-1+'; Outlook Stable

set to mature in calendar year 2012, all the major banks have reported improvements in their term funding plans, aided by the general improvement in funding conditions for British banks so far this year and their use of the European Central Bank's long-term refinancing operation in February. Nevertheless, the banking sector is still dealing with the fallout from a high private sector debt burden and a property

price correction, and its own deleveraging creates headwinds for the economy. The sector is also exposed to counterparty and rollover risk stemming from the interconnected European financial system.

The stable outlook reflects our current expectation that the government will continue to consolidate public finances, enabling net general government debt as a percentage of GDP to stabilize by 2014, and that the economic

recovery will gain traction over the medium term.

We could lower the ratings if we came to the conclusion that the pace and extent of fiscal consolidation was slowing beyond what we currently expect. Downward pressure on the ratings could also come from materially weaker economic growth than we currently anticipate over the medium term. The household sector remains vulnerable to an unex-

pected increase in interest rates as well as further falls in house prices. Finally, if—contrary to our current expectations—the U.K. banking sector were to require additional capital support, pressure on the sovereign ratings could build.

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Standard & Poor's Outlines Approach To Endorsing Global Scale Ratings Issued In The U.S., Canada, Hong Kong, And Singapore

Standard & Poor's announced details of its approach to endorsing, for EU regulatory purposes, global scale credit ratings issued in the U.S., Canada, Hong Kong, and Singapore into the European Union. This follows the European Securities & Markets Authority's (ESMA) recent determination that these are endorsable jurisdictions.

The EU Regulation on Credit Rating Agencies 1060/2009 requires ratings firms that are registered in the EU to identify any ratings that are assigned outside the EU and that are endorsed into the EU (see the media release, "Standard & Poor's To Start Endorsing Certain Non-EU Ratings Following EU Registration," published Oct. 31, 2011, on RatingsDirect on the Global Credit Portal). We understand that as a general matter, after April 30, 2012, investors in the EU will not be able to use for certain regulatory purposes ratings assigned

outside the EU that are not endorsed pursuant to the EU regulation. Endorsement will be carried out by Standard & Poor's Credit Market Services Europe Ltd.

ESMA confirmed on March 15, 2012, that it considers the regulatory frameworks for credit rating agencies (CRAs) of the United States of America, Canada, Hong Kong, and Singapore to be in line with EU rules. For the endorsement by EU CRAs of credit ratings issued in non-EU countries, the ratings must be issued by CRAs that are registered or licensed and are subject to supervision in those countries. This is already the case for the U.S. and Hong Kong. In Canada and Singapore, the registration of CRAs is at an advanced stage, and ESMA has indicated that it believes this process should be completed before April 30, 2012.

As a result, our approach to endorsement in these juris-

dictions is as follows:

- Standard & Poor's will endorse all global scale ratings assigned in Hong Kong from April 9, 2012.
- Standard & Poor's intends to endorse all global scale ratings assigned in Canada and Singapore following registration of its rating affiliates under the regulatory frameworks of those countries.
- Standard & Poor's will endorse all sovereign, corporate, financial institutions, insurance, and structured finance global ratings assigned in the U.S. from April 9, 2012. Standard & Poor's will endorse U.S. Public Finance ratings "on request," as we anticipate market demand for their endorsement will be limited. In the interim, to the extent that this is needed, U.S. Public Finance ratings can continue to be used for regulatory purposes in the EU through April 30, 2012.
- Standard & Poor's will not



endorse any local or regional scale ratings assigned in these countries.

Endorsed ratings issued in non-EU countries will carry an "EE" ("European Endorsed") identifier. Ratings that are not endorsed but can be used for regulatory purposes in the transition period ending April 30, 2012, will carry an "EX" identifier. The "EE" and "EX" identifiers do not modify our rating definitions. The identifiers will be shown in an additional column in the rating display tables on www.standardandpoors.com.

Museum Of Modern Art Bond Rating Raised To 'AA' On Debt Reduction

Standard & Poor's raised its long-term rating and underlying rating (SPUR) to 'AA' from 'AA-' on New York City Trust for Cultural Resources debt, issued for the Museum of Modern Art (MoMA). Standard & Poor's also assigned its 'AA' long-term rating to the series 2012A and 2012-One-D bonds issued by the trust for MoMA.

The upgrade reflects Standard & Poor's assessment of management's plan to reduce debt as well as MoMA's increased financial resources and liquidity.

"The higher rating reflects our opinion that management will continue to reduce debt as planned, and continue to post positive operating performance on a cash basis, despite future expansion plans," said credit analyst Bobbi Gajwani. "The upgrade also reflects our view of MoMA's continued strong giving by the board, which we view as instrumental to funding high depreciation and interest charges that are not fully incorporated into the operating budget," said Ms. Gajwani.

Credit factors that support the rating include Standard & Poor's assessment of MoMA's:

- Position as one of the world's premier museums of modern and contemporary art, with strong admissions and membership levels despite a stressed economic environment;
- Solid fiscal management demonstrated by multiple years of balanced operating budgets on a cash basis (excluding interest and

depreciation expense), including budgetary surpluses in fiscal 2011 and projected for 2012;

- Good financial resources for the rating category;
- Experienced management team and a prominent board with an impressive giving record; and
- Diverse operating revenue stream. Partly offsetting credit factors include:
 - Deficit operations on a generally accepted accounting principle (GAAP) basis due to not fully funding depreciation

from the operating budget;

- A back-loaded debt structure, with a significant bullet maturity in 2017; and
- MoMA's reliance on campaign pledge payments to pay debt interest costs, although the museum is beginning to build an interest component into its operating budget.

The stable outlook reflects Standard & Poor's expectation that over the next two years, MoMA will continue to reduce debt, not issue additional debt, and maintain financial resources at a level comparable with other 'AA'

rating cultural institutions. Standard & Poor's also expects strong admissions, stable membership levels, and balanced financial operations to continue.

Rating factors that could put pressure on the rating include the issuance of additional debt, deficit operations on a cash basis, and declines in fundraising. A higher rating is unlikely at this time.

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BorgWarner Inc. Corporate Credit Rating Raised To 'BBB+' From 'BBB' On Improved Financials

Standard & Poor's raised its corporate credit rating and senior unsecured debt rating on Auburn Hills, Mich.-based BorgWarner Inc. to 'BBB+' from 'BBB'. The rating outlook is stable.

BorgWarner's financial performance improved more than we had assumed in 2011, and we believe BorgWarner's performance in 2012 will remain robust notwithstanding significant weakness in the important European market. The ratings on BorgWarner reflect the company's intermediate financial risk profile and satisfactory business risk profile. The company's significant market position in the very challenging global auto supplier industry includes engine- and drivetrain-related products (71% and 29% of sales, respectively) that should allow BorgWarner

to continue earning double-digit EBITDA margins.

"We believe these margins and BorgWarner's track record of exceeding industry sales growth supports the satisfactory business risk profile," said credit analyst Nancy Messer. The industry is highly cyclical and typically subject to intense pricing pressure from customers and competitors. However, we expect BorgWarner to continue benefiting from global efforts to improve the fuel economy of passenger vehicles, leading to increasing demand for many of their products that make engines more efficient.

We believe vehicle sales and production in Europe, BorgWarner's largest market at about 56% of sales, could be down by at least single

digits in 2012 because of the weakness in many European economies. Nonetheless, we expect that BorgWarner's sales in Europe will be positive because its product sales have historically outpaced the market and we expect this trend to continue. In the U.S., where BorgWarner has 24% of sales, we expect 2012 light-vehicle sales to rise around 11%, to 14.1 million units; this would be slightly above estimated replacement levels for the first time since 2009.

The rating outlook is stable, reflecting our belief that the credit improvement is sustainable.

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European Banks Face Five Key Risks When Restoring Credit Quality

Extraordinary support supplied by governments, central banks, and supranational bodies is, right now, the most important stabilizing factor for many of Standard & Poor's credit ratings on European banks. In our view, central bank measures have addressed the immediate liquidity risks confronting the industry, giving banks much-needed breathing room to adapt to the rapidly changing operating environment.

In the short term, we believe that it will be difficult for governments to remove support until confidence in political institutions—and their ability to adapt fiscal policy—and financial markets has been restored.

However, we believe that until confidence is restored, and the high uncertainty is reduced, European banks' creditworthiness will continue to suffer, as noted in the report *"The Five Key Risks For European Banks,"* published April 11, 2012.

Against this background, we consider the five key risks to European bank credit quality are:

- **Weakening sovereign creditworthiness:** Any further weakening of sovereign creditworthiness would likely directly and indirectly affect bank ratings and would most likely prompt further negative rating actions. Conversely, restoring confidence and a stabilization of sovereign ratings could ease pressure on bank ratings.
- **Economic recession:** Banks operating in more stable economies, with strong capital, contained funding and liquidity mismatches, diversified risk positions, and client-centric business models are in a better position to maintain creditworthiness. Conversely,

the credit quality of banks exposed to greater economic risk or that of wholesale-oriented institutions whose business operations require high leverage, mismatched funding and liquidity, and continuous access to market funding is more likely to deteriorate.

- **Funding constraints:** Extraordinary support is helping to stabilize the creditworthiness of European banks, but the measures by central banks are also evidence of structural weaknesses in large parts of the banking industry.
- **Transition to more stringent regulatory requirements:** We continue to believe that

the reforms are likely to extend the scope of the balance sheet strengthening measures already initiated by many banks, and potentially trigger fundamental changes in business models and product pricing.

- **The changing nature of government support for banks:** We believe that it will be difficult for governments to remove support in the short term until confidence in financial markets has been restored. However, the rescue operations for the banking systems over the past few years have increased public budget deficits and may have reduced their abil-

ity and willingness to provide support in future crises.

How banks are responding to these five risks, which are interrelated and mutually reinforcing, will have a major bearing on our view of their creditworthiness. For banks that are materially exposed to one or more of these risks, our ratings may come under pressure.

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Macy's Inc. Upgraded To 'BBB' On Strong Performance, Enhanced Credit Protection Profile

Standard & Poor's raised its corporate credit rating on Cincinnati-based department store operator Macy's Inc. to 'BBB' from 'BBB-'. The outlook is stable.

At the same time, we raised our rating on the company's unsecured notes to 'BBB' from 'BBB-'.
"The upgrade reflects

strong performance over the past year, which has led to an enhanced credit protection profile," said credit analyst David Kuntz. It incorporates our view that the company will continue to demonstrate operational gains ahead of its peers, generate solid free operating cash flows, and that credit protection measures will improve modestly over the next two years.



"The ratings on Macy's reflect robust performance that has been ahead of not only our expectations, but also its peers," added Mr. Kuntz. It incorporates our view that these trends will continue over the next 12 to 24 months. As a result, the company has strengthened its credit protection measures. We believe Macy's will manage its financial policies over the next two

years to maintain its metrics within its stated ranges, which, in our view, are commensurate with an "intermediate" financial risk profile and an investment-grade rating.

The company's "satisfactory" business risk profile reflects its solid position in the moderate department store sector, good geographic diversity, and operational gains from the "My Macy's"

Taiwan's Life Insurers Could Face A Potential Cash Flow Test As The Payout-To-Premium Ratio Climbs

Soaring benefit payments and the slow growth of insurance premiums are nudging Taiwan's life insurers closer to a liquidity shortfall. Under the most likely scenario, insurers should be able to maintain enough liquidity to cover cash outflows in 2012. But smaller insurers could face heightened liquidity risk under weaker performance scenarios, according to an article, *"Taiwan's Life Insurers Face A Liquidity Test As Premium Growth Slows,"* published by Taiwan Ratings Corp. on April 11, 2012.

"We believe that our rated life insurers have adequate cash flow from investments to avoid a liquidity shortfall under the sector's most likely performance scenario in 2012," said Taiwan Ratings' credit analyst Patty Wang. "Nonetheless, the risk of heightened pressure on liquidity management is very real, particularly for insurers with smaller market size, stagnant premium growth, and weak asset-liability management."

Life insurers' high and rising benefit payments—including maturities, claims, surrenders,



annuities, and bonuses on policies—will continue in 2012, with premium volume unchanged. Total life insurance premiums fell at an unprecedented rate in 2011, while ben-

efit payments soared 19% year over year from 2010.

"Under our base-case scenario, the ratio of benefit payments to premiums is likely to be 69% to 71% over the next year, which would be an all-time high," said Ms. Wang.

"However, there remains a one-in-10 possibility that benefit payments will exceed premiums altogether, which would place added pressure on weaker insurers' credit profiles," Ms. Wang added.

There is also the likelihood that liquidity risk will diverge between larger and smaller life insurers, as payouts grow at a faster rate than premiums. This is despite insurers' continuous efforts to better manage liquidity risk by improving their asset-liability and cash flow management over the past few years.

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strategy that helps distinguish it from competitors. The company's operating metrics are among the highest for moderate department stores. We note, though, that the department store sector is intensely competitive and vulnerable to declines in the U.S. economy.

Performance was robust over the past year, with total sales increasing by 5.6%. Same-store sales grew by 5.3% and Internet sales increased 39.6%. EBITDA margins strengthened slightly based on positive operating leverage, but were offset by expansion of free shipping and omni-channel investments.

The stable outlook on Macy's reflects our view that strong merchandising and solid execution will lead to further performance gains. We believe that the investments in omni-channel business will yield gains, with

Internet sales in the upper-20% area over the next 24 months. We expect margins to remain relatively stable as lower markdowns and positive operating leverage are offset by spending on omni-channel initiatives. Furthermore, we believe the company will manage its debt issuance and share repurchase activity to maintain an intermediate financial risk profile.

We do not consider an upgrade likely over the next two years. However, an upgrade would be predicated on a revision of the company's financial targets to be more in line with a "modest" financial risk profile. This would include leverage in the mid-1x area, interest coverage meaningfully above 10x, and funds from operations to total debt above 45%. Along with an enhanced credit protection profile, the business

would continue to outperform our expectations as well as its department store peers over this period.

Although unlikely, we would consider lowering the rating if performance falters because of a substantial and sharp deterioration of the economy, poor execution, or merchandising missteps. Under this scenario, sales per square foot would be about flat and margins would have fallen by over 100 basis points. At that time, leverage would be above 3x. Moreover, any excessive share repurchases that cause credit protection metrics to be modestly above the company's target ratios could have a negative ratings implication.

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The Top Macroeconomic Factors Affecting Japanese Structured Finance Credit Quality

Standard & Poor's identifies five key macroeconomic factors that it believes are most relevant to the credit quality of, and therefore its rating actions on, Japanese structured finance securities in the report, *"Japanese Structured Finance Scenario And Sensitivity Analysis: The Effects Of Major Macroeconomic Factors,"* published April 6, 2012. These factors are Japan's unemployment rate, land prices, real GDP, equity returns, and the corporate credit risk premium. After identifying these top five macroeco-

omic factors, we further quantified the links between them and Japanese structured finance rating transitions during both benign and stressful periods.

Japan's structured finance market, excluding the collateralized debt obligations (CDO) sector, averaged a 0.6-notch decline in ratings from January 2009 to December 2011, reflecting the most recent economic downturn in Japan as well as transaction-specific factors. During this period, Standard & Poor's downgraded Japanese structured securities (excluding



CDOs) that had been rated 'AAA' by an average of only 0.2 notches, despite significant deterioration in some of Japan's key macroeconomic factors.

While the credit quality of Japanese structured finance securities (excluding CDOs) has been reasonably stable over the past 10 years, we selected the top five factors that we believe are most relevant to credit quality. These factors are in line with those we identified in our global study (see *"Global Structured Finance Scenario And Sensitivity Analysis: The Effects Of The Top Five Macroeconomic Factors,"* published Nov. 4, 2011).

We use the top five macroeconomic factors to help us better understand and assess the current and future state of the credit quality and rating performance of Japanese structured securities. All these macroeconomic factors tend to be leading indicators in the context of Japan, and thus provide insight into the future state of the performance of collateral backing Japanese structured securities (excluding CDOs).

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Improvement In Fiscal 2012 Earnings Will Be Crucial To Sony's Ability To Maintain Current Ratings

Standard & Poor's said improved earnings at Sony Corp. (BBB+/Negative/A-2) will be crucial to maintaining the current ratings on the company following an expansion of its forecast net loss for fiscal 2011 (ended March 31, 2012) to ¥520 billion from ¥220 billion. Our assessment of the ratings on the company will focus on the new business plan the company is due to unveil on May 10.

In Standard & Poor's opinion, Sony's higher forecast net loss is mainly attributable to a valuation allowance the company plans to record against deferred tax assets, and this move will not have a significant impact on the company's cash flow. We have already incorporated difficulty in Sony's business environment into the ratings

on the company. However, any material increase in Sony's net loss is likely to cause a larger deterioration in the company's balance sheet than we had assumed when we lowered our ratings on the company on Feb. 8, 2012 (see *"Japan's Sony Downgraded To 'BBB+'; Off CreditWatch; Outlook Negative"* published Feb. 8, 2012). The company's earnings forecast for fiscal 2012, which it announced together with the forecast revision for fiscal 2011, exceeded our assumptions.

Sony has raised the possibility of selling assets or taking other measures to improve its financial position. Nevertheless, in Standard & Poor's view, an evident improvement in earnings in fiscal 2012 is crucial to maintaining the

ratings on the company. Sony aims to achieve an operating margin of over 5% in fiscal 2014 by strengthening the earnings of its core businesses, including digital imaging, games, and mobile devices. Standard & Poor's will pay particular attention to whether Sony can make an early recovery in the profitability of its television business. We will assess Sony's future earnings based on its financial results for fiscal 2011 and business plans for fiscal 2012 and will incorporate these assumptions into our assessment of the ratings on Sony.

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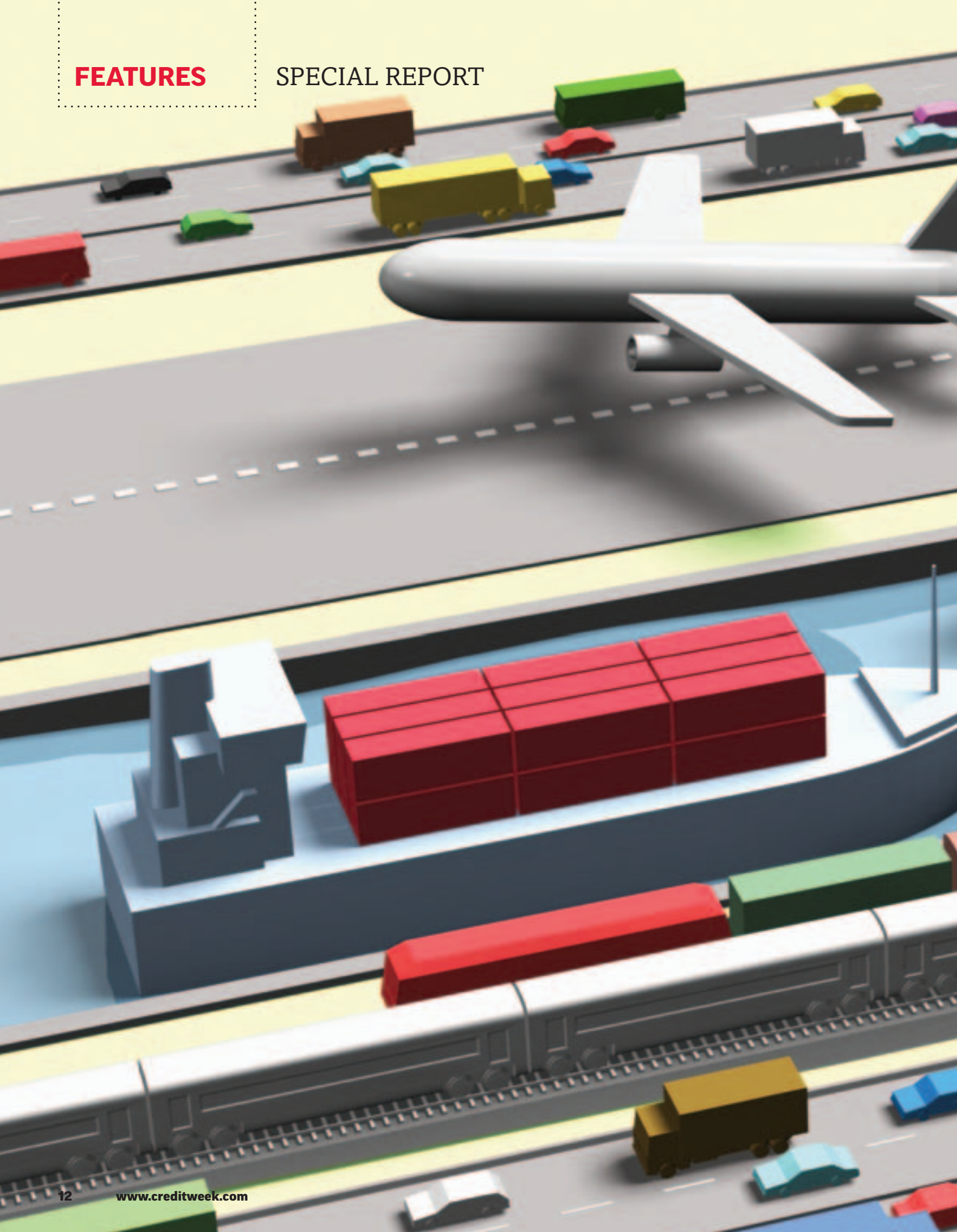
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U.S. Transportation Infrastructure Falls Into Disrepair While Washington Bickers Over Funding

Overview

- The cost of failing to invest sufficiently in the country's roads and bridges could mean \$3.1 trillion in lost GDP growth by 2020.
- A major source of revenue for transportation infrastructure funding—state and federal gasoline taxes—is declining because of continuing economic uncertainty and an increase in the use of fuel-efficient vehicles.
- The cost of maintaining highways has expanded with the national population and is compounded by the aging of the system and the growth of suburbs around most cities.
- Uncertainty about funding can impede the ability of state and local officials to plan for long-term projects. This, in turn, may cause projects to be delayed or deferred.
- We may see an increase in public-private partnerships, given budget constraints and the perception that the private sector may, in many cases, be able to oversee construction and maintenance faster and more cost-effectively than governmental entities.

The need to repair and expand the U.S. transportation infrastructure may not have provoked the sort of political posturing that other, perhaps more voter-sensitive issues have in recent months, but debate in Washington over the topic continues nevertheless. And despite the seemingly broad, bipartisan agreement that something must be done, a number of issues still divide Congress, not the least of which is how to finance a sweeping upgrade of the country's roads and rail networks, bridges and tunnels, and airports and seaports.

A swift resolution to this sticking point has become increasingly important, given that the U.S. now ranks 24th in the world in the quality of overall infrastructure, according to the World Economic Forum's "Global Competitiveness Report for 2011-2012," a factor that has contributed to the country's decline in overall competitiveness to fifth place—the third consecutive decline. (For comparison, Germany, which came in just below the U.S., at sixth in competitiveness, ranked 10th in quality of infrastructure.)

pressure on House Republicans who have tried to link spending on infrastructure to expanded domestic oil drilling, as many push for significant cuts in transportation spending.

Although the bill may never reach President Obama's desk, lawmakers on both sides of the aisle do seem to agree that the federal government's Transportation Infrastructure Finance and Innovation Act (TIFIA) program, which provides loans and lines of credit to fund surface transportation projects, needs a

The U.S. now ranks 24th in the world in the quality of overall infrastructure...

The cost of failing to invest sufficiently in the country's roads and bridges could mean \$3.1 trillion in lost GDP growth by 2020, according to the trade group the American Society of Civil Engineers (ASCE). Included in that figure is the ASCE's projection that the cost of simple traffic congestion could jump ten-fold by 2020, to \$276 billion a year in lost productivity.

Meanwhile, in a report that drew a direct correlation between infrastructure investment, exports, and job creation, the U.S. Conference of Mayors recently called for increased investment in transportation infrastructure to help American businesses sell more of their products in global markets. The group cited a projection that exports will account for nearly 40% of U.S. real GDP growth in the next decade, up from 26.5% in the past 10 years.

Senate Majority Leader Harry Reid (D-Nev.) also has linked increased investment in the country's transportation infrastructure to employment, saying nearly 3 million jobs would be "saved or created" by the two-year, \$109 billion transportation bill the Senate passed on March 14. The bill would go some way toward addressing the scheduled expiration of the federal highway trust fund at the end of April, and approval by Congress' upper chamber would put

sizable capital infusion to meet the country's current transportation infrastructure needs.

Where Will The Money Come From?

The issue is coming to a head as a major source of revenue for transportation infrastructure funding—state and federal gasoline taxes—is declining because of continuing economic uncertainty combined with an increase in the use of fuel-efficient vehicles. The percentage of small cars in the U.S. has risen, albeit somewhat unsteadily, in the past five years, reaching one-fifth of all vehicles on the road in 2012, according to year-to-date industry figures. Meanwhile, total vehicle miles driven has remained essentially flat since late-2007, halting a quarter-century trend of fairly steady increases.

The federal gas tax was implemented in 1956, at 3 cents per gallon. It is now 18.4 cents per gallon, where it has been since 1993, and the revenues go into the Federal Highway Trust Fund. Most states impose additional taxes on fuel—the average state gasoline tax is 27.2 cents per gallon—making for a total tax of 45.6 cents per gallon. (The rates are slightly higher for diesel fuel.)

Because these taxes are levied per-gallon rather than on a sliding scale that is indexed to wholesale or retail

prices, it is clear that the combination of fewer vehicle miles driven and greater fuel efficiency has resulted in less revenue to pay for infrastructure construction and repair. In fact, although the average retail price of gasoline has recently risen to about \$4 per gallon in the U.S., the gasoline tax rate is relatively low, at about 10% to 15% of the taxes in many European countries, for example (see table 1).

About 20% of the money in the Highway Trust Fund is used for the purposes, such as public transportation. These disbursements mean that just a little more than half of the funding for highway maintenance and construction comes from user fees. Federal and state contributions come mainly from gasoline and vehicle taxes, but local governments fund their contributions from a number of other sources, including general funds, bonds, and property and other taxes (see table 2).

For the almost \$196 billion spent on highway construction and maintenance in 2009 (the latest figures available), about half came from federal funds, approximately 27% came from state funds, and the remainder was from local government sources. (See the related article, “State Highway User Tax Bonds Maintain High Credit Quality Despite Higher Gas Prices,” on p. 22.)

Meanwhile, the cost to maintain highways has expanded with the national population and is compounded by the aging of the system and the growth of suburbs around most cities. According to a 2009 report from the American Association of State Highway and Transportation Officials, the U.S. population has grown 83% since 1956, the number of people employed has doubled, and the average household size has declined significantly. About half of the roads in the U.S. are in bad condition—and those in urban areas are the worst. Repair demands will continue to grow as the system ages, and Standard & Poor’s Ratings Services expects maintenance costs to grow faster than both inflation and revenue from gasoline and vehicle taxes.

The Senate limited the duration of the recent transportation bill, known as Moving Ahead for Progress in the 21st Century (MAP-21), to two years. The proposed legislation, drafted by Sens. Barbara Boxer (D-Calif.) and James Inhofe (R-Okla.), consolidates numerous Federal Highway Administration programs into five core groups and endeavors to give states more flexibility to set their own transportation priorities. MAP-21 is designed to succeed the previous bill (known as “SAFETEA-LU”), which expired on Sept. 30, 2009, and would expand TIFIA to \$1 billion, from \$122 million. (See the article, “Credit FAQ: Standard & Poor’s Approach To Analyzing U.S. Department Of Transportation TIFIA Debt Instruments,” on p. 61.)

The House leadership is considering whether to take up the Senate bill or begin debate on its own \$260 billion, five-year funding plan. On March 29, Congress passed yet another extension, the ninth, to fund U.S. highway programs through June 30 of this year. (See the article, “U.S. Transportation Infrastructure: Increasingly Unpredictable Federal Funding Could Stall Projects,” on p. 17.)

Delay And Danger

Uncertainty about funding for transportation infrastructure can impede the ability of state and local officials to plan for long-term projects. This, in turn, may cause projects to be delayed, thereby increasing their cost, or deferred. Deferring maintenance adds an element of danger and ultimately proves more costly.

The White House has been pressing for big increases in infrastructure spending, partly in an effort to create jobs and bolster the country’s still-fragile economic rebound. President Obama’s proposed budget for fiscal 2013 sets aside \$476 billion to invest in highway, bridge, and mass transit projects through 2018, and \$305 billion of that would go toward rebuilding roads and bridges, a 34% increase from the previous transportation bill. The budget also includes a doubling, to \$108 billion, of the funding for affordable, sustainable, and efficient transit options, of which \$50 billion is for

immediate funding to invest in critical areas of transportation and help boost the economy this year. But with Congressional Republicans pushing for significant cuts to transportation spending in general—and suggesting

Table 1 | Average Gasoline Taxes (2008)

Western Europe	Tax (US\$ per gallon)
Netherlands	5.25
Finland	4.88
Germany	4.84
Belgium	4.73
U.K.	4.65
Portugal	4.61
France	4.57
Sweden	4.54
Italy	4.38
Austria	3.78
Spain	3.40
Average	4.498
Non-European countries	
Japan	2.23
New Zealand	1.93
Australia	1.63
Canada	1.21
U.S.	0.49
Mexico	0.38
Average	1.323

Source: Resources for the Future.

Table 2 | Revenue Sources For U.S. Highway Construction And Maintenance (2009)

Source	Percentage of total
Motor fuel and vehicle taxes	43.1
Tolls	4.8
Property taxes	4.5
General government funds	21.5
Other taxes	5.5
Investment income	7.3
Bond issuance	13.4
Total	\$195.7 billion

Source: U.S. Department of Transportation Federal Highway Administration.

that private enterprise could fill the gap—the president’s proposals look likely to go unfilled, in our view.

Disagreements about transportation spending make future appropriations for entities such as Amtrak harder to predict. Congress funds Amtrak (officially known as the National Railroad Passenger Corp.) by providing appropriations to the Department of Transportation (DOT), which in turn funds the company through the Federal Railroad Administration. The president’s proposed budget calls for \$1.55 billion in direct funding for Amtrak and potential additional funding through competitive grants. We believe that, regardless of whether the budget is passed, Congress will continue to support Amtrak for public policy reasons. (See the article, “Credit FAQ: How Government Support—And Government Funding—Affect Our Rating On Amtrak,” on p. 51.) Meanwhile, the U.S. railroad industry looks set to spend roughly \$13 billion in private capital this year to improve infrastructure; spending on track and facility updates continue to make up a substantial portion of the investment. (See article, “Infrastructure Spending Keeps Rails And Trucks Moving,” on p. 58.)

At any rate, we may see an increase in public-private partnerships (PPPs), given budget constraints at all levels of government and the perception that the private sector may, in many cases, be able to oversee construction and maintenance faster and more cost-effectively than governmental entities. PPPs, which have historically been more popular in Europe than in the U.S., involve private companies bringing their equity and expertise in construction, operations, and maintenance work joining with government agencies to share the project risk.

In what is believed to be the first privatization of a toll road in the U.S., Chicago in 2005 contracted with the Skyway Concession Co. LLC to run the Chicago Skyway Bridge, a 7.8-mile road built half a century earlier under a 99-year lease. Proponents count this PPP among those that have been smoothly implemented and successfully managed.

More recent PPPs have moved toward smaller projects that involve new

construction and are funded with project bonds, state money, federal loans through the TIFIA program, and sponsor funds. Examples include the FasTracks rail system in and around Denver, the Port of Miami Tunnel, and the Long Beach (Calif.) Courthouse.

In addition, funding for the Midtown Tunnel project in Virginia is fairly evenly split between state and local governments, TIFIA loans, and debt financing, with some private money (about 20%). This project involves a new two-lane tunnel that will double the capacity of the existing tunnel and link Portsmouth and Norfolk. On April 2, 2012, we assigned a preliminary ‘BBB-’ rating to the \$675 million, senior-lien revenue bonds due December 2041 (issued by the Virginia Small Business Financing Authority) and to the \$422 million TIFIA loan due in December 2046 for this project.

Falling Short

Whether the money to repair and expand the country’s roads, bridges, and tunnels comes from the federal government, states and municipalities, or the private sector remains uncertain. What is clear is that the U.S. is falling far short in finding the estimated \$2 trillion needed just to rebuild deteriorating networks, according to a report last year by the nonprofit research group Urban Land Institute (ULI), in conjunction with Ernst & Young.

Not only has the U.S. not increased its spending on infrastructure, it has also scaled it back when looked at in terms of the overall economy. Infrastructure spending as a portion of GDP fell to 2.4% in 2007 after peaking at 3.1% in the early 1960s, the ULI report said. Unless politicians and the public agree that this needs to change, the U.S. may continue to lose economic competitiveness. **CW**

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U.S. Transportation Infrastructure

Increasingly Unpredictable Federal Funding Could Stall Projects

Transportation infrastructure is the backbone of the U.S. economy and thus plays a role in the way of life for virtually the entire population, but federal funding is discretionary. And with the Congressional focus on reducing the budget deficit, Standard & Poor's Ratings Services believes future funding for transportation projects may be lower and erratic.

The transportation infrastructure sector, making up highways, mass transit, railroads, airports, and seaports, relies heavily on government funding, but since the start of the last recession, state and federal funding has become increasingly unpredictable. This can result in a domino effect of severe consequences, to the economy and to public safety. For example, Congress finally passed on Feb. 6, 2012, the Federal Aviation Administration funding bill after a record 23 short-term extensions, years of debate, and a two-week partial shutdown. During the shutdown, in August 2011, an estimated 4,000 employees were furloughed, \$360 million

in federal taxes went uncollected, and 219 projects across the country came to a halt in the middle of the construction season, according to ABC News and Reuters. On Aug. 19, 2011, we published, "*Credit FAQ: Potential Credit Risks For U.S. Public Finance Transportation Sectors*," on RatingsDirect on the Global Credit Portal citing the credit risks if projects fell behind schedule or needed to be rebid because of the impasse. Luckily, the brief shutdown never resulted in such events, and we took no rating actions. Now that the bill has been signed into law, airports across the country are returning to fairly normal planning cycles. But the shutdown

Overview

- The uncertain nature of federal funding appropriations has cast doubt on the future of many transportation infrastructure projects.
- The combination of reduced or unpredictable federal support and lower demand could result in deferred maintenance projects that would keep our nation's transportation infrastructure in good repair.
- The most important factors we consider in our credit analysis of transportation infrastructure are demand for the facility and whether it is maintained to provide safe and reliable service.
- We believe the nation's large budget deficit and high debt will continue to cloud transportation funding for surface and air transportation projects.

heightened concerns about the future of federally funded projects of all types, not just airports. Currently, the surface transportation bill remains mired in even greater uncertainty. Holdups in funding reauthorizations and/or significant cuts in infrastructure programs are delaying some projects and forcing others to be scaled back. The House, Senate, and President Obama have submitted competing proposals. On March 14, the Senate approved a two-year, \$109 billion bill with the current working acronym “MAP-21” (Moving Ahead for Progress in the 21st Century). The House leadership is weighing its options about whether to consider the Senate bill or begin debate on its own \$260 billion, five-year funding plan.

With the March 31 expiration looming, Congress passed on March 29 yet another extension to fund U.S. highway programs. This latest continuing resolution, the ninth, provides funding through June 30, 2012. As construction season begins in the northern half of the country, this continuing uncertainty in funding could force states to delay projects rather than risk funding changes or political gridlock come July.

Adding to transportation system managers’ uncertainty are numerous economists’ forecasts for prolonged weak economic growth and high fuel costs. The combination of reduced or unpredictable federal support and lower demand could result in deferred maintenance projects that would keep our nation’s transportation infrastructure in good repair. Such deferrals could hurt an entity’s credit if capital costs escalate over time, putting the system at risk. Conversely, proceeding with such projects could also hurt the credit rating if the resulting liquidity and debt levels are not already reflected in the rating.

The new \$63 billion FAA authorization provides airport operators with more certainty regarding the extent of federal funding available through federal fiscal year 2015, and we expect airport operators to receive some additional federal support beyond that. The authorization provides

funding to upgrade the air traffic control system, termed “NextGen,” and continues to fund the Airport Improvement Program (\$3.35 billion per year), a seed grant funding mechanism. If we revise ratings because entities are drawing on liquidity or taking on more debt than the ratings reflect, such rating changes would likely be minimal (one notch) in most cases and would not be immediate.

So, the key questions for transportation infrastructure entities are, “How could funding delays affect credit quality?” and “Where will the funding come from for these infrastructure projects that are supposed to create jobs?”

How Funding Delays Could Affect Credit Measures

Public transportation infrastructure providers generally have strong business positions from the roles they play on a regional, national, or global scale, or as near-monopolistic service providers (or both). The service provided, financial performance, and capital and facility development are among the factors we consider during the rating process. But, the most important factors are demand for the facility and whether it is maintained to provide safe and reliable service.

Transportation networks in the U.S. have historically faced growing usage, funding shortfalls, and large, uneven capital requirements that are based on long-term forecasts of demand. Demand and consumer preference are usually aligned with economic cycles. During an economic recovery, credit measures for most transportation sectors typically improve as greater economic activity spurs job growth, which thereby increases commuter activity, business travel, the number of products shipped, and consumers’ disposable income.

Other key rating factors are specific to the sector (*see sidebar 1*). For example, key risks are building to overcapacity that might not materialize and the possibility that the cost of the service is no longer reasonable in the markets served. In addition, the political gridlock in Washington, D.C., and the doubt surrounding federal funding are making it

difficult for issuers throughout the infrastructure sector to define long-term plans for funding necessary capital projects.

The transportation entities that we think will be most at risk in the next three to five years are those that depend on revenue growth to serve a high fixed-cost structure or to meet escalating debt payments; are competing with counterparties or tenants in volatile industries; or are unable (because of the market) or unwilling (because of politics) to increase rates. In the long term, how large-scale capital funding needs are satisfied—with debt or federal funding—will have credit implications, as will the extent of reinvestment in the system, as it affects important credit factors such as reliability, safety, and, ultimately, revenue generation.

An additional possible credit concern comes from language in the proposed legislation in H.R. 3864, the American Energy and Infrastructure Jobs Financing Act of 2012, that would end the transfer of excise taxes on motor fuel to the federal Highway Trust Fund's Mass Transit Account. If such language is adopted, it would end the long-standing practice of using motor fuel taxes to pay for federal transit projects or programs. Instead, the proposed legislation would provide a one-time, \$40 billion transfer of general fund revenues to the Alternative Transportation Account, subjecting transit and Congestion Mitigation and Air Quality Program funding to the government's annual appropriations process. This change would make it difficult for public transit agencies to plan for the future. The legislation does not detail how the \$40 billion in general fund revenues would be offset in the U.S. budget, which adds to the funding uncertainty.

We believe the nation's large budget deficit and high debt will continue to cloud funding for surface and air transportation projects. Future federal funding, in our opinion, is likely to be lower. Over time, more of the funding, and our credit analysis, could shift to local transportation system operators. We think such cuts—whether automatic because of

indecision among policymakers, or deliberate—will generally be across the board (especially for programs like transportation that stimulate economic activity and job creation) rather than significant cuts to just a few programs.

Where Funding Could Come From

Highway gas tax receipts were the primary source of funding for the previous transportation bill, commonly called SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). But SAFETEA-LU, which expired on Sept. 30, 2009, needed more than \$30 billion in federal general fund transfers to fully fund the program. The reason was that gas tax receipts have stagnated because of the new federal

miles-per-gallon standards, major auto manufacturers developing more hybrid and electric cars, and consumers driving less because of high gas prices and the recession. We expect the long-term trend in surface transportation funding to reflect the drop in this source of revenue, as those receipts have reached a plateau since the start of the previous recession, and no dedicated replacement revenue stream has been identified. If the gas tax remains the primary funding source for the surface transportation bill, we expect the new bill to be funded roughly 30% lower than the previous bill.

Once a long-term authorization is approved, we believe it will provide an impetus for transportation agencies to reconsider high-priority projects that had

Key Rating Factors By Transportation Sector

Airports

- Service area characteristics and air traffic demand
- Use and lease agreements
- Legal provisions
- Finances

GARVEEs

- Legislative framework and appropriations
- Historical receipts and overall leverage
- Grant program features
- Grant administration and compliance
- Security pledges and legal protections

Parking Systems

- Demand
- Competition
- Management
- Legal provisions

Passenger Facility Charge Debt

- Traffic analysis
- Debt-service coverage
- Airport management
- Legal provisions
- Open lien versus closed lien
- FAA's record of decisions

- Airline bankruptcy
- FAA withdrawals

Ports

- Competition and industry factors
- Management
- Financial operations
- Capital budget
- Legal provisions

Special Facility Debt

- Airport characteristics
- Project necessity
- Legal factors
- Air carriers
- Financial factors

Toll Facilities

- Traffic demand
- Competition
- Management
- Operations
- Feasibility study
- Legal provisions
- Financial projections/debt
- Structure/sensitivity analyses
- Public-private partnerships (P3s): Revenue/debt and equity considerations

Surface Transportation Funding Options

The U.S. public finance (USPF) transportation issuers we rate cover a number of security types: airport revenue bonds, passenger facility charge bonds, special facility bonds, toll roads, grant anticipation revenue bonds, parking systems, transit systems (both fare box and general revenue), and ports. But the segments with the most rated entities are general airport revenue bonds (73) and toll road revenue bonds (47). The number of rated USPF transportation issuers is relatively low—approximately 300—compared with the number of issuers we rate in other sectors, but the amount of debt they issue is fairly large because the projects are capital-intensive and often serve large regional constituencies.

Typical funding options for surface transportation projects in the U.S. are:

- General obligation (GO) bonds;
- Appropriation debt (certificates of participation [CoPs], leases, etc.)
- Sales tax revenue;
- Gas tax revenue bonds;
- Toll revenue bonds;
- Federal grants (Grant Anticipation Notes/GARVEEs); and
- Public-private partnerships (P3s).

Regardless of whether these projects are rated in the USPF state and local government group (SLG), the USPF infrastructure (IFR) group, or the infrastructure and renewables group in our Corporate division, the criteria overlap in the following areas:

- Analysis of existing and future demand and competition;
- Local/regional/national/international economies;
- Financial performance, capital requirements, and total debt;
- Legal protections and regulatory issues; and
- Management.

been shelved because of lack of funding. But if the authorization is extended by even more continuing resolutions, such high-priority projects will remain in limbo.

Congress is discussing additional federal funding programs as well. In a five-year House funding bill and the Senate bill, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program is slated to receive greater annual funding. And, Senators John Kerry (D-Mass.) and Kay Bailey Hutchison (R-Texas) introduced a bill to create a national infrastructure bank funded at \$10 billion. If either of these proposals becomes law, many projects could look

to them for seed money or for a portion of their overall financing.

Grant anticipation revenue vehicles, or GARVEEs, were initiated in the National Highway System Designation Act of 1995. Although GARVEEs are not secured by the federal government, the state entity building a project issues debt, expecting to repay the bonds with future federal transportation grants or reimbursement revenues allocated to states or state agencies according to several longstanding programs codified under U.S. law and approved periodically by Congress under multiyear authorizations. Over the little more than 15 years of the

General Obligation Bonds

(Typically rated in the USPF SLG group)

General obligation (GO) bonds typically have high ratings. There is no true security pledged (i.e., no mortgage), but instead the municipality pledges its full faith and credit to use all its powers to raise funds to repay the bonds. Because GO bonds require the least complex legal documents, this type of bond is often a cheap cost of capital. They can be used for any municipal purpose, but if used for transportation, funds could end up being diverted from other municipal services and thus may not be a recurring source of funding as other projects gain favor. Most GO authorizations require a vote of either the electorate or the highest legislative body, or both. So once approved, it has strong political support. The proceeds are typically used to fund the state transportation budgets for roads, ports, bridges, and transit projects.

Appropriations (Leases/CoPs)

(Typically rated in the USPF SLG group)

Appropriation-backed debt is similar to GO debt in that no specific security is pledged as collateral. The entity pledges to include each year's payment in the budget submittal. Thus, this funding type must be voted on by the highest legislative body. This type of debt is used occasionally when broad public support for a project is not high, but the project is still deemed important. This lack of ballot support can be an added risk because the annual appropriation is then vulnerable to political whims.

Other Tax-Backed Bonds

(Typically rated in the USPF SLG group)

In transportation project financings, user- or consumption-driven taxes (i.e., gas taxes or local-option sales taxes) are

often dedicated by statute or voter initiative to surface transportation projects. Risks associated with these bonds are that a change in consumption of the item being taxed could jeopardize the entity's ability to pay for the project, and voters could subsequently vote against allocating the taxes for the project. In addition, states and the federal government have been reluctant to increase gas taxes, thereby limiting the available revenues over time. Our analysis of such bonds focuses on legal provisions, coverage levels, and entity cash flows.

Toll Revenue-Backed Bonds (Typically rated in the USPF IFR group or Corporate project finance group)

Toll road and bridge debt ratings focus on traffic demand as one of the most essential ingredients for a financially successful operation. For "greenfield" (start-up) projects, construction risk also demands significant analysis. Strong demand for a toll facility is vital for its successful operation and its ability to generate revenues. Our analysis also includes evaluating toll acceptance, toll elasticity (a measure of the change in demand relative to the change in price), and competition from toll-free alternatives. As state revenue sources dwindle, we believe some tolling agencies might expand their missions and use toll-road revenues to fund other transportation projects in the corresponding state (like when the Pennsylvania Turnpike Commission was required through state legislation to help finance other state transportation infrastructure projects).

Grant-Secured Bonds (Typically rated in the USPF IFR group)

The most common transactions are grant anticipation bonds, notes, and other forms of indebtedness, commonly referred to as grant anticipation revenue vehicles, or GARVEES. The

ratings are based on the anticipated future receipt of federal transportation grants or reimbursement revenues allocated to states or state agencies, administered by the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) and approved periodically by Congress under multi-year authorizations. The sources of funding allocated come from the federal excise tax on motor fuels and other excise or use taxes on trucks, trailers, and tires and is deposited in the General Fund of the U.S. Treasury. The current law authorizing the collection and deposit expires on March 31, 2012, and this reauthorization risk, including potential rule changes, is a focus of our analysis. Additional risks include funding risk, as the current motor fuels tax has been insufficient to fully fund the Highway Trust Fund in recent years, and payment timing issues from possible extended federal government shutdowns.

Public-Private Partnerships (P3s) (Typically rated in the USPF IFR group or Corporate project finance group)

With the difficult budget situations for many states, governments may be more willing to consider a partnership with the private sector to complete transportation projects more quickly. These transactions can expose typically more stable municipal credits to corporate credit risk, face political and electoral acceptance issues, and create off-taker risks (or risks associated with the relationship with the buyer of the service). On the positive side, when public-sector funding is limited, private-sector equity funding can enable infrastructure projects to be completed. The federal government uses the Transportation Infrastructure Finance and Innovation Act (TIFIA) program under the U.S. Department of Transportation to foster P3s in the U.S. and provide "gap" funding for up to one-third of a project's total cost.

program, the use of GARVEE proceeds has enabled state transportation departments to accelerate many projects to lower costs and ease transportation problems. But, a recognized credit risk of the GARVEE program is whether federal funding will be delayed or reduced. Lower Congressional appropriations have diminished this source of funding in recent years, which could result in delayed projects and increased total costs as projects take longer to complete.

We believe the credit quality of most of the entities we rate will be resilient through moderate swings in fuel prices, but extended periods of high fuel costs

will require managements to take action to offset lower demand and increased costs. Barring any unusually high costs that would reduce demand for gasoline, we expect transportation to remain an important sector for the U.S. economy and to be well-represented in the municipal bond market. **CW**

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State Highway User Tax Bonds Maintain High Credit Quality Despite Higher Gas Prices

Overview

- Despite high U.S. gas prices that could curb usage, the general credit quality of highway user tax-secured bonds is not likely to deteriorate.
- These bonds enjoy diverse revenue streams, high debt service coverage, and strong legal protections.
- Inflation-adjusted gas prices are not significantly higher than in previous spikes, and moves to more fuel-efficient vehicles are not likely to decrease demand much in the near term.

The historically high fuel prices in the U.S. these days have caught many people's attention, and not just SUV drivers. In fact, the U.S. Energy Information Administration reported that the average national retail gasoline price on April 2 was \$3.94 a gallon, an all-time high and 6.9% higher than a year earlier. Holders of state highway user tax bonds may wonder whether rising prices will affect the credit quality of their bonds, which gas tax revenues support. Because states generally tax fuel on a per-gallon basis, falling demand could lower revenues. Demand could also fall if more people switch to fuel-efficient, hybrid, or electric vehicles. On top of that, new federal fuel efficiency standards for cars could also lower gas usage.

Despite all of these real or potential dampers on gas tax revenue, Standard & Poor's Ratings Services believes that state highway user revenue fund (HURF) bonds continue to enjoy relative credit stability. Motor fuel taxes, vehicle registration fees, license fees, and other transportation-related revenue secure HURF bonds. They generally have debt service coverage we consider high, and strong coverage requirements in order to issue any additional debt. State-issued HURF bonds, in particular, also benefit from broad, statewide economies that generate the pledged taxes. Although not covered

in this report, to the extent locally issued HURF bonds rely on a distributed portion of statewide HURF revenues, they would similarly benefit. As a result, these bonds have relatively high ratings. Of the state highway user tax-secured bonds we rate—\$39.2 billion that 24 states issued under 34 separate lien structures—we rate 11 liens 'AAA' while only three fall in the 'A' category. All but two ratings carry stable outlooks, and the negative outlooks in those cases stem from recent state reallocations of tax revenue to non-pledged uses rather than from the level of tax revenue before reallocation.

Table 1 | Selected State Highway User Tax Revenue Bonds

Issuer	Revenue bond rating	Outlook	Debt outstanding (mil. \$)	Additional bonds test (x)	Fiscal year 2011 MADS coverage	% change in pledged revenues FYs 2008-2011	Population (000s)	Pledged revenues	Final maturity	Debt service reserve
Arizona Transportation Board										
Senior lien	AAA	Negative	969	4.00	5.13	(22.6)	6,483	M, R, L	2037	No
Subordinate lien	AA+	Negative	719	3.00	3.36	(22.6)	6,483	M, R, L	2036	No
Arkansas Development Finance Authority (drivers license fees)										
	A	Stable	11	1.33	2.21	2.1	2,938	L	2018	Yes
Colorado Department of Transportation TRANS										
	AA	Stable	798	2.00	5.54	(3.9)	5,117	M, F, R	2016	No
Connecticut special tax obligation bonds										
Senior	AA	Stable	2,798	2.00	2.91	7.4	3,581	M, R, L	2032	Yes
Junior	AA	Stable	507	2.00	2.54	7.4	3,581	M, R, L	2016	Yes
Delaware Transportation Authority										
	AA+	Stable	1,070	2.00	3.02	(1.4)	907	M, R, L, T	2030	Yes
Hawaii Department of Transportation										
Senior	AA+	Stable	437	2.00	4.16	(7.0)	1,375	M, R	2032	One-half MADS
Kansas Department of Transportation										
	AAA	Stable	1,784	3.00	3.98	(0.4)	2,871	M, R, L, S	2035	No
Kentucky Turnpike Authority										
	AA+	Stable	1,557	2.00	3.25	1.7	4,346	M, R, L	2032	No
Louisiana gas and fuel tax										
Senior	AA	Stable	2,393	2.00	3.74	1.2	4,575	M	2041	No
Junior	AA	Stable	394	2.00	2.68	1.2	4,575	M	2045	No
Maryland Department of Transportation										
	AAA	Stable	1,562	2.00	6.25	14.1	5,773	M, R, L	2017	No
Maine Municipal Bond Bank gas tax										
	AA	Stable	230	2.00	1.9	4.0	1,300	M, R	2026	One-half MADS
Massachusetts special obligation gas tax										
Special obligation gas tax	AAA	Stable	377	100.00	3.19	(2.6)	6,588	M	2023	Yes
Accelerated bridge program	AAA	Stable	576	4.00	21.41	8.1	6,588	M, R, L	2040	No
Michigan trunk line fund*										
	AA+	Stable	1,316	2.00	4.27	(12.8)	9,876	M, R, L	2036	No

We also believe that even a moderate further increase in fuel prices is unlikely to significantly affect HURF credit quality. Fuel consumption appears relatively inelastic to price changes in the short run, and in the next two years, the U.S. Energy Information Administration is forecasting relative price stability on an average annual basis in any case.

State Highway Revenue Bonds Have High Debt Service Coverage

Most state highway user tax revenue bonds enjoy debt service coverage we consider high (see table 1). The median cov-

erage of maximum annual debt service (MADS) among the 34 state lien structures is 3.3 times (x). States have also generally locked in their high coverage of MADS with strong additional bonds tests. These legal covenants prohibit additional debt issuance unless issuers can demonstrate a minimum level of MADS coverage by recent historical pledged revenues. Of our rated state issued HURF bonds, the median additional bonds test coverage multiple required for new debt issuance is strong in our view, at 2x MADS. At the same time, many states typically do not issue bonds down to that coverage level,

Table 1 | Selected State Highway User Tax Revenue Bonds (continued)

Issuer	Revenue bond rating	Outlook	Debt outstanding (mil \$)	Additional bonds test (x)	Fiscal year 2011 MADS coverage	% change in pledged revenues FYs 2008-2011	Population (000s)	Pledged revenues	Final maturity	Debt service reserve
Missouri Highway and Transportation Commission										
Senior lien	AAA	Stable	557	100.00	8.37	(11.9)	6,011	M, R, S	2023	No
First lien	AAA	Stable	881	4.00	5.50	(8.5)	6,011	M, R, S	2026	No
Second lien	AAA		510	3.00	3.37	(8.5)			2027	No
Third lien	AA+ (SPUR)	Stable	359	2.00	2.96	(8.5)	6,011	M, R, S	2029	No
Nevada	AA+	Stable	561	2.00	3.29	(9.9)	2,723	M, F	2025	No
New Mexico State Transportation Commission										
Senior lien§	AA+	Stable	1,048	3.50	5.21	N.A.	2,082	M, R, L, F	2025	No
Subordinate lien§	AA	Stable	831	3.00	3.42	N.A.	2,082	M, R, L, F	2022	Yes
New York State Thruway Authority										
Highway and bridge trust fund	AA	Stable	7,115	2.00	2.23	5.5	19,465	M, R	2032	No
Ohio highway capital improvement bonds	AAA	Stable	768	0	19.2	2.3	11,545	M, R, L	2024	No
Oregon Department of Transportation										
Senior§	AAA	Stable	1,356	3.00	4.2	N.A.	3,872	M, R, L	2033	No
Junior§	AA+	Stable	844	2.00	3.3	N.A.	3,872	M, R, L	2034	No
Pennsylvania Turnpike Commission										
Senior lien oil franchise tax	AA	Stable	669	2.00	2.23	1.4	12,743	M	2039	No
Junior lien oil franchise tax	A+	Stable	132	1.15	1.18	1.4	12,743	M	2037	One-half MADS
Rhode Island Economic Development Corp.	A+	Stable One-half	74	1.25	1.20	1.0	1,051	M	2027	One-half MADS
Texas Transportation Commission (first tier)	AAA	Stable	4,078	0.0	15.7	(9.5)	25,675	M, R, F	2030	No
Wisconsin petroleum fee	AA	Stable	117	2.00	2.21	(3.7)	5,712	M	2017	No
Wisconsin Department of Transportation	AA+	Stable	1,813	2.25	2.80	12.1	5,712	R	2032	13% of MADS

*Michigan is on a Sept. 30 fiscal year; fiscal 2011 pledged revenues are state estimate. §Coverage uses fiscal 2010 net revenues; fiscal 2011 revenues not available. Note: Federal Build America Bond interest subsidies are not included. F—Federal revenues. HURF—Highway User Revenue Fund. L—License permit fees. M—Motor vehicle fuel tax. MADS—Maximum annual debt service. N.A.—Not available. R—Registration taxes. S—Sales taxes. T—Tolls.

even though they could, so as to preserve excess revenues for funding state department of transportation operations, and to continue to fund ongoing pay-as-you-go road maintenance, as well as smaller capital programs. We believe that historically demonstrated maintenance of higher coverage than allowed in the additional bonds test is a positive credit factor.

Revenue Sources Are More Diverse Than They Initially Appear

Beyond fuel taxes, pledged revenues also often include other diverse transportation related tax sources not directly dependent on fuel consumption. These might include motor vehicle registration fees, license fees, and fees derived from other non-highway transportation activities. For example, New York State dedicated

highway and bridge trust fund appropriations, which secure certain New York State Thruway revenue bonds, received 40% of its fiscal 2011 tax revenue from motor vehicle fees and only 49% from combined motor fuel taxes and petroleum business taxes, with the rest from other taxes. Revenue sources, such as license fees, remain relatively stable on an annual basis, in our opinion. Nonfuel derived pledged revenues, in some cases, can constitute close to half or more of pledged revenues. A mix of tax revenues can serve as a source of overall stability, in our view, even when fuel consumption fluctuates. Furthermore, the large, statewide economies that support pledged taxes are often broad and diverse (see table 1 for state population figures). The median three-year change in pledged revenues for the Standard & Poor’s rated state HURF

Table 2 | National Motor Fuel Use Statistics

Year	Net motor vehicle fuel taxed (000s of gallons)	Annual % change	Annual average motor gasoline regular retail price (nominal \$, including taxes)	Annual average motor gasoline regular retail price (March 2012 inflation adjusted \$)	Corporate average fuel economy (CAFE): combined fleet cars and trucks mpg (model year)	Average mpg (all vehicles on the road)	Average mpg (passenger cars only)
1970	92,966,742	4.5	N/A	N/A	N/A	12.1	N/A
1971	98,149,985	5.6	N/A	N/A	N/A	12.2	N/A
1972	105,652,586	7.6	N/A	N/A	N/A	12.1	N/A
1973	111,021,020	5.1	N/A	N/A	N/A	11.9	13.4
1974	106,746,129	(3.9)	N/A	N/A	N/A	12.1	13.6
1975	109,450,104	2.5	N/A	N/A	N/A	12.2	14.0
1976	116,299,524	6.3	0.59	2.38	N/A	12.2	13.8
1977	120,313,712	3.5	0.62	2.33	N/A	12.3	14.1
1978	125,585,504	4.4	0.63	2.20	19.9	12.4	14.3
1979	122,653,146	(2.3)	0.86	2.70	20.1	12.5	14.6
1980	115,537,614	(5.8)	1.25	3.45	23.1	13.3	16.0
1981	114,881,785	(0.6)	1.38	3.46	24.6	13.6	16.5
1982	114,149,333	(0.6)	1.26	2.97	25.1	14.1	16.9
1983	116,776,658	2.3	1.21	2.76	24.8	14.2	17.1
1984	120,482,423	3.2	1.18	2.58	25.0	14.5	17.4
1985	123,148,953	2.2	1.17	2.47	25.4	14.6	17.5
1986	126,678,636	2.9	0.88	1.84	25.9	14.7	17.4
1987	129,479,868	2.2	0.91	1.83	26.2	15.1	18.0
1988	131,946,807	1.9	0.91	1.75	26.0	15.6	18.8
1989	133,731,191	1.4	0.99	1.82	25.6	15.9	19.0
1990	132,918,073	(0.6)	1.13	1.97	25.4	16.4	20.2
1991	130,691,588	(1.7)	1.10	1.85	25.6	16.9	21.1
1992	134,919,914	3.2	1.09	1.77	25.1	16.9	21.0

bonds between fiscals 2008 and 2011 was an increase of 0.3%, and the largest drop was 22.6%, which was partially due to a reallocation of tax revenue deposited to that state's pledged fund.

Fuel Demand Is Relatively Inelastic In The Short Run

Although a mix of fuel and non-fuel tax revenues can be a stabilizing factor, in our opinion, fuel consumption itself has historically shown only modest fluctuations.

In fact, even during periods of recession or "crisis" going back many years, fuel consumption fell relatively modestly, in our view. The 1974 fuel crisis only produced a one year, 3.9% drop in the gallons of motor fuel taxed on a 50-state combined basis (see table 2). The next drop was a 9.1% cumulative peak-to-trough drop in state motor fuel gallons taxed between 1978 and 1982, followed by a minor, 2.3% cumulative two-year drop during the 1991 recession. No more

Although a mix of fuel and non-fuel tax revenues can be a stabilizing factor fuel consumption itself has historically shown only modest fluctuations.

Table 2 | National Motor Fuel Use Statistics (continued)

Year	Net motor vehicle fuel taxed (000s of gallons)	Annual % change	Annual average motor gasoline regular retail price (nominal \$, including taxes)	Annual average motor gasoline regular retail price (March 2012 inflation adjusted \$)	Corporate average fuel economy (CAFE): combined fleet cars and trucks mpg (model year)	Average mpg (all vehicles on the road)	Average mpg (passenger cars only)
1993	138,229,316	2.5	1.07	1.69	25.2	16.7	20.5
1994	141,917,536	2.7	1.08	1.66	24.7	16.7	20.7
1995	144,521,600	1.8	1.11	1.66	24.9	16.8	21.1
1996	147,450,907	2.0	1.20	1.75	24.9	16.9	21.2
1997	151,760,039	2.9	1.20	1.70	24.6	17.0	21.5
1998	155,911,776	2.7	1.03	1.44	24.7	16.9	21.6
1999	160,863,343	3.2	1.14	1.56	24.5	16.7	21.4
2000	162,594,612	1.1	1.49	1.97	24.8	16.9	21.9
2001	164,049,396	0.9	1.43	1.84	24.5	17.1	22.1
2002	169,381,186	3.3	1.34	1.70	24.7	16.9	22.0
2003	170,897,477	0.9	1.56	1.93	25.1	17.0	22.2
2004	174,649,326	2.2	1.85	2.24	24.6	17.1	22.5
2005	175,301,159	0.4	2.27	2.65	25.4	17.2	22.1
2006	176,693,937	0.8	2.58	2.92	25.8	17.2	22.5
2007	177,394,307	0.4	2.81	3.09	26.6	17.2	22.5
2008	171,229,244	(3.5)	3.26	3.45	27.1	17.4	22.6
2009	168,550,982	(1.6)	2.35	2.50	29.0	N/A	N/A
2010	170,776,438	1.3	2.78	2.91	29.3	N/A	N/A
2011	N/A	N/A	3.53	3.58	29.6	N/A	N/A
2012e	N/A	N/A	3.79	3.78§	N/A	N/A	N/A

*In 2011, the CAFE standard changed to a new formula; 2012 is the value applicable under the "unreformed" prior standard. §Price differs from nominal because it uses the March 2012 CPI Index. MPG—Miles per gallon. N/A—Not applicable. e—Estimated.

Sources: Federal Highway Administration highway statistics series, U.S. Energy Information Administration, and National Highway Traffic Safety Administration.

drops occurred until the most recent recession, which saw a peak (2007) to trough (2009) decrease of 5%. This is a relatively minor drop in our view, which was followed by a 1.3% increase in 2010 (2011 figures for combined state gas consumption taxed will not be available until later this year). Using a different data set, calendar 2011 saw a 2.9% drop from 2010 in national finished gasoline products supplied while January 2012 was 2.7% below January 2011.

However, these fluctuations in consumption look relatively small in relation to the 3.3x median debt service coverage level of rated state HURF bonds

based on fiscal 2011 pledged revenue (see table 1 for individual coverage levels).

Most states' pledged fuel tax revenue will vary by the number of gallons bought on a per-gallon basis and do not consist of a sales tax on the value of the gas sold (with exceptions in some states). As such, fuel consumption trends are of interest when predicting future debt service coverage levels. At the same time, having a per-gallon tax has provided some stability in pledged revenues during recent fluctuations of fuel prices at the pump.

However, fuel prices have not risen as much in real terms as it might seem compared with gas station prices. In 2012 infla-

Table 3 | State Motor Fuel Volume Taxed

	Gallons of all motor fuels taxed (000s) 2010	One gallon % change (2009 to 2010)	National peak to trough years gallon % change (2007 to 2009)	—Cents per gallon as of Jan. 1, 2012—		
				State diesel excise tax rate	State gasoline excise tax rate	State total effective gasoline tax rate
Alabama	3,325,590	3.1	(6.9)	19.0	16.0	20.9
Alaska	453,361	(7.6)	6.2	8.0	8.0	8.0
Arizona	3,350,071	1.5	(10.8)	18.0	18.0	19.0
Arkansas	1,925,588	1.3	2.5	22.5	21.5	21.8
California*	17,464,647	0.5	(7.4)	13.0	35.7	48.6
Colorado	2,582,036	1.9	(5.5)	20.5	22.0	22.0
Connecticut*	1,736,634	(1.1)	(4.8)	46.2	25.0	48.6
Delaware*	494,724	0.1	(5.4)	22.0	23.0	23.0
District of Columbia	108,081	(5.2)	(12.6)	23.5	23.5	23.5
Florida*	9,309,603	(1)	(6.2)	4.0	4.0	35.0
Georgia*	6,146,423	1.1	(6.4)	7.5	7.5	29.4
Hawaii	467,510	(5.7)	(5.2)	17.0	17.0	47.1
Idaho	931,117	5.3	(6.6)	25.0	25.0	25.0
Illinois*	6,195,983	(0.4)	(5.9)	21.5	19.0	38.9
Indiana*	4,281,695	3.3	(8.2)	16.0	18.0	38.9
Iowa	2,217,886	3.2	(2.6)	22.5	21.0	22.0
Kansas	1,662,984	(3.5)	(2.7)	26.0	24.0	25.0
Kentucky*	3,002,332	1.6	(4.8)	18.1	26.4	27.8
Louisiana	3,002,991	1.7	(0.6)	20.0	20.0	20.0
Maine	849,477	1	(3.0)	31.2	30.0	31.5
Maryland	3,197,662	(5.3)	2.6	24.3	23.5	23.5
Massachusetts	3,172,614	0.8	(4.5)	21.0	21.0	23.5
Michigan*	5,309,856	0.5	(4.8)	15.0	19.0	39.4
Minnesota	3,091,619	1.8	(6.1)	27.5	28.0	28.1
Mississippi	2,188,378	4.3	(5.5)	18.0	18.0	18.8
Missouri	4,145,462	1.3	(4.4)	17.0	17.0	17.3
Montana	737,290	1.7	(4.1)	27.8	27.0	27.8

tion-adjusted dollars, the average annual retail regular gasoline price during a previous yearly spike in 1981 was \$3.46 per gallon, not that far from the \$3.45 average inflation-adjusted price in 2008, and near the \$3.58 average in February 2012. The U.S. Energy Information Administration's

(EIA) March forecast is for a 2012 average annual regular gas price of \$3.79 although it projects a spike to near \$4.00 in May. The EIA forecasts an average price of \$3.72 in 2013. Despite current record prices in both real and nominal terms, looking at prior peak prices, it's possible to see why long-

[The EIA's] March forecast is for a 2012 average annual regular gas price of \$3.79 although it projects a spike to near \$4.00 in May.

Table 3 | State Motor Fuel Volume Taxed (continued)

	Gallons of all motor fuels taxed (000s) 2010	One gallon % change (2009 to 2010)	National peak to trough years gallon % change (2007 to 2009)	—Cents per gallon as of Jan. 1, 2012—		
				State diesel excise tax rate	State gasoline excise tax rate	State total effective gasoline tax rate
Nebraska*	1,269,400	5.4	(4.6)	26.7	26.7	27.6
Nevada	1,392,836	(1)	(9.4)	27.0	23.0	33.1
New Hampshire	802,640	0.1	(2.8)	18.0	18.0	19.6
New Jersey*	4,982,036	(1)	(6.1)	13.5	10.5	14.5
New Mexico	1,324,465	(1.8)	(5.8)	21.0	17.0	18.9
New York*	6,742,652	2.5	(2.3)	8.0	8.1	49.0
North Carolina*	5,257,362	3.5	(5.8)	38.9	38.9	39.2
North Dakota	618,366	10.6	6.3	23.0	23.0	23.0
Ohio	6,409,280	3.1	(5.9)	28.0	28.0	28.0
Oklahoma	2,690,581	5.1	(5.3)	13.0	16.0	17.0
Oregon	2,048,396	0.5	(4.1)	30.0	30.0	31.0
Pennsylvania	6,346,965	1.5	(4.2)	12.0	12.0	32.3
Rhode Island	447,184	2.3	(3.8)	32.0	32.0	33.0
South Carolina	3,352,693	(0.2)	3.5	16.0	16.0	16.8
South Dakota	643,160	1.6	1.6	22.0	22.0	24.0
Tennessee	3,995,932	2.9	(6.2)	18.0	20.0	21.4
Texas	16,078,813	2.6	(3.1)	20.0	20.0	20.0
Utah	1,422,849	(1.2)	(6.9)	24.5	24.5	24.5
Vermont	388,998	0.8	(5.9)	25.0	19.0	26.1
Virginia	4,933,587	3.5	(6.5)	17.5	17.5	19.8
Washington	3,230,354	0.2	(4.6)	37.5	37.5	37.5
West Virginia	1,142,439	3.8	(2.0)	20.4	20.5	33.4
Wisconsin*	3,229,624	3.6	(4.8)	30.9	30.9	32.9
Wyoming	674,212	2.9	(8.7)	13.0	13.0	14.0
U.S. total	170,776,438	1.3	(4.9)	average 19.0	average 20.9	average 30.4

*Total tax rate includes the effective per gallon tax rate for variable tax components, including sales taxes, wholesale tax, gross receipts tax, or other variable-rate taxes. Note: Does not include federal excise taxes of \$0.184 per gallon for gasoline and \$0.244 for diesel fuel. Sources: Federal Highway Administration, Highway Statistics; American Petroleum Institute for tax rates.

term consumption could still remain somewhat stable (see table 2), although prices are above the \$2.50 inflation-adjusted average price in 2009. As of April 2, 2012, the EIA reported an average national weekly retail regular gasoline price of \$3.94 per gallon and \$4.00 per gallon as an average for all grades of gasoline.

The Federal Highway Administration's January 2012 traffic volume trends survey estimates total vehicle miles traveled on all roads and streets increased 1.6% for January 2012 compared to January 2011 although January 2012 was 3.7% below January 2008. When combined with the possible drop in 2011 gas consumption, this suggests some shift may be occurring to more fuel efficient vehicles.

While long-run fuel consumption may become more elastic as consumers switch to energy-saving vehicles, in the short run consumers cannot easily trade in their gas guzzlers for new hybrids. Recent reports indicate that consumers are holding on to their cars longer than ever. Polk Research has reported that the average age of combined car and light trucks on the road rose to 10.8 years in 2011, compared with 8.4 years in 1995. And it is not clear that all con-

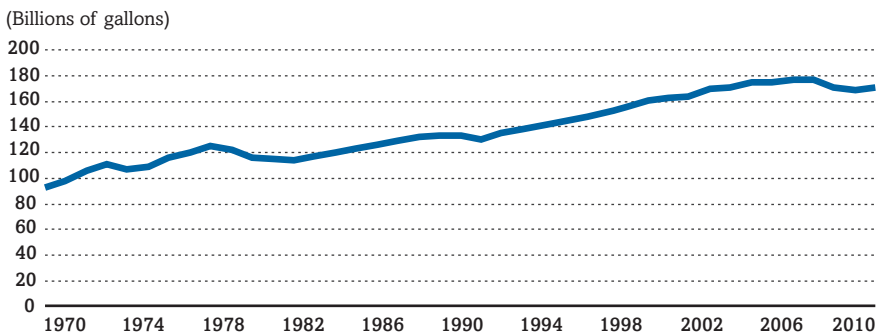
sumers necessarily even want to move to more efficient vehicles when examining average vehicle miles per gallon (mpg). Although federal data have a time lag in reporting average miles per gallon for all vehicles on the road, in 2008 all vehicles combined had average fuel economy of 17.4 mpg (see table 2), and passenger cars had 22.6 mpg. This is not much different than the 16.9 mpg for all vehicles in 2000, and the 21.9 mpg in that year for passenger vehicles. The recent rise in car sales may increase overall vehicle efficiency, but if so, the effect would likely phase in gradually. The effect on overall fuel consumption is harder to predict since drivers may use efficiency savings to drive more miles, as suggested by the Federal Highway Administration statistics.

Some States Periodically Increase Pledged Tax Rates

While a fixed lien on a specific tax, or portion of a tax, secures some highway user tax revenue bonds, many states instead pledge overall transportation-related tax revenue distributed to their state transportation fund. As such, states have often periodically raised pledged tax rates as needed so as not to slow

Many states pledge overall transportation-related tax revenue distributed to their state transportation fund.

Net Motor Vehicle Fuel Taxed



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necessary transportation projects or jeopardize bond security when revenues fall short for overall state transportation projects. To the extent that a state's fuel tax rate is low compared with neighboring states, a state may have more leeway to raise tax rates if necessary (*see table 3*). Table 3 lists comparative overall state gas tax rates (not specific pledged taxes) of the various states, as calculated by the American Petroleum Institute.

CAFE Standards May Rise

One factor that could lower fuel consumption is a potential government mandate for improved vehicle fuel efficiency. The government does not mandate that individuals buy cars of any particular fuel efficiency. However, it fines carmakers for exceeding Federal Corporate Average Fuel Economy (CAFE) standards. From 1990 through 2010, the standard for passenger cars was 27.5 mpg, less than carmakers' average actual CAFE calculated results of 29.3 mpg in 2010. In 2011, the National Highway Traffic Safety Administration, a U.S. Transportation Department agency, changed its CAFE standard to a complex formula based on car size or "footprint." That generated a passenger car CAFE standard in 2011 of 30.1 mpg and 24.2 mpg for light trucks. While additional new standards have not yet been finalized, the government has proposed raising carmakers' fleet average CAFE standard to a footprint standard of 56 mpg for passenger cars by 2025 and 40.3 for light trucks, a significant increase.

State Trends And Credit Quality Vary

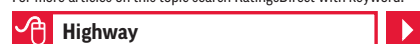
Regions and states vary in their fuel consumption (*see table 3*), as well as in the sort of taxes they pledge to the bonds and the strength of their additional bonds tests. When we assign ratings, we look at the unique factors of that particular issuer, despite some broad national trends. These individual characteristics go beyond just changes in tax revenue to encompass factors such as the likelihood of additional bonding and willingness to increase tax rates for pledged funds, if necessary. During the recent recession, some states found ways to transfer trans-

portation funds to their general fund for budget relief or to divert revenues flowing into their pledged fund. The consequence in some cases reduced pledged revenue, although in no case enough for us to change a rating. At the same time, during the recession, some governors wanted to keep job-producing, "shovel ready" highway projects going. This served as a potential political counterwind, which kept highway funds flowing into state transportation funds.

Credit Quality Will Not Likely Make A U-Turn

Actual trends in fuel consumption are hard to predict, and in some ways seem to depend more on economic cycles than on gas prices. However, while fuel prices may be stabilizing, they are still currently at historical highs, and they may go higher. At the same time, government mandates for fuel efficiency could lower consumption and tax revenue, assuming state governments do not raise tax rates to compensate. With uncertainty, despite historical stability, the high debt service coverage and strong legal protections that state HURF bonds have, as well as significant revenue pledges from non-fuel derived sources, give credit quality some wiggle room. Because the declines in revenue sources have affected these bonds less than they have state general fund revenues—which typically depend more on sales and income taxes—the gas tax-backed sector is stable for now, in our view. Overall, the magnitude of potential declines in future pledged revenue that we see likely from higher gas prices is, in our view, more than offset by generally high current debt service coverage although, as the economy picks up steam, it may be more likely that pledged revenues will actually grow in the next few years. **cw**

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Buying Time

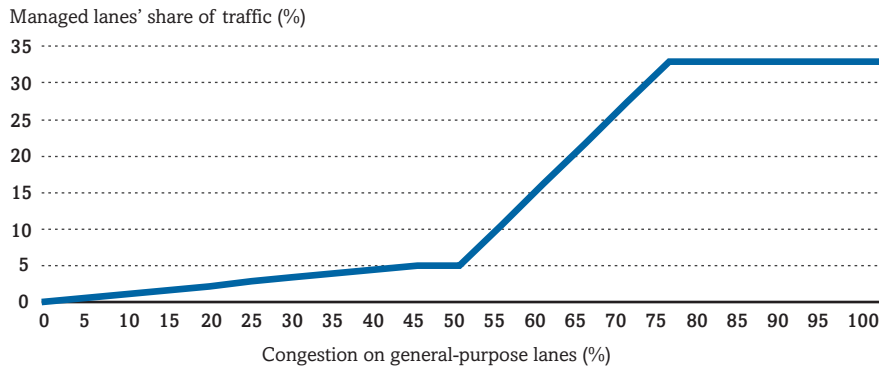
Credit Considerations In Analyzing U.S. Managed-Lane Facilities

Overview

- Managed lanes are built to relieve congestion on an existing highway and are typically in the median alongside the free, general-purpose lanes with which they compete.
- Because managed-lane projects depend on subtle, site-specific factors to generate demand, one project's success will not necessarily indicate how successful other similar projects will be.
- An important credit consideration is whether the general-purpose lanes will be reliably congested during peak morning and afternoon rush hours, in which case peak tolls could increase dramatically.
- Managed lanes' long-term traffic growth is often higher than that of the corridor as a whole.

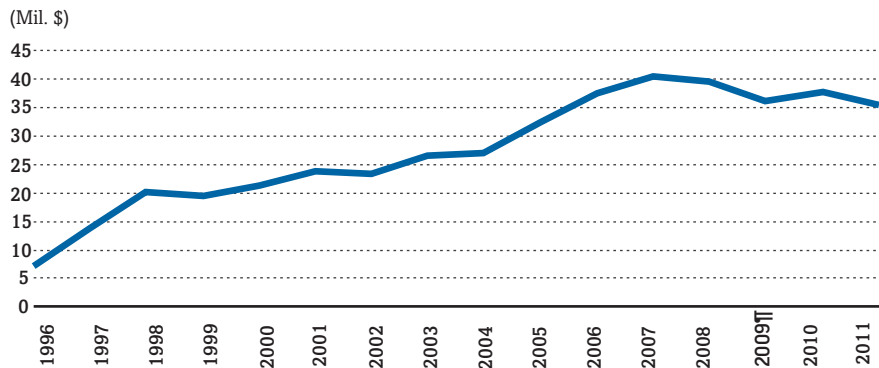
What bothers U.S. drivers more than coming to a complete stop in freeway traffic? Probably not much. But it happens often to urban commuters, even though overall traffic (measured by U.S. vehicle-miles traveled) hasn't grown since 2007 (*see note 1*). And the number of peak commuting hours each day in very large U.S. cities has fallen to about 6 hours on average in 2010 from about 6.9 hours in 2007 (*see note 2*). Standard & Poor's Ratings Services expects overall U.S. traffic to resume growth now that the economy is recovering, although the rate of growth may be lower than historical rates.

Chart 1 | Relationship Of A Hypothetical Managed Lane's Share Of Total Traffic And Corridor Congestion



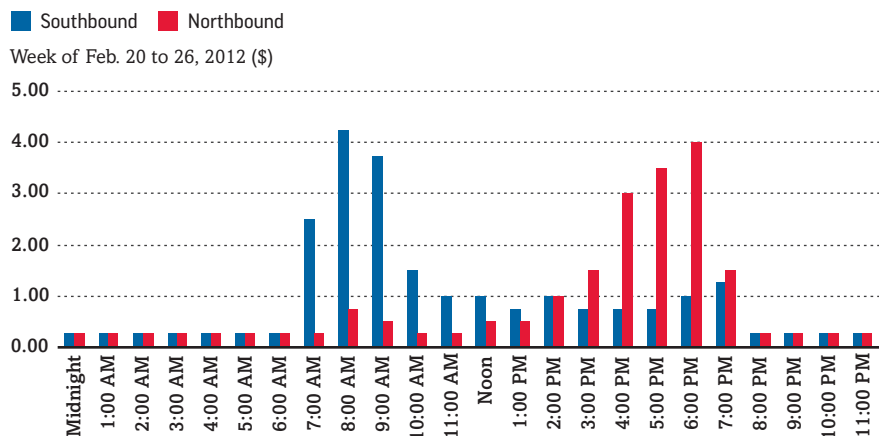
Source: Standard & Poor's, based on 91 Express Lanes research by Stantec.
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Chart 2 | 91 Express Lanes' Annual Toll Revenue, 1996 To 2011*



*Figures for 1996 to 2001 are as of calendar year-end; figures for 2002 to 2011 are as of fiscal year-end June 30.
†Mid-2009 (i.e., fiscal 2010), eastbound auxiliary lane was under construction. Auxiliary lane opened November 2010.
Source: Orange County Transportation Authority.
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Chart 3 | Typical Weekday Toll Rates On I-95 Express Lanes



Source: Florida Department of Transportation.
© Standard & Poor's 2012.

Many urban U.S. communities are facing worsening gridlock as well as limited funding for new freeway lanes. So, local governments are increasingly turning to managed-lane facilities to relieve not only traffic congestion, but also drivers' anxieties—and to raise revenue.

Managed lanes are built to relieve congestion on an existing highway. They are typically located in the median alongside the free, general-purpose lanes with which they compete. Often, they are repurposed high-occupancy vehicle (HOV) lanes. There are frequently two managed lanes in each direction, although smaller projects may have only one lane; several projects under construction will have three in places. The toll on managed lanes is set to limit their traffic volume and maintain speed (often 50 mph), especially during peak rush hours when traffic on the general-purpose lanes is heaviest. Existing managed-lane facilities prohibit trucks and allow some or all HOVs to enter at reduced rates or for free. For this reason, they are sometimes called high-occupancy/toll lanes, or "HOT" lanes. One facility in Florida allows hybrid vehicles to enter for free. Although not a permanent solution to traffic congestion, managed lanes are much more effective at doing so than adding new free lanes, which would quickly become congested again.

Key Credit Considerations

Managed lanes are similar to traditional toll roads in some respects, but their unique features raise additional credit issues. The key credit risk for managed lanes concerns the growth of their traffic and revenue during their operating period, after construction is complete. But, managed-lane projects have an important credit strength: They are built on roadways that are already congested, at least during peak hours. If congestion is consistently high, peak traffic volume will be fairly predictable, resulting in strong cash flow from high peak toll rates that increase as traffic grows. However, if congestion is only moderate, especially in the project's early years, cash flow can be erratic, making revenue

forecasts difficult. In addition, a relatively small change in traffic volume on the free general-purpose lanes can cause a much larger corresponding swing in demand for the managed lanes. An important credit consideration is how congested that traffic corridor is during peak rush-hour periods, when they generate most of their revenue.

Fundamental to our credit analysis is cash flow in relation to fixed obligations, which include debt-service payments, operating expenses, and necessary capital expenses. New managed-lane projects face start-up risk, or the risk that revenue will not reflect forecasted traffic levels in the early years. Such projects often have a debt burden that requires many years to amortize, so assumptions regarding long-term revenue growth are key to credit quality and go hand in hand with assumptions about long-term traffic growth in the corridor. In addition, changes in traffic volume are often caused by factors outside of the project's control, such as economic recessions or gasoline prices.

Economic cycles can also result in cash flow volatility, and we believe managed-lane projects have more volatile cash flow than traditional toll roads, so liquidity is another important credit consideration. The traffic and revenue of managed lanes depend on the traffic of the general-purpose lanes, so our analysis of operating period risk begins with the typical toll-road traffic and revenue forecasting considerations described in our toll-road criteria (see *"Public Finance Criteria: Toll Road And Bridge Revenue Bonds," published June 13, 2007, on RatingsDirect, on the Global Credit Portal*). As with many toll roads, managed lanes' operating and capital expenses are less of a credit risk than their traffic and revenue trends because expenses are usually more predictable.

Our analysis also covers construction risk, or the contractor's ability to meet schedules and budgets while minimizing disruptions to existing traffic (see *"Project Finance Construction And Operations Counterparty Methodology," published Dec. 20, 2011*). Managed-lane construction often uses proven road-building tech-

niques, so construction is not typically a primary credit risk.

Not All Managed-Lane Projects Are Created Equal

Managed-lane projects depend on subtle, site-specific factors to generate demand, and these factors make them difficult to compare with other such projects. As a result, one project's success will not necessarily provide an indication of how well other projects will do. The table shows two large existing U.S. managed-lane projects and three that will open in about 2012 to 2015. The projects under construction are complex, with multiple entry and exit locations in dense urban environments.

One important difference among managed-lane projects is whether they are operated primarily to generate revenue or simply to relieve congestion. This distinction affects such issues as road improvements and toll policy. For example, improvements to the general-purpose lanes will likely increase total corridor volume, but once construction is complete, the new capacity will reduce congestion and make the managed lanes less attractive until traffic in the general-purpose lanes increases again.

Because managed lanes promise free-flowing traffic, they use all-electronic tolling, or open-road tolling, which uses transponders instead of cash and does not require the driver to stop to pay. Tolls are often set in real time, or dynamically, according to an algorithm that balances tolls and traffic flow. Drivers are informed of their toll before they must decide whether to enter the managed lanes, and their toll does not change, even if subsequent drivers pay a higher toll. The 95 Express project along I-95 between Fort Lauderdale and Miami, run by the Florida Department of Transportation, is a good example of dynamic tolling. It is managed primarily to maximize traffic throughput in the corridor, as is the Orange County Transportation Authority's 91 Express Lanes (A[SPUR]/Stable) project, along state route (SR) 91 in Orange County, Calif.

On the other hand, public-private partnership (PPP) concessions are generally managed more to generate revenue than

to relieve total corridor congestion. Concession agreements typically place an upper limit on tolls, but this limit is often high.

Expect Congestion Ahead: Forecasting Traffic Volumes Of Managed Lanes

A managed-lane project typically generates the most revenue during the peak morning and afternoon rush hours, so an important credit consideration is whether the general-purpose lanes will be reliably congested then, in which case peak tolls could increase dramatically. However, the point at which traffic becomes congested can be difficult to predict. As traffic increases, drivers gradually reduce the distance between themselves and the car in front of them. Speeds can collapse suddenly when drivers brake as highway lanes approach their capacity of roughly 2,000 vehicles per lane per hour, with adjustments for trucks and buses. Curves or merging lanes can reduce a lane's capacity.

Managed-lane demand is low when congestion on the general-purpose lanes is expected to be low. However, as drivers begin to expect more congestion, demand suddenly rises steeply (see *chart 1 for a simplified illustration of a hypothetical managed lane's market share of total corridor traffic*). The tipping point (typically when a general-purpose lane's volume reaches 50% to 90% of its capacity) and slope of the demand curve depends on the toll rate of the managed lanes and the design of the general-purpose lanes, among other factors. Projects that don't yet have consistently high congestion and that operate near this steep section of the curve may have erratic revenue because a small change in congestion can create a large corresponding increase or decrease in managed-lane traffic. Above the tipping point, most of the additional traffic in the corridor will move to the managed lanes, allowing the facility to raise its tolls. As the managed lanes reach their capacity, the curve becomes flatter. Projects that have consistently high congestion will operate at this optimum point on the curve and will be able to raise tolls significantly, thereby

generating strong, stable revenue during peak hours. When rating new facilities, we consider general-purpose lanes' traffic volume and managed-lanes' capture rates.

The 91 Express Lanes in Orange County provide an example of how erratic cash flow can be for a managed-lane project. When the toll is about 55 cents per mile (a fairly typical toll) and the SR-91 corridor is at full capacity, toll-paying traffic on the eastbound lanes typically represents about 25% of total corridor volume. But, if the corridor is only at 70% capacity, express lane traffic typically represents only about 10% of corridor volume. Westbound express lane volume and rates are lower because westbound general-purpose lane congestion is lower. The SR-91 corridor regularly reaches very high capacity during peak hours, so the Express Lanes capture a strong share of traffic. But the steep difference in traffic share at relatively similar congestion levels demonstrates how a project that does not have consistent congestion in its general-purpose lanes can be at risk for lower and more volatile cash flows as its congestion levels fluctuate.

Managed-lane projects have more pricing power during peak traffic periods, so most of its cash flow will be generated during those hours. In our analysis, we consider whether a

revenue forecast also assumes significant revenue from off-peak periods, which we consider less predictable. An important credit factor is whether the peak periods are concentrated into one or two hours or are spread over more of the day as drivers leave earlier or later to avoid rush hours. Peak spreading is a potential source of revenue growth because it extends peak hours, but we do not typically assume significant peak spreading in our base-case traffic forecasts.

A managed-lane project usually requires a number of years to complete its initial start-up growth, even if it is in a congested corridor. Adding the managed lanes' capacity to the corridor reduces congestion, and the general-purpose lanes are also often improved during construction, which also reduces congestion. For example, revenue on the 91 Express Lanes required two to three years of initial rapid growth after opening in December 1995 to reach a more stabilized level in 1998 (see chart 2).

The 95 Express project, in Florida, remains another strong start-up. Operations began in 2008 on its northbound lanes and in mid-January 2010 on its southbound lanes. Monthly revenue from February 2011 through September 2011 averaged about 16% over 2010 monthly levels. The adjusting of the tolling algorithm to achieve the optimum

toll rate for each level of congestion is an important part of the start-up period.

The rate of long-term traffic growth in a corridor is another important rating consideration, as most general-purpose lanes will likely become more congested over time if they are not expanded. We generally look at regional rates of economic and population growth as indicators of corridor traffic growth and consider competing roads. At moderate toll rates, the managed lanes will likely capture most additional traffic volume in a corridor over time if the general-purpose lanes are sufficiently congested. Because of managed lanes' smaller relative size, they will typically have a higher rate of traffic growth than the corridor as a whole.

The Value Of Certainty: Forecasting Cash Flow From Managed Lanes

Managed lanes generate most of their cash flow during peak hours from drivers paying high toll rates. For new facilities, we typically run stress tests on average toll rates based on the most comparable projects available. Toll rates on 95 Express reach nearly \$1.00 per mile during some peak hours, but the average peak-period toll on the managed lanes is about 30 cents to 40 cents per mile. Chart 3 shows typical weekday tolls on 95 Express for the entire 7-mile trip.

Five Large U.S. Managed-Lane Projects

	91 Express Lanes	95 Express Lanes	495 Express Lanes	IH-635 LBJ Express	North Tarrant Express
Rating	A(SPUR)/Stable	N.R.	N.R.	N.R.	N.R.
Ownership	Public	Public	P3	P3	P3
State	California	Florida	Virginia	Texas	Texas
Opening date	1995	2008 to 2010	2012 (projected)	2015 (projected)	2015 (projected)
Approx. length (miles)	10	7	14	13	13
HOV policy	HOV-3+ free or reduced	HOV-3+ free	HOV-3+ free	HOV-2+ free*	HOV-2+ free*
No. of managed lanes	4	4	4	4 to 6	4
No. of general-purpose lanes	8	7	8	8	6
Daily volume (000s), managed lanes	33	61	Not yet open	Not yet open	Not yet open
Daily volume (000s), general-purpose lanes	350 to 485	199	Not yet open	Not yet open	Not yet open
Annual revenue (mil. \$)	35.5	15.6	Not yet open	Not yet open	Not yet open

*In the two Texas projects, HOV-2+ vehicles pay a reduced fee, but the project concessionaire is reimbursed for those vehicles by the state. HOV—High-occupancy vehicle. N.R.—Not rated. P3—Public-private partnership. Source: Standard & Poor's.

Congestion is highest on the southbound side in the morning peak and on the northbound side in the afternoon peak.

Many drivers likely value managed lanes for their predictable traffic flow at least as much as for the time savings (*see note 3*). Because of the emotional effect of sitting in traffic, drivers can overestimate the amount of time they will save by using managed lanes, similar to the idea of loss aversion in behavioral economics. This theory refers to investors' tendencies to focus more on losses than on gains, such as when a driver dwells on losing a relatively small amount of time in general-purpose lane traffic rather than on how much money he is saving by not taking the managed lane. A driver's willingness to pay a toll is not only a function of wealth and income. Low-income drivers also are willing to pay high tolls because they often face more dire consequences for being late to work or daycare than higher-income drivers. Studies have shown that high- and low-income drivers may value their time more highly than middle-income drivers (*see note 4*).

A managed-lane project may have a different user base each day, consisting of the drivers most willing to pay that day. Estimates by 95 Express show that about one-third of its customers use the lanes two to four times per week. Even at non-peak hours, drivers who require certainty about traffic flow or prefer to avoid truck traffic on the general-purpose lanes will use the managed lanes.

Some managed-lane facilities, including the 91 Express Lanes, use preset tolls that may be adjusted several times per year, depending on congestion. Over the long term, the effect of this preset system is roughly similar to that of dynamic tolling.

If a managed-lane project has multiple entrances and exits, trip length can be an important factor in forecasting toll revenue. No such large managed-lane projects are open yet. But, we believe drivers who choose the managed lanes will generally remain in them until the end of their trips, rather than returning to the general-purpose lanes after a mile or two because of the uncertainty of where

congestion will occur in the general-purpose lanes.

Politics Matter Here, Too

As mentioned above, a managed-lane project's emphasis, whether on revenue generation or total corridor throughput, can be an important rating consideration. However, political decisions can also influence other aspects of a project and may affect credit quality, too. The long-term cash flow of a managed lane depends on the general-purpose lanes' remaining congested at peak hours for decades, so the question becomes whether allowing this is politically feasible. After a local government signs a PPP concession agreement, its choices for alleviating congestion are somewhat limited. In a typical managed-lane concession, the local government may build new general-purpose lanes, but it must compensate the private concessionaire for any loss of revenue that results from the new toll-free lanes. Making even small changes to general-purpose lanes can be important. Simply adding ramp meters, which are basically alternating red and green lights at entrance ramps, can significantly reduce congestion.

Similarly, the number of cars that drive for free or at reduced rates is an important policy decision. Carpools with two or more people (HOV-2+) are much more common than carpools with three or more people (HOV-3+). The IH-635 LBJ Express and North Tarrant Express managed-lane concessions in Texas will permit HOV-2+ carpools to enter at reduced rates or for free, but this credit risk is mitigated because the projects will collect payment for these vehicles from the state. The 95 Express permits HOV-3+ carpools and nearly all hybrid and zero-emission vehicles to drive for free or a 50% discount after registering. Only about 3,500 hybrid vehicles are currently registered, but the number will likely increase as such vehicles gain in popularity. If a managed-lane facility has strong demand and too many cars can enter for free, it may become congested despite high prices for other drivers.

The 91 Express Lanes were originally a PPP project with a non-compete

clause that has not been used in subsequent PPPs. The project was formerly owned by a private concessionaire that, in 1999, used a non-compete clause to prevent the California Dept. of Transportation from expanding the general-purpose lanes near entry and exit ramps to improve traffic safety, among other reasons. The problem was eventually resolved after another government agency, the Orange County Transportation Authority, purchased the concession from the private concessionaire in 2003.

A Case Study Of A Mature Managed-Lane Project

The 91 Express Lanes project on SR-91 in Orange County, Calif., illustrates that even a mature managed-lane facility with strong demand can have erratic revenue during economic downturns. SR-91 is a nearly perfect location for a managed-lane project because it faces limited competition from parallel roads. The managed lanes have no entrances or exits except at their ends, so all traffic must travel their full length, much like a bridge. Traffic generally moves westbound in the morning and eastbound in the afternoon. Eastbound afternoon peak traffic has historically been much more congested than westbound morning peak traffic because a merger with another roadway adds additional eastbound traffic and because an eastbound general-purpose lane ends, creating a bottleneck. As a result, eastbound tolls peak at about 90 cents per mile on Thursday and Friday afternoons, while westbound tolls peak at only about 46 cents per mile on weekday mornings.

The project experienced strong revenue growth from 2003 through 2007, averaging about 11% per year. However, traffic congestion in the corridor dropped during the recession, from December 2007 to June 2009, and revenue fell 2.3% in 2008 and 9.1% in 2009. Revenue then increased 4.8% in 2010, in part because of traffic delays caused by construction of a fifth auxiliary general-purpose lane designed to reduce eastbound congestion. When this additional

lane opened in November 2010, eastbound traffic congestion fell, and so did managed-lane revenue, by 6.1%. High gasoline prices also may have reduced traffic during several periods from 2008 through 2011.

Other U.S. Managed-Lane Projects

Another large managed-lane project under construction is the I-595 Express Lanes in Florida, a roughly 10-mile project with three reversible managed lanes in the median of about six to 10 toll-free general-purpose lanes. The I-595 project, scheduled to open in 2014, is innovative in that it was constructed as an availability-payment PPP project, and the state government will receive the toll revenue collected on managed lanes. An availability-payment PPP project is one in which a private concessionaire builds and operates an infrastructure project. The concessionaire receives a payment in return for keeping the project available for public use. In contrast, the three PPPs listed in the table subject the private concessionaire's income to traffic volume risk.

There are many other managed-lane facilities in the U.S., such as:

- Harris County Toll Road Authority's Katy Freeway Managed Lanes in Houston, Texas (opened 2009);
- MnPass Express Lanes on I-394 in Minneapolis, Minn. (opened 2005, and additional lanes opened in 2009);
- SR-167 Hot Lanes in Seattle, Wash. (opened 2008);
- I-15 Express Lanes in San Diego, Calif. (opened 2008 to 2012);
- I-15 Express Lanes in Salt Lake City, Utah (in their current configuration since 2010);
- I-25 HOV Express Lanes in Denver, Colo. (in their current configuration since 2009);
- I-680 Southbound Express Lanes in Alameda County, Calif. (opened 2010); and
- I-580 Eastbound Express Lanes in Alameda County, Calif. (likely 2013).

These projects are generally less directly comparable with the large projects listed in the table, in part because all permit HOV-2+ vehicles to drive for free.

Some also have sections with only one managed lane.

Managed lanes are a growing asset class for infrastructure investors, and it is important to understand the features that differentiate them from traditional toll roads. Managed lanes have many strengths, including proven demand and the ability to handle increasing traffic much faster than the corridor as a whole. However, they also present special risks, chief of which is the potential for unpredictable cash flows if the corridor is not sufficiently congested. As urban traffic begins to grow again, we expect local governments to increasingly look to investors for funding of managed-lane projects. Managed lanes are not a permanent solution to traffic gridlock, but they are an effective way for local governments to buy time while they develop more permanent solutions.

NOTES

- (1) Federal Highway Administration, Office of Highway Policy Information, "Traffic Volume Trends" monthly report
- (2) Texas Transportation Institute, "Annual Urban Mobility Report 2011," national congestion tables
- (3) "Estimating the Value of Travel Time and Value of Reliability Using Dynamic Toll Data," Xiaozheng He, Henry Liu, Xinyu Cao, Transportation Research Board Annual Meeting Jan. 22 to 26, 2012, Paper 12-2761
- (4) "Variation in the Value of Travel Time Savings and its Impact on the Benefits of Managed Lanes," Sunil Patel, Mark Burris, Douglass Shaw, S. Concas, Transportation Planning and Technology, Vol. 34, No. 6, August 2011 **cw**

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Overview

- Both public and privatized tollways in the U.S. have consistently raised tolls in recent years to pay for new projects and maintenance.
- Privatized roads have traditionally raised tolls more aggressively, but as public toll operators increasingly seek to maximize profits, the two ownership systems have begun to converge in terms of toll increases.
- Our selection of public toll roads is moving to maximize revenue generation, and we expect them to offer similar credit risk to privately owned roads in the future. Previously, some of these public toll roads had untapped revenue generation capacity.

U.S. Public And Private Toll Road Operators

Price Increases Converge As Project Funding Intensifies

Of the approximately 75,000 miles of U.S. highways, only about 5,000 (or roughly 7%) require tolls. But that mix could change as tighter government budgets force officials to seek methods to fund new projects. These include selling abandoned or underused assets, putting tolls on previously free highways, and building premium-price express, or “managed,” toll lanes. With growing demand for new roads, coupled with rising operating and maintenance costs, we expect that toll roads will remain a key financing option for the U.S. road system.

While the National Interstate and Defense Highways Act of 1956 does not allow a state to implement tolls for all traffic on a freeway section, states can impose tolls on newly constructed roads and pre-1956 routes. States have also begun adding toll high-occupancy vehicle (HOV) lanes and high-occupancy toll (HOT) lanes.

For comparison, Standard & Poor's Ratings Services examined a small group of similar publicly and privately run toll roads (*see table 1*). We wanted to determine if the owner of a road substantially influenced historical pricing and volume trends. The roads we chose were generally relatively new, short-length toll roads that were more directly comparable than statewide systems (*see table 2*). We chose shorter projects, and we avoided bridges and tunnels that sometimes lack close alternative routes. Where available, we chose public and privately run roads in close proximity. We also avoided analyzing partly tolled routes (such as managed lanes or HOT lanes on otherwise open-access routes). Many of the tollways have higher tolls for peak periods, and charge more for vehicles with three or more axles than for standard passenger cars. We did not look at the cost for trucks and heavy vehicles on these roads—the toll rates

vary from being double that of cars to being based on how many axles a vehicle has.

The toll roads in this group are some of the highest-cost routes in the U.S., and we therefore expect them to be more sensitive to an economic downturn or a regional disruption than other, lower-cost toll systems (such as statewide systems). Therefore, the trends we see in this particular set of roads may not extend to the full universe of U.S. toll roads.

Choosing pairs of roads also allows a more direct comparison between public and private toll road performance—the two Colorado routes we analyzed are different parts of the same ring-road, while the two Virginia routes connect near Dulles Airport. Each road has a unique history of toll increases, traffic volumes, and ownership structures. Our question is: Do privatized toll roads, whose strategy is to operate the road more efficiently and with the goal of generating a profit, raise toll rates more aggressively than publicly owned and operated toll roads, whose management strategy has been to provide a public service in which operations are geared toward funding the project's operating and maintenance costs with only a small operating margin?

The data we observed show that public tollways have, indeed, become more

Table 1 | U.S. Toll Road Comparison

Toll road	Debt issuer	Issuer rating	Location	Public/private?	Date built	Length (miles)	Cost/mile (cents)*
Foothills Eastern (CA-241)	Foothills/Eastern Transportation Corridor Agency, California; Toll Roads Bridges	BBB-/Stable	Orange County, Calif.	Public	1993	17.76	0.28
San Joaquin (CA-73)	San Joaquin Hills Transportation Corridor Agency, California; Toll Roads Bridges	BB-/Negative	Orange County, Calif.	Public	1996	24.53	0.21
Dulles Toll Road	Metropolitan Washington Airport Authority Dulles Toll Road, District of Columbia; Toll Roads Bridges	BBB+/Stable	Virginia	Public	1984	16.15	0.12
Dulles Greenway	Dulles Greenway, Virginia; Toll Roads Bridges	BBB-/Negative	Virginia	Private	1995	14.00	0.32
Chicago Skyway	N/A	Not rated	South Chicago, Ill.	Private	1958 (privatized 2004)	7.80	0.45
Denver E-470	E-470 Public Highway Authority, Colorado; Toll Roads Bridges	BBB-/Stable	North Denver, Col.	Public	Completed 2003	46.40	0.32
Denver Northwest Parkway (N-470)	N/A	Not rated	East Denver, Col.	Private	2004 (privatized 2006)	8.05	0.40

*Peak car rate, 2012. N/A—Not applicable.

aggressive about raising tolls, as they seek to maintain or increase revenue to cover growing operating costs and meet growing debt service obligations. These toll roads operate as separate public authorities that don't fund general government operations, and so must stand financially on their own. Both the public and privately operated routes that we reviewed have escalating back-loaded debt service obligations that require consistent revenue growth on the routes.

Historical Performance And Conclusions

After the 2008 recession, U.S. highway traffic volumes declined by 2% year-over-year after consistent 1% to 2% annual growth through the previous decade. Traffic miles travelled in 2010 were 1.5% lower than that in 2007. Similar declines happened to the set of toll roads in this article. However, most of these routes proceeded with planned toll increases during the downturn, somewhat mitigating the effect of falling volumes to maintain revenues close to previous levels (see table 3 and charts 1 and 2).

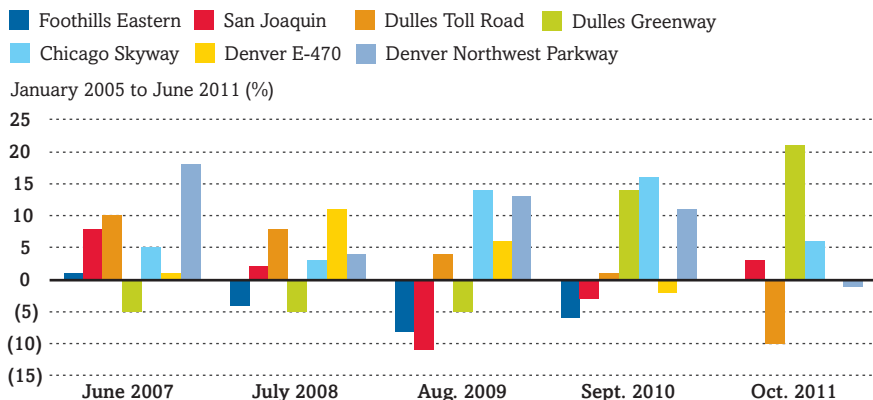
For the Chicago Skyway, tolls have gone up consistently and substantially since privatization. As part of the concession agreement, the toll rate increases were specified out to 2017 (at which point a car would pay \$5.50, up from \$4.00 today). After that, they will increase annually based on an index. Traffic volume is seasonal, with more vehicles during the summer. Historically, traffic volume dropped after each toll increase, but total revenues grew. However, elasticity of demand increased significantly during the recession that began in late 2007, with minimal increase in revenues after the toll increase. Regional unemployment was above national levels, and lower congestion in the corridor has reduced travel time on free alternative routes, which led to some traffic diversion.

In the Denver region, data from the Colorado Dept. of Transport show less traffic on E-470 after toll increases. The Northwest Parkway's traffic at times is well-below initial forecasts. This suggests that the toll rate may already be at the top of the potential range for maxi-

mizing revenues. While completion of the ring-road should provide additional traffic for the Northwest Parkway, industry observers acknowledge the route as one of the most expensive toll

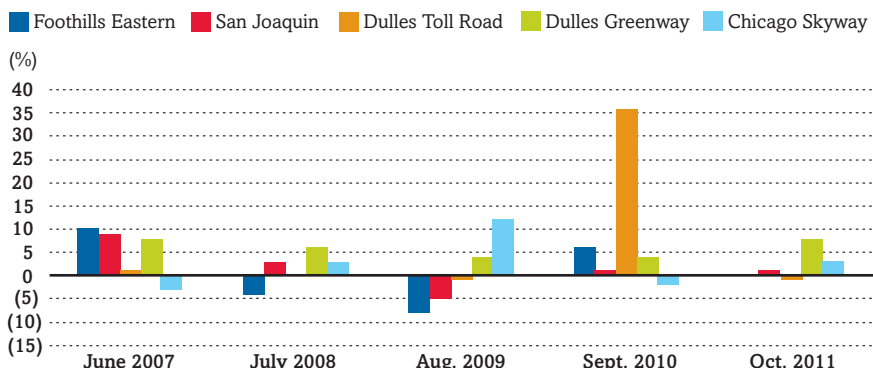
roads in the country. E-470 has a lower cost per mile for traversing the entire route, but it can end up with a similar cost to the Northwest Parkway for using only part of the route.

Chart 1 | Annual Change In Average Daily Traffic



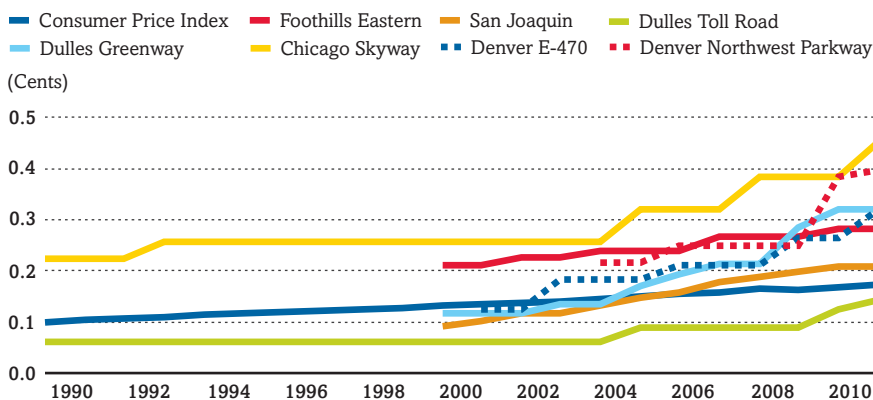
© Standard & Poor's 2012.

Chart 2 | Annual Change In Revenues*



*Revenue data are unavailable for the two Denver roads.
© Standard & Poor's 2012.

Chart 3 | Historical Cost Per Mile



© Standard & Poor's 2012.

The two publicly owned tollways in Orange County, Calif. began operating in the 1990s with electronic tolling, and have increased tolls consistently over time. Traffic has dropped on San Joaquin and Foothills Eastern since 2007, reflecting the general economic downturn rather than the impact of toll increases. Revenues are somewhat seasonal, with a combination of toll rate hikes and winter months leading to lower volumes at the start of each year. Trailing 12-month revenues have remained fairly constant despite increases in toll rates.

The two routes in Virginia were outliers. The Dulles Greenway saw revenue growth after its 2006 and 2009 toll increase, but revenues were relatively unchanged after a 2010 increase, suggesting an increase in demand elasticity. This indicates that some drivers have switched to free routes, which were improved during the previous five years and are not as heavily congested, especially during nonpeak hours. Construction on both routes over the

past five years affected traffic volumes, but major construction work is now complete. The Greenway also feels the impact of the increasing costs on the Dulles Toll Road. Drivers looking to traverse both roads from end to end have seen the total cost increase substantially as the Dulles Toll Road aggressively hikes rates.

The Dulles Toll Road's move to smaller annual toll increases led to higher revenues in the past couple of years. This suggests that most users were prepared to pay substantially more than the historical toll rate to traverse this road. This low toll elasticity can be attributable to its lower cost-per-mile compared with the higher rate the neighboring Greenway charges. Also, with the use of electronic toll collection by passenger cars at high levels, the user may be less sensitive to smaller, incremental rate changes. The operator is now more focused on revenue generation as it is obligated to help fund a mass transit project from toll revenues; we suspect that future planned toll increases will

Table 2 | Road Attributes

	Foothills Eastern	San Joaquin	Dulles Toll Road	Dulles Greenway	Chicago Skyway	Denver E-470	Northwest Parkway
Management	Public	Public	Public	Private	Private	Public	Private
Primary concession holder/operator	Transportation corridor agencies	Transportation corridor agencies	Virginia Dept. of Transportation	Macquarie Infrastructure Group	Macquarie Infrastructure Group and Cintra	E-470 Public Highway Authority	Bresa
Concession period	N/A	N/A	N/A	2056	2105 (99 years)	N/A	2106 (99 years)
Tolling type	Transponder or cash	Transponder or cash	Transponder (cash at limited times)	Transponder (cash at limited times)	Transponder or cash	Transponder	Transponder
Electronic system	FasTrak	FasTrak	E-ZPass	E-ZPass	I-Pass, I-Zoom, or E-ZPass	EXpressToll	Go-Pass/EXpressToll
Electronic toll percentage	80% in 2011	80% in 2011	75% in 2011	Similar to Dulles Toll Road	60% electronic in 2009	100%	100%

N/A—Not applicable.

Table 3 | Annual Change In Traffic And Revenues*

(January 2005 to June 2011)

(%)	Foothills Eastern	San Joaquin	Dulles Toll Road	Dulles Greenway	Chicago Skyway	Denver E-470	Denver Northwest Parkway
Average annual growth in average daily traffic	(3.50)	(0.50)	2.30	3.40	8.90	3.10	8.70
Average annual growth in revenue	0.60	1.50	6.00	6.10	2.40	N.A.	N.A.

*Revenue figures not available for Denver routes.

continue to increase revenues until the price per mile starts to approach that of other nearby routes like the Greenway.

The higher penetration rates of electronic toll collection allowed public authorities and private operators more flexibility to increase rates with less user sensitivity to smaller annual toll rate increases. Many operators have started to alter rates more frequently but by smaller amounts—the use of electronic tolling means that these increases may be less obvious to road users, with a goal of less effect on traffic volumes and an increase in revenues. Toll operators had previously preferred “round cash amounts,” with 25-cent increments, but electronic toll collections allow operators to easily and efficiently adjust toll rates annually in line with CPI or other indexes.

Looking at the historical cost per mile for the various routes, we see that the toll rates have consistently increased at all locations, with an increase in frequency and size of increases since the mid 2000s (see chart 3).

Aggregating the average per-mile toll rate at the public (Foothill, San Joaquin, Dulles Toll Road, and E-470) and the private roads (Chicago Skyway, Dulles Greenway, and Northwest Parkway), we can see a similar trend in toll rates per mile in both groups (see chart 4). While the Chicago Skyway and Northwest Parkway are particularly expensive, and ensure the average rate is higher for the private routes, the rate of change is similar for both groups.

Looking at cost per mile, the Northwest Parkway and Chicago Skyway are the most expensive routes on a per-mile basis. E-470 is the most expensive publicly owned route, and the Dulles Toll Road is notable for having been very cheap until recently. However, tolls on all the roads are consistently going up. The average toll rate for both private and public roads is similar, with a slightly higher increase during the recession for the private roads.

However if we look at how toll rates are increasing over 20 years and 10 years (or since privatization), we see the largest increases at the Greenway and also higher-than-average increases at

some of the publicly owned routes, such as San Joaquin, E-470, and the Dulles Toll Road (see table 4 and chart 5). This suggests that despite public ownership, the operators of publicly owned roads are now looking to maximize routes’ earning potential. If tolls go up at these public routes, the roads become greater revenue generators for the government owners to fund capital projects and other assets, as well as more attractive assets for a potential sale to private interests (although there is no indication that current owners are interested in privatizing). Table 4 also shows that the number of increases in tolls has gone up in the past 10 years versus the previous 10 years, particularly for publicly owned routes. For all of the roads in our study, toll rates have increased by more than the inflationary adjusted increases, with most

annual increases at more than 5% higher than inflation.

Again, aggregating public versus private roads into two groups, we can look at the change in average toll rates over recent years. The public toll rates have increased almost as fast as the private ones, and both have exceeded CPI increases. We expect this trend to continue for public and private operators. All road operators, particularly for these short-distance routes, are moving to maximize revenues. This is quite a different goal from the historical government-owner goal of covering operating costs.

Short-distance toll roads tend to be some of the most expensive on a per-mile basis. While these toll rates may have historically been underpriced on some publicly owned routes, the recent jump in tolls suggests the rates are

Chart 4 | Historical Average Toll Rate For Public Roads Versus Privately Owned Roads

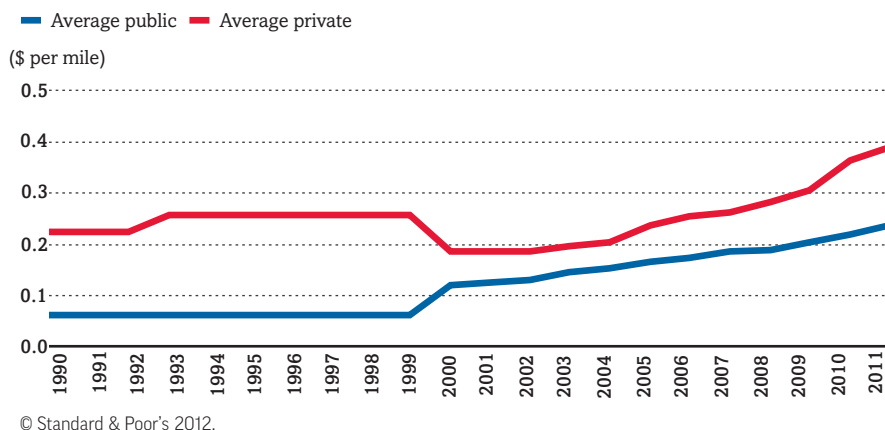


Chart 5 | Change In Toll Rates

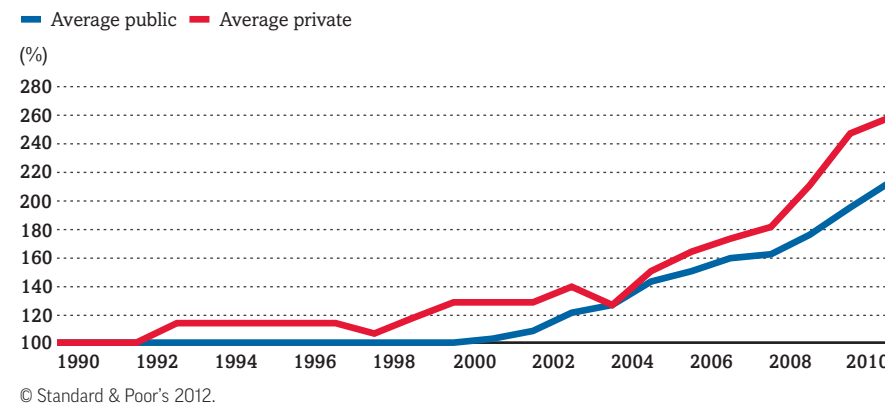


Table 4 | Annual Real Increase* In Toll Rates

(%)	Foothills Eastern	San Joaquin	Dulles Toll Road	Dulles Greenway	Chicago Skyway	Denver E-470	Denver Northwest Parkway
Base year 1990 (or commercial opening)	2000	2000	1990	1998	1990	2001	2004
Increase in toll through 2011	33	129	135	291	100	156	83
CPI over same period	31	31	72	38	72	27	19
Real annual increase	0.2	5.2	1.5	8.3	0.7	7.2	6.3
Base year (2001 or year of privatization)	2001	2001	2001	2001	2004	2001	2007
Increase in toll through 2011	33	105	135	173	75	156	60
CPI over same period	27	27	27	27	19	27	8
Real annual increase	0.5	4.9	6.4	7.9	5.7	7.2	10.2

*Excluding CPI.

quickly moving to more frequent and smaller annual increases compared with the less frequent significant increases of the past. Private operated roads have had higher elasticity, suggesting that these roads are more sensitive to toll increases. This suggests that these roads are more sensitive to national economic cycles and unemployment rates that contributed to lower overall traffic levels in the corridors. Some publicly owned routes seem to have been historically underpriced, but this has changed in recent years as tolls start to increase faster than CPI levels and generate more revenue. The result is that we are seeing some convergence of the rate-setting strategy between publicly and privately operated projects. We expect the differences between the two types of operators to continue to narrow as both operators come under pressure to cover back-loaded and escalating debt service costs and other capital or profit motives.



The motivations of management can vary between different toll roads, but the goal of revenue maximization remains the same. The debt structure for these toll roads, whether public or private, includes debt service schedules based on projections of average historical traffic growth. The recent downturn has moved traffic levels below historical trends, and reducing revenues at the roads. While most of the toll roads have preapproved toll increase schedules, they all depend on recovering traffic volume. Both public and private roads

want to meet debt service. Some public owners are seeking additional revenues to cover other needs like public transport in Virginia, while some private projects are close to breaching debt service coverage thresholds that would stop any cash distributions to equity holders. In both cases, maximizing revenue is a goal of management.

What's Down The Road?

High toll rates could have credit implications for public toll road operators, who have traditionally enjoyed significant capacity to raise rates with little or no price elasticity. High toll rates may generate revenue growth, but the growth rate may slow until regional economies recover and congestion builds. As a result, we would expect future revenue on these roads to grow not with toll increases but instead with traffic volume, likely limited to the rate of growth in regional GDP. The effect of universally high tolls on regional economies hasn't been seen in the U.S. in the past century, so the road down which this trend could lead us is not yet clear. **CW**

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FAA Funding Reductions Could Ground Some U.S. Airport Projects

Overview

- Airport operators will likely receive less federal support for the next four years.
- As such, they may increasingly need to approach the capital markets to get the funding they need.
- Although our ratings on airports are generally strong, we think some airports may be vulnerable to a one-notch downgrade.

The need for funding for safe, reliable, and up-to-date transportation infrastructure keeps growing in step with the demands of a rising population, and airports are no exception. But declining (and increasingly uncertain) federal support, a weak economy, and the financial stress that might result from some financing options could make it tougher for U.S. airports to pay for critical projects—and could lead, in some cases, to airport ratings being lowered by one notch.

In February, President Barack Obama signed into law the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012, which authorized \$3.35 billion in annual Airport Improvement Program (AIP) funding for the next four federal fiscal years (2012 to 2015). Airport operators can use AIP funds on most airfield capital improvements or

repairs and, in some specific situations, to build terminals, hangars, and other non-aviation projects. But the new authorization is \$165 million per year less than the previous authorization. And with Washington seeking to cut the national debt, trim the federal budget, and reduce appropriations, the actual funding levels may be even lower than those authorized currently.

AIP Appropriations Remain A Question

The FAA's Airport Improvement Program aims to help airports fund or start projects to modernize their facilities or expand capacity. Before the latest four-year reauthorization was approved, the FAA had received funding through 23 short-term extensions. Because of the uncertainty

U.S. Airports And Aviation Infrastructure Ratings

As of April 2, 2012

Obligor	Issuer	State	Long-term rating	Outlook
Albany International Airport	Albany County Airport Authority	New York	BBB+	Stable
Albuquerque International Sunport	Albuquerque Department of Aviation	New Mexico	A+	Stable
Albuquerque International Sunport	Albuquerque International Sunport	New Mexico	A (second lien)	Stable
Austin Bergstrom International Airport	Austin	Texas	A	Stable
Boston Logan International Airport	Massachusetts Port Authority	Massachusetts	AA-	Stable
Bradley International Airport	Connecticut Department of Transportation (Bureau of Aviation and Ports)	Connecticut	A-	Stable
Burbank-Glendale-Pasadena Airport Authority	Burbank-Glendale-Pasadena Airport Authority	California	A+	Stable
Bush Intercontinental Airport and Hobby Airport	Houston Department of Aviation	Texas	AA-	Stable
Bush Intercontinental Airport and Hobby Airport	Houston Department of Aviation	Texas	A (second lien)	Stable
Charleston County Airport	Charleston County Airport District	South Carolina	A-	Positive
Charlotte/Douglas International Airport	Charlotte Aviation Department	North Carolina	A+	Stable
Chicago Midway International Airport	Chicago Department of Aviation	Illinois	A	Stable
Chicago Midway International Airport	Chicago Department of Aviation	Illinois	A- (second lien)	Stable
Chicago O'Hare International Airport	Chicago Department of Aviation	Illinois	AA	Stable
Chicago O'Hare International Airport	Chicago Department of Aviation	Illinois	AA- (second lien)	Stable
Chicago O'Hare International Airport	Chicago Department of Aviation	Illinois	A- (third lien)	Positive
Cincinnati/Northern Kentucky International Airport	Kenton County Airport Board	Ohio	A-	Negative
Cleveland Hopkins International Airport	Cleveland Department of Port Control	Ohio	A-	Stable
Colorado Springs Airport	Colorado Springs	Colorado	A-	Stable
Corpus Christi International Airport	Corpus Christi	Texas	BBB-	Stable
Dallas-Fort Worth International Airport	Dallas-Fort Worth Airport Board	Texas	A+	Stable
Dayton International Airport	Dayton	Ohio	A-	Stable
Denver International Airport	Denver Department of Aviation	Colorado	A+	Stable
Des Moines International Airport	Des Moines International Airport	Iowa	A-	Stable
Detroit Metro Wayne County Airport	Wayne County Airport Authority	Michigan	A	Stable
Detroit Metro Wayne County Airport	Wayne County Airport Authority	Michigan	A- (second lien)	Stable
El Paso International Airport	El Paso	Texas	A+	Stable
Ford International Airport	Kent County Department of Aeronautics	Michigan	BBB+	Stable
Fort Lauderdale-Hollywood International Airport	Broward County Department of Aviation	Florida	A+	Stable
Fresno Yosemite International Airport	Fresno	California	BBB	Stable
Guam International Airport	Guam Airport Authority	Guam	BBB	Stable
Hartsfield Jackson Atlanta International Airport	Atlanta Department of Aviation	Georgia	A+	Stable
Hartsfield Jackson Atlanta International Airport	Atlanta Department of Aviation	Georgia	A (second lien)	Stable

surrounding the reauthorization, some airport operators had a difficult time planning financing for capital needs beyond one or two years into the future.

Even with a four-year authorization in place, though, there is no guarantee that the government would not make further cuts to AIP funding, what with the significant pressure to reduce spending overall.

Actual appropriations under the AIP have reached their maximum authorized levels in recent years (*see chart 1*).

Meanwhile, the cap on passenger facility charges (PFCs) was not adjusted in the new authorization. The charge, which is added to each passenger airline ticket, remains capped at \$4.50 per ticket, even though many airport operators had

requested an increase. PFC collections provide airport operators with a local funding source for FAA-approved projects that enhance airport safety, security, or capacity; reduce noise; or increase air carrier competition. Unlike AIP funding, airports can use PFC collections to pay debt service on any bonds they issue to fund PFC-eligible projects. Not all airports are

U.S. Airports And Aviation Infrastructure Ratings (continued)

Obligor	Issuer	State	Long-term rating	Outlook
Honolulu International Airport	Hawaii Department of Transportation (Hawaii Airport System)	Hawaii	A	Stable
Indianapolis International Airport	Indianapolis Airport Authority	Indiana	A	Stable
Jacksonville Aviation Authority	Jacksonville Aviation Authority	Florida	A	Stable
John Wayne Airport	Orange County	California	AA-	Stable
Kansas City International Airport	Kansas City International Airport	Missouri	A+	Negative
Kansas City International Airport	Kansas City International Airport	Missouri	A (second lien)	Negative
Lambert-St. Louis International Airport	St. Louis	Missouri	A-	Negative
Las Vegas-McCarran International Airport	Clark County Department of Aviation	Nevada	AA-	Negative
Las Vegas-McCarran International Airport	Clark County Department of Aviation	Nevada	A+ (second lien)	Negative
Little Rock National Airport	Little Rock	Arkansas	A-	Positive
Los Angeles International Airport	Los Angeles Department of Aviation	California	AA	Stable
Los Angeles International Airport	Los Angeles Department of Aviation	California	AA- (second lien)	Stable
Louisville International Airport	Louisville Regional Airport Authority	Kentucky	A+	Stable
Manchester Boston Regional Airport	Manchester	New Hampshire	BBB+	Stable
Memphis International Airport	Memphis-Shelby County Airport Authority	Tennessee	A-	Stable
Metropolitan Knoxville Airport Authority	Sevier County Public Buidling Authority	Tennessee	A-	Stable
Miami International Airport	Dade County Aviation Department	Florida	A-	Stable
Minneapolis-St. Paul International Airport	Minneapolis-St. Paul Metro Airports Commission	Minnesota	AA-	Stable
Minneapolis-St. Paul International Airport	Minneapolis-St. Paul Metro Airports Commission	Minnesota	A (second lien)	Stable
Mobile Airport Authority	Mobile Airport Authority	Alabama	BBB	Stable
Myrtle Beach International Airport	Horry County	South Carolina	A-	Stable
Nashville International Airport	Metropolitan Nashville Airport Authority	Tennessee	A	Stable
New Orleans International Airport	New Orleans Aviation Board	Louisiana	A-	Stable
Okaloosa County Airport System	Okaloosa County	Florida	BBB+	Stable
Omaha Airport Authority	Omaha Eppley Airfield	Nebraska	AA-	Stable
Ontario International Airport	Los Angeles Department of Aviation	California	A-	Stable
Orlando International Airport	Greater Orlando Aviation Authority	Florida	A+	Stable
Orlando International Airport	Greater Orlando Aviation Authority	Florida	BBB+ (second lien)	Stable
Palm Beach International Airport	Palm Beach County Department of Aviation	Florida	A	Stable
Pensacola Regional Airport	Pensacola	Florida	BBB	Stable
Philadelphia International Airport	Philadelphia Department of Aviation	Pennsylvania	A+	Stable
Piedmont Triad International Airport	Piedmont Triad Airport Authority	North Carolina	A-	Stable
Pittsburgh International Airport	Allegheny County Airport Authority	Pennsylvania	BBB+	Positive

eligible to collect PFCs, although 385 U.S. airports currently do, including 99 of the nation's 100 largest airports. Standard & Poor's Ratings Services doubts the cap will be raised before the end of the current four-year authorization period. Raising the PFC cap, which has not been done since 2000, would help airport operators undertake facility improvements they would otherwise have to put off until other funding sources could be identified.

The latest bill does, however, authorize the U.S. Comptroller General to study ways to collect PFCs without including them in ticket prices. If the study yields a workable solution, the increased revenue from raising the cap could help provide airports with the additional capital they need without raising ticket surcharges, which the airline industry strongly opposes.

The federal government views transportation spending as discretionary.

And in light of the reduction in AIP funding, no increase to the PFC cap, and the strained finances of local municipalities, we believe airports could have fewer options to fund their capital needs. The obvious choices to fund urgent capital projects are to approach the debt markets or to draw on available liquidity. Either option could become a rating factor, especially if new debt or reduced liquidity results

U.S. Airports And Aviation Infrastructure Ratings (continued)

Obligor	Issuer	State	Long-term rating	Outlook
Port Authority of New York and New Jersey (JFK International, La Guardia Airport, and Newark International)	Port Authority of New York and New Jersey	New York	AA-	Stable
Port Columbus International Airport	Columbus Regional Airport Authority	Ohio	A+	Stable
Port of Oakland (Metropolitan Oakland International Airport)	Port of Oakland	California	A	Positive
Port of Oakland (Metropolitan Oakland International Airport)	Port of Oakland	California	A- (second lien)	Positive
Port of Seattle (Seattle-Tacoma International Airport)	Port of Seattle	Washington	AA-	Stable
Port of Seattle (Seattle-Tacoma International Airport)	Port of Seattle	Washington	A+ (second lien)	Stable
Port of Seattle (Seattle-Tacoma International Airport)	Port of Seattle	Washington	A (third lien)	Stable
Portland International Airport	Port of Portland	Oregon	AA-	Stable
Portland International Jetport	Portland	Maine	BBB+	Positive
Sacramento International Airport	Sacramento County Airport System	California	A	Stable
Sacramento International Airport	Sacramento County Airport System	California	A- (second lien)	Stable
San Antonio International Airport	San Antonio Airport System	Texas	A+	Stable
San Antonio International Airport	San Antonio Airport System	Texas	A- (second lien)	Stable
San Diego International Airport	California Maritime Infrastructure Authority	California	A+	Stable
San Diego International Airport	California Maritime Infrastructure Authority	California	A (second lien)	Stable
San Francisco International Airport	San Francisco Airports Commission	California	A+	Stable
San Jose International Airport	San Jose Department of Aviation	California	A-	Stable
Sky Harbor International Airport	Phoenix Aviation Department	Arizona	AA-	Stable
Sky Harbor International Airport	Phoenix Aviation Department	Arizona	A+ (second lien)	Stable
Southwest Florida International Airport	Lee County Port Authority	Florida	A-	Stable
Spokane Airport Authority	Spokane County	Washington	A+	Stable
T.F. Green International Airport	Rhode Island Economic Development Corp.	Rhode Island	BBB+	Negative
Tampa International Airport	Hillsborough County Aviation Authority	Florida	A+	Stable
Tulsa International Airport	Tulsa Airports Improvement Trust	Oklahoma	BBB+	Stable
Tulsa International Airport	Tulsa Airports Improvement Trust	Oklahoma	BBB (second lien)	Stable
Washington Dulles International Airport and Reagan National Airport	Metropolitan Washington Airport Authority	Washington, D.C.	AA-	Stable
Will Rogers World Airport	Oklahoma City Airport Trust	Oklahoma	AA	Stable
Will Rogers World Airport	Oklahoma City Airport Trust	Oklahoma	A+ (second lien)	Stable

in a financial risk profile that is no longer consistent with the existing credit rating.

Airport Ratings Suffered During The Recession

The economy is a key factor we consider when evaluating an airport's credit quality. The price of jet fuel, which accounts for roughly 30% to 40% of an airline's operating costs, affects demand for air travel because airlines pass higher fuel costs along to customers through higher fares. Demand for air travel has not returned to pre-2008 levels, but it has been rebounding during the past two years (see chart 2).

The effects of the recent recession on our ratings are easy to see: From 2009 through 2011, we lowered ratings on 17 general airport revenue bonds (GARBs) and raised ratings on only nine. Conversely, in 2006 through 2008, we raised ratings on 27 GARBs, and lowered ratings on only one (see chart 3).

Currently, among the 94 GARBs we rate, 85% have a stable outlook, 7% have a negative outlook, and 7% have a positive outlook. All have investment-grade ratings. About 17% are in the 'AA' category, 67% are in the 'A' category, and the remaining 15% are in the 'BBB' category (see chart 4). Despite our stable outlooks on most of these ratings, we acknowledge the credit risks of reduced federal funding, high fuel costs, a weak economy, and airline consolidation.

Lower Demand Could Have A Silver Lining

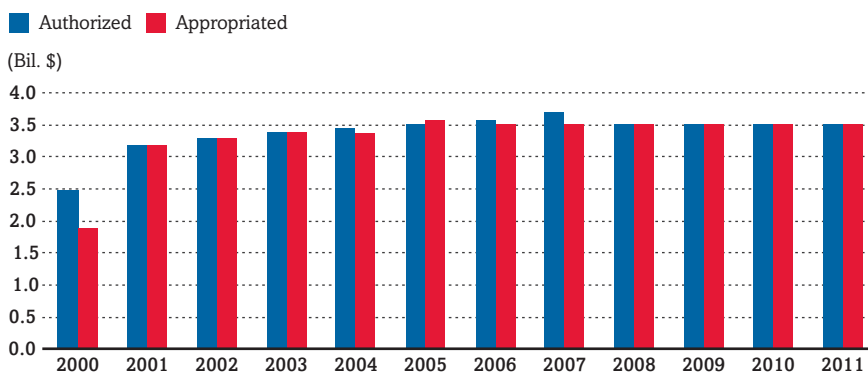
Standard & Poor's latest economic forecast places the risk of another recession at 20%, down from 25% in our previous forecast. The unemployment rate is dropping after three straight months of more than 200,000 jobs gained, and reports of business sentiment and initial jobless claims are encouraging. A sustained increase in oil prices, however, could reverse the increase in household incomes and purchasing power. Although we think the boost from the earned income tax credit has given some people more purchasing power, high oil prices will still weigh on overall eco-

nomie growth and affect the demand for air travel.

Yet, lower demand could work to some airport operators' advantage. A decline in flights and passengers could allow airports to scale back or defer certain improvements. For instance, an airport might postpone widening passenger concourses or adding runways if it is serving fewer passengers than it anticipated.

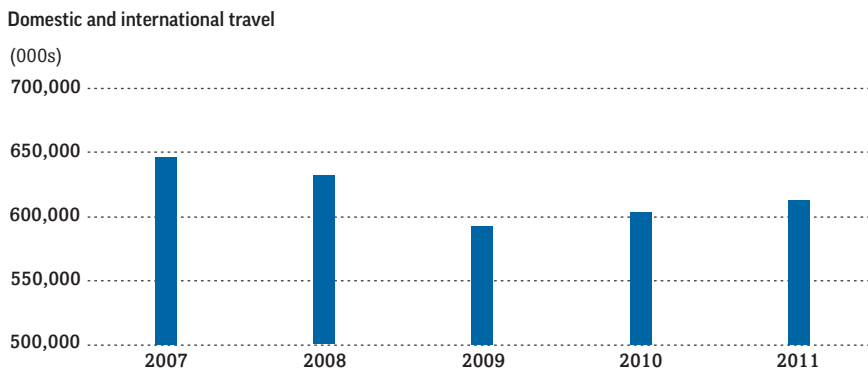
But lower demand could also mean lower airport revenues. The rating effect would depend on the airport's overall financial profile. We would consider lowering our ratings on airports that are unable or unwilling to enhance their revenues to preserve margins and liquidity during an economic slowdown or a period of declining demand for air travel.

Chart 1 | AIP Authorizations Vs. Appropriations, Fiscal Years 2000 To 2011



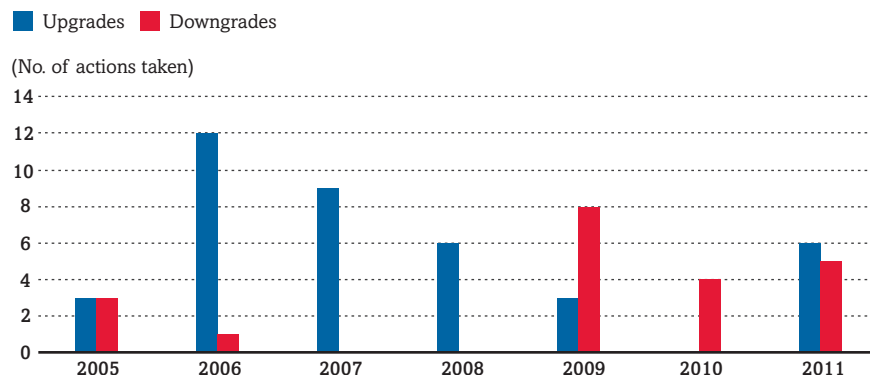
Source: FAA, Office of Airport Planning and Programming.
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Chart 2 | Total U.S. Passenger Enplanements (2007 To 2011*), Scheduled Only



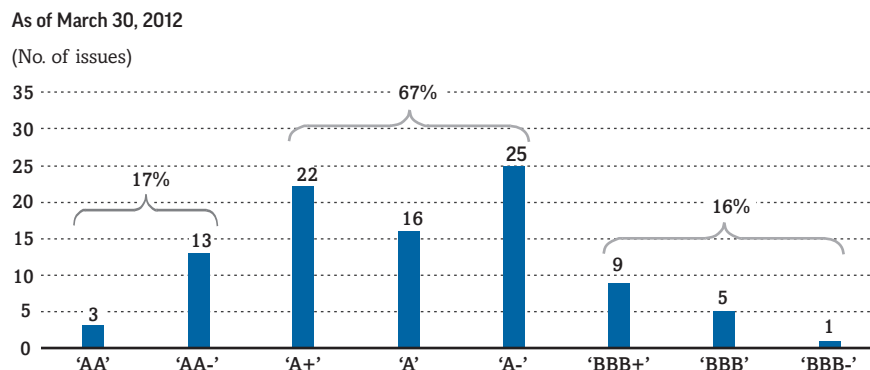
*January through October only for each year; data for November and December 2011 are not available.
Source: Bureau of Transportation Statistics.
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Chart 3 | General Airport Revenue Bond Rating Actions Taken, 2005 To 2011



Source: Standard & Poor's.
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Chart 4 | U.S. Airport GARB Rating Distribution



Source: Standard & Poor's.
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Airports That Make Do With Less Could Risk Their Credit Ratings

Airport credit quality has remained quite resilient despite the tumult of the past decade: bankruptcies, consolidation, the severe acute respiratory syndrome (SARS) pandemic, and a global recession, not to mention hurricanes, earthquakes, volcanic eruptions, tornadoes, and the far-reaching effects of the Sept. 11, 2001 terrorist attacks. Yet, U.S. airport credit quality has, in most cases, remained stable or changed only slightly, and most downgrades were within a notch of the previous rating.

Airports that are resistant to adjusting rates and charges might be at more risk of downgrades. We expect larger airports to fare better because of the size of their markets, their importance to the national aviation system, and their

strategic importance to some of the country's largest airlines. We also believe smaller airports with strong financial margins and liquidity and low debt will be better-positioned to withstand lower passenger levels. But no matter their size, all airports may struggle to meet their funding needs as they try to make due with less government funding than they had hoped for. **CW**

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Credit FAQ

How Government Support— And Government Funding— Affect Our Rating On Amtrak

The disagreements in Congress regarding fiscal policy and the passage of the Budget Control Act Amendment of 2011, which calls for significant reductions in expenditure growth over the next 10 years, make future appropriations for Amtrak harder to predict, in Standard & Poor's Ratings Services' view. Even so, we still believe Congress will continue to support Amtrak in its current form for public policy reasons.

Q. *What type of entity is Amtrak, and how is it rated?*

A. Amtrak, officially known as the National Railroad Passenger Corp. (A-/Negative/—), is a for-profit corporation whose preferred stock is held by the Department of Transportation for the benefit of the federal government. The members of the board of directors are appointed by the President and must be confirmed by the Senate. Standard & Poor's classifies Amtrak as a government-related entity (GRE). Although most GREs are partially or totally owned by a government, we also consider a company to be a GRE if we think the government would provide extraordinary financial support if needed because the company plays a critical role in the economy as a provider of crucial goods and services. We consider extraordinary government support to be temporary, entity-specific, and required to alleviate financial stress at the GRE. In our view, "extraordinary" funding for Amtrak would constitute emergency funds to meet debt service or operating requirements.

Given Amtrak's inability to cover expenses with internally generated cash, Congressional funding is a key rating factor.

When assigning ratings on GREs, our GRE criteria (see "General Criteria: Rating Government-Related Entities: Methodology And Assumptions," published Dec. 9, 2010, on RatingsDirect, on the Global Credit Portal) calls for a corporate credit rating that falls between what we call the entity's "stand-alone credit profile" and our rating on the government. The stand-alone credit profile reflects the GRE's credit quality, including ongoing government support but excluding extraordinary support. We start with the stand-alone credit profile and then adjust it to reflect our view of the likelihood that the entity would receive extraordinary government intervention on a timely basis if needed. The degree of

adjustment, or "notching," is determined by our assessment of the importance of the entity's role as well as the strength and durability of the links between the two.

Q. *What is Amtrak's stand-alone credit profile, and what does it reflect?*

A. We evaluate Amtrak's stand-alone credit profile as 'bbb'. This reflects its important public-service role and ongoing government support, but also reflects its reliance on government appropriations to offset operating losses and the company's ongoing operating difficulties. As with most passenger railroads worldwide, Amtrak operates at a substantial loss and relies on annual federal appropriations and grants to help fund operating costs, capital investments, and debt service.

In our view, Amtrak plays an important public-service role because it is the only provider of long-distance passenger rail transportation in the U.S. In addition to providing intercity rail transportation, Amtrak is also the largest provider of contract-commuter service for state and regional authorities in various markets (see sidebar). Although Amtrak competes with other, more flexible transportation modes and its service is not essential in many markets, ridership has been increasing, reflecting capacity reductions and higher fares in the airline industry, higher gasoline costs, and various marketing initiatives. Ridership in fiscal 2011 (ended Sept. 30) reached an all-time high and represented a 4.8% increase over 2010 ridership. Total revenues increased 7.7%. However, expenses also increased, resulting in a \$1.2 billion operating loss for the year, relatively unchanged from the loss in fiscal 2010. In fiscal 2011, revenues covered 85% of operating expenses. Government payments for capital and operating expenditures are recorded when received as "debt and other paid-in capital" in the company's consolidated statements of changes in capitalization.

Given Amtrak's inability to cover expenses with internally generated cash, Congressional funding is a key rating factor. In recent years, Amtrak has undertaken a number of initiatives to

improve its business prospects. We believe this, along with increased customer demand and long-term considerations such as the fuel efficiency and lower greenhouse gas emissions of passenger railroads, has strengthened Congressional willingness to provide funding. In addition, most members of Congress have constituents who rely on Amtrak for transportation.

Q. Did the downgrade of the U.S. sovereign debt affect the rating on Amtrak?

A. Our lowering of the rating on the U.S. to 'AA+' from 'AAA' in August 2011 did not directly affect our rating on Amtrak. Under our GRE criteria, we would have to lower our rating on the U.S. to 'AA-', two more notches, before it would trigger a downgrade on Amtrak, given our current view of Amtrak's role and its link to the government.

Q. Why does Amtrak have a negative outlook?

A. Our negative outlook reflects the increased uncertainty surrounding future appropriations, given Congressional disagreements on how to address the federal deficit and legislation that calls for significant reductions in expenditure growth, even though we believe Amtrak will continue to receive sufficient ongoing financial support to maintain existing operations. Our negative outlook also reflects the potential for a down-

grade if we believe the government's commitment to Amtrak has weakened.

Q. How much support has Amtrak received in recent years?

A. Congress funds Amtrak by providing appropriations to the Department of Transportation (DOT). The DOT provides funds to Amtrak via operating funds and grant agreements through its agency, the Federal Railroad Administration (FRA; see chart).

For many years, Congress provided annual appropriations to Amtrak without having authorizing legislation in place. This changed in 2008, when Congress enacted the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), which authorized five annual grants totaling \$9.8 billion for fiscal years 2009 through 2013. This does not represent set financing, however; funding is still dependent on annual appropriations votes in Congress. Still, we view the passage of this legislation as additional evidence that Congress intends to continue providing Amtrak with sufficient funds to support ongoing operations.

On Feb. 13, 2012, President Obama presented his fiscal 2013 budget, which calls for \$1.55 billion in direct funding for Amtrak and potential additional funding through competitive grants. The budget also contained a proposal for additional funding for fiscal 2012.

Amtrak is required to present to Congress each year its own grant request,

explaining how much it is seeking in appropriations and how it proposes to use the money. In February 2012, Amtrak presented its request for fiscal 2013, for \$2.1 billion. Typically, Amtrak's budget request is higher than the amounts actually granted, but the lesser amount is still adequate to support existing operations.

We believe Amtrak could absorb some reduction in funding during the next few years and continue operating as usual. This reflects, in part, the additional funding Amtrak received from the American Recovery and Reinvestment Act (also known as the stimulus package) and other grants to supplement capital spending. In addition, Amtrak recently received a low-interest-rate loan from the FRA for locomotive purchases.

Q. How likely is it that Amtrak would receive extraordinary support from the government?

A. We believe Amtrak has a "moderately high" likelihood of receiving extraordinary support because of its "important" role and its "strong" link with the government, as defined in our GRE criteria. This results in a two-notch rating upgrade from the company's stand-alone credit profile.

Q. Could high-speed rail initiatives provide another source of funding for Amtrak?

A. Amtrak currently operates the only high-speed rail (HSR) service in the U.S.—

The History of Amtrak

Prior to 1971, freight railroads provided intercity passenger rail service in the U.S. In 1970, the government passed the Rail Passenger Service Act of 1970, creating the National Railroad Passenger Corp. and relieving the freight railroads of their common-carrier responsibilities.

The common stockholders acquired their stock from four private-sector railroads that contributed startup equipment and vehicles to Amtrak upon its formation. The company has stated that it believes the fair market value of its common stock is zero.

Amtrak began service in 1971 and today operates in 46 states (all but Alaska, Hawaii, South Dakota, and Wyoming)

and three Canadian provinces. It owns 650 route miles of track, primarily in the Northeast Corridor and Michigan. Elsewhere in the country, it operates over tracks owned by freight railroads.

According to the Amtrak Annual Report for fiscal 2011, the company served a record 30.2 million passengers during fiscal 2011. More than 900,000 people used Amtrak infrastructure or Amtrak-operated commuter trains to get to work. Its Northeast Corridor is the busiest intercity railroad in North America, carrying more than 825,000 riders every weekday.

the Acela service, which runs between Washington, D.C., and Boston (a route commonly known as the “Northeast Corridor,” or NEC). Given increasingly congested highways and heightened environmental concerns, interest in further developing HSR service has intensified.

Amtrak is pursuing a number of efforts to further HSR service, involving near-term projects and a long-term vision, with much of the focus centered on the NEC. Amtrak’s ultimate vision is to establish a two-track, high-capacity, dedicated rail system called “Next-Gen” HSR by 2040. Before that can be accomplished, Amtrak is working on several near-term initiatives:

- First, to increase Acela capacity by 40% with additional equipment;
- Second, to double the frequency of Acela trips between Washington and New York during peak periods;
- Third, to complete the NEC “Gateway Project.” This project, first announced in 2011, involves a multi-year investment in infrastructure to provide additional capacity into Manhattan for Amtrak intercity and New Jersey Transit commuter services; and
- Fourth, to further expand Acela trip frequencies and equipment.

Amtrak expects to complete steps 1 and 2 in 2015 and 2020, respectively. Step 3, the Gateway Project, is critical, as it addresses Amtrak’s biggest capacity constraint.

Amtrak has used money it received from the stimulus package and from

PRIIA-authorized High-Speed and Intercity Passenger Rail (HSIPR) and Transportation Investment Generating Economic Recovery (TIGER) grant programs, both of which are administered by the FRA, to help fund these projects. Of particular note was a \$450 million HSIPR grant awarded in fiscal 2011 that will enable Amtrak to make investments to increase train speeds to 160 mph from 135 mph along a 24-mile stretch of track between Trenton, N.J., and New Brunswick, N.J., when the project is completed in fiscal 2017.

But Amtrak’s HSR efforts are not limited to the NEC. It is also working on projects involving its Chicago-to-Detroit, New York-to-Albany, and Chicago-to-St. Louis routes, along with the freight railroads that own these lines and state and local governments. In addition to direct grants to Amtrak, Congress has awarded other grants to states for infrastructure work along the NEC.

Other HSR initiatives in the U.S. are under way. The California High-Speed Train Project is one of the most well-known. Initially, this project, which is being led by the California High-Speed Rail Authority, would involve 800 miles of track between San Francisco and Los Angeles/Anaheim via the Central Valley and later to Sacramento and San Diego, and trains would operate at speeds of up to 200 mph. If completed, this would be the first truly high-speed rail system in the U.S., making it comparable to the Tokaido line that operates between Tokyo and Osaka, and the TGV network in France. Amtrak’s Acela trains operate at speeds of up to 150 mph, but they can run at the higher speeds only on select portions of track. Funding for the California project, which is projected to cost at least \$45 billion, would likely be provided by private and public sources. **CW**

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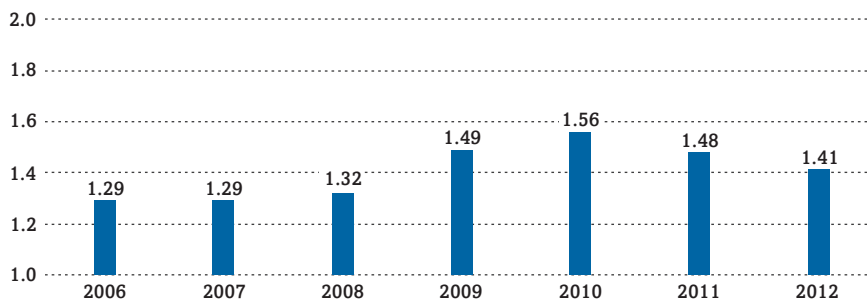
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Congressional Appropriations For Amtrak

By Fiscal Year

(Bil. \$)



Sources: Amtrak and the Federal Railroad Administration.
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U.S. Domestic Shipping Companies

Overview

- The fleets that make up the U.S. domestic shipping industry are aging and may no longer meet environmental standards once stricter regulations take effect.
- We believe looming capital spending requirements for fleet replacement will come with high financing costs.
- Given their weak credit quality, fewer shipping companies are likely to meet stringent bank loan requirements or qualify for U.S. government-backed financing programs.

Credit Risks Mount As Ships Start Showing Their Age

The U.S. domestic shipping industry's fleet is aging. More than a thousand ships and barges will reach the end of their useful lives in the next few years. More may be forced out of service as environmental standards tighten. But given the eroding credit quality of many carriers, replacing vessels may prove difficult, or at least costly, for shipping companies.

Standard & Poor's Ratings Services believes the U.S. domestic fleet likely will contract over the next three to five years as vessels retire faster than owners can replace them. Companies that cannot find sufficient financing to refresh their fleet may not survive. For operators that do, the reduced capacity should cut back on industry oversupply and support better charter rates.

Time To Retire "Old Faithful"?

Intra-U.S. domestic shipping occurs through a network on inland waterways though the Mississippi and ports along the Atlantic, Gulf, and Pacific coasts, as well as Alaska and Hawaii. The inland river system and the coastwise trade

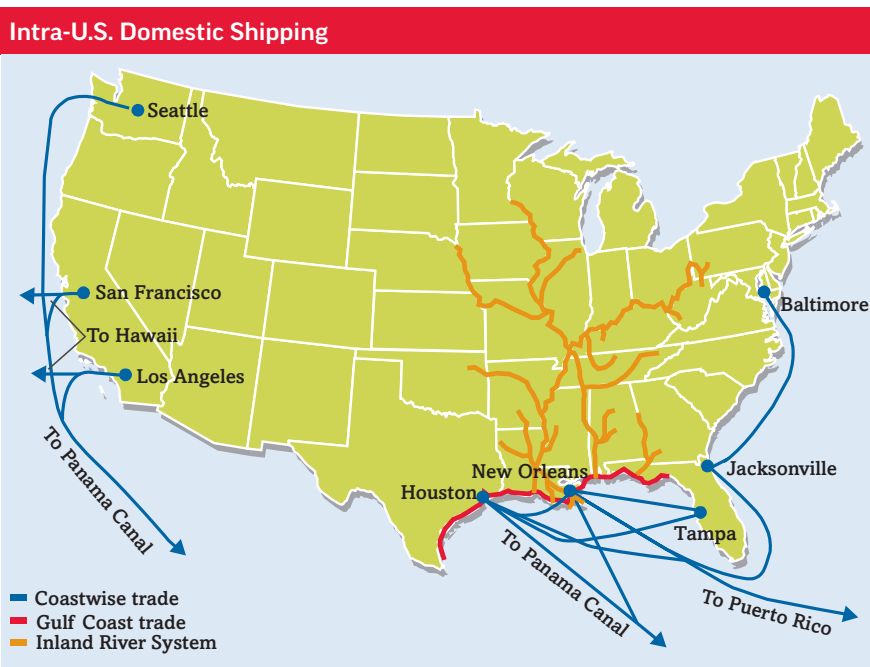
benefit from protections in the Jones Act that exclude competition from foreign-flagged vessels. The Act requires that vessels carrying shipments between U.S. ports be built and registered in the U.S. and crewed by U.S. citizens. In addition, the ownership of the operating company must consist of at least 75% U.S. citizens.

Replacing aging fleets and meeting stricter environmental standards will require significant capital spending over the next five years. For example, about 900 inland barges—about 30% of the U.S. inland barge fleet—are more than 30 years old, already toward the high end of these vessels' estimated useful life of 25 to 35 years. On the container shipping side, Horizon Lines Inc. (not rated), one of the largest container shipping companies operating under the Jones Act, has a fleet of 20 vessels. Within its fleet, the 13 Jones Act-qualified vessels it owns range in age from 30 to 44 years. Another leading operator, Matson Navigation Co. Inc., a subsidiary of Alexander & Baldwin Inc. (both not rated), has in its fleet 17 owned ships, of which seven are more than 30 years old, and an additional five are between 20 and 30 years old.

The average economic useful life of container ships is about 40 years, dry cargo barges 25 to 30 years, and liquid barges 30 to 35 years. That said, the age of a vessel at retirement ultimately depends on its physical condition and the amount of capital its owner is willing to invest in repairs.

Older vessels burn fuel faster and less efficiently. Shippers operating older fleets are at a cost disadvantage and are less profitable than operators with newer and more fuel efficient vessels. Bunker fuel (the type of fuel used in oceangoing vessels) currently costs about \$720 per ton, close to peak prices, compared with an average of about \$630 per ton in December 2011 and a five-year low of \$200 per ton in 2008. Older vessels also may require more underwater surveys and drydocking inspections that are expensive to conduct and put ships out of service temporarily, sometimes up to 30 days, resulting in lost revenue.

In addition, ships operating in U.S. waters have to meet standards for emis-



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U.S. Domestic Shipping Companies

Shipping line	Corporate credit rating	Liquidity assessment
Kirby Corp.	A-/Stable/—	Adequate
Commercial Barge Line Co.	B/Stable/—	Adequate
United Maritime Group LLC	B/Stable/—	Adequate
Marquette Transportation Co. Holdings LLC	B/Stable/—	Adequate
American Petroleum Tankers LLC	B/Stable/—	Adequate
Overseas Shipholding Group Inc.*	B-/Negative/—	Less than adequate

*Overseas Shipholding Group is an international shipping line that also operates in the U.S. domestic shipping market. As of March 20, 2012.

sions and ballast water treatment from various U.S. federal and state agencies, including the U.S. Coast Guard, the U.S. Environmental Protection Agency (EPA), and the California Air Resources Board (CARB). The U.S. Coast Guard will require that all liquid cargo carriers be double-hulled by Dec. 31, 2014. Therefore, shippers of liquid bulk commodity products such as chemicals, crude, and petrochemicals will either have to retrofit their older vessels with double hulls or retire them by that date.

Finding Funding For An Aging U.S. Fleet

U.S.-built ships are expensive. The average replacement cost for a new Jones Act-qualified container ship measuring 4,000 TEUs (20-foot equivalent units) is about \$250 million. A new Jones Act-qualified tanker with a capacity for 50,000 deadweight tons costs north of \$100 million. Barges used on rivers cost much less but are used in greater numbers.

Shipping companies' access to financing and cost of capital depend heavily on their credit quality and capital market conditions. Lower volume and rate pressures (particularly for container shipping companies) along with high bunker fuel costs have weakened the credit profiles of many domestic shipping companies. With credit quality only recently beginning to stabilize, many shipping companies that historically relied on bank loans and public bonds to finance vessel construction may find those traditional sources of funding to be too expensive.

Those with satisfactory credit quality can seek help from government-backed financing programs. U.S.-government-backed ship financing lowers the effective cost to a company of replacing or adding new vessels and can help accelerate the accumulation of capital for such purposes. Shippers can also use the funding to pay existing indebtedness on vessels if it is a part of an overall budgeting program.

For example, the Federal Ship Financing Program (Title XI) provides a credit guarantee by the U.S. government on debt obligations that fund vessel construction in

U.S. shipyards. The Capital Construction Fund (CCF) allows ship owners and operators of U.S.-flagged vessels to defer federal income taxes on deposits saved for future ship construction. The Construction Reserve Fund (CRF) allows eligible U.S.-flag operators to defer gains from the sale or loss of a vessel, provided they use the proceeds to expand or modernize the U.S. merchant fleet. All the programs require that vessels are built in a U.S. shipyard. The CCF restricts vessel operations to intra-U.S. domestic shipping while Title XI allows vessels to operate in international waters.

With credit quality only recently beginning to stabilize, many shipping companies may find traditional sources of funding to be too expensive.

But fewer companies can meet those programs' credit standards. For example, Title XI program participants, after going through the Maritime Administration's (MARAD's) lengthy and rigorous application process, must meet minimum working capital and maximum debt to net worth financial covenant requirements. For example, in February of this year, Overseas Shipholding Group (OSG) withdrew its application for \$241.8 million in Title XI guaranteed financing after MARAD said it wouldn't approve OSG's application as submitted. The requested loan guarantees were for two mortgage-free shuttle tankers, for which OSG has already paid in full, built in 2010 and 2011. Had the financing been approved, we believe interest rates would have been less than 4%, well below market rates, and it would have helped enhance OSG's liquidity and financial flexibility.

Even after companies have cleared MARAD's credit hurdles, access to its government-guaranteed financing programs is not as straightforward as it used to be because of budget cuts. Furthermore, future congressional support for the program is uncertain given

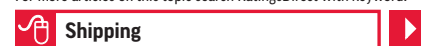
the history of loan defaults and losses to the government. During 2011, MARAD approved Title XI loan guarantees for 10 vessels, with a total commitment amount of \$797.8 million, including \$210.8 million of loan guarantees on OSG's two articulated tug barges (which use mechanical barge connectors). As of Feb. 17, 2012, MARAD had pending applications for loan guarantees on 16 vessels, with a requested loan amount of \$995.7 million. Included in the pending applicant pool is American Petroleum Tankers Parent LLC (the parent of American Petroleum Tankers LLC;

B-/Stable/—), which has applications for loan guarantees on five vessels and a requested loan amount of \$470 million.

Credit Quality Keeps Sinking

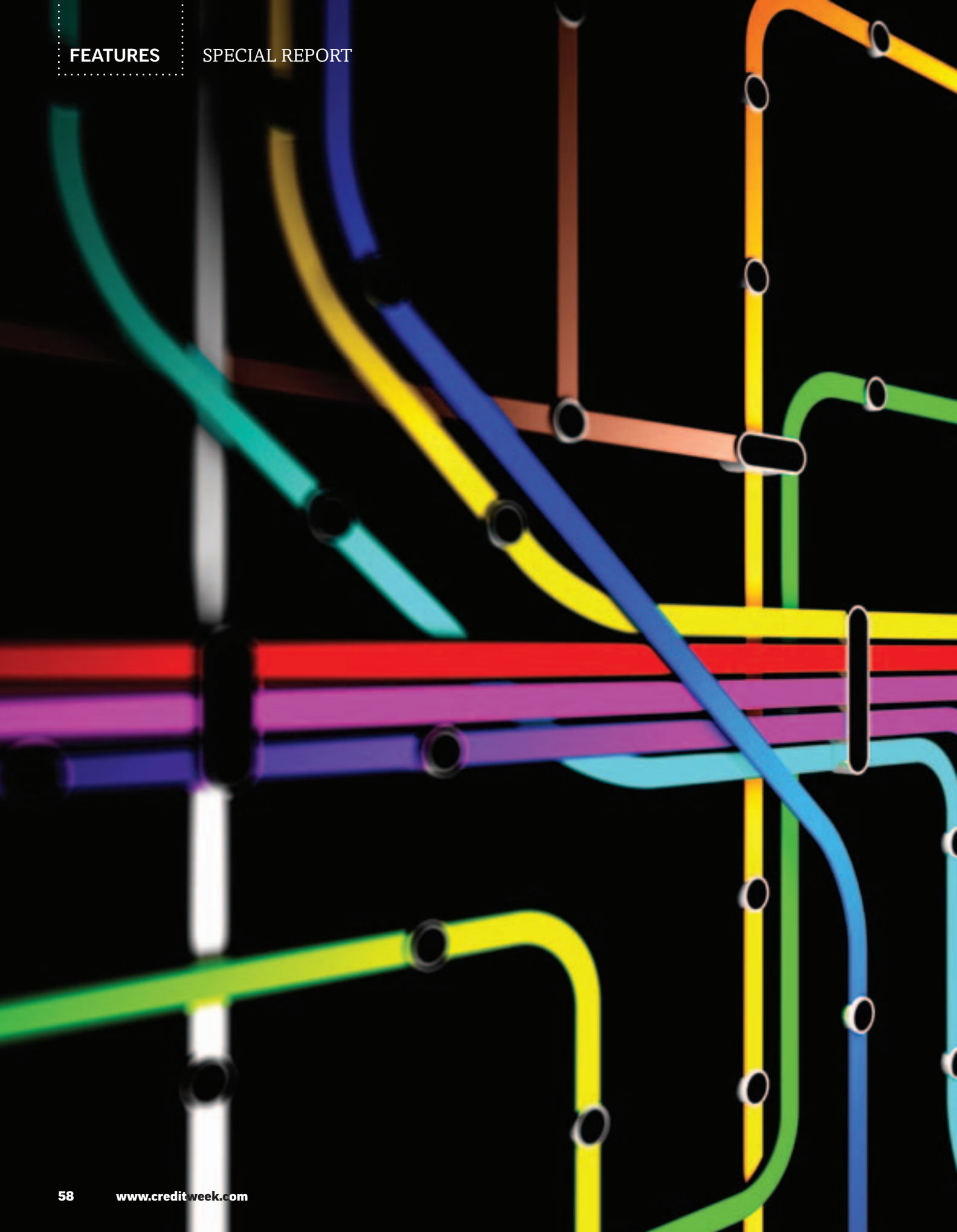
We believe that capital spending for fleet replacement will be a big concern for the U.S. domestic shipping industry. Weak credit quality, challenging capital market conditions, and reduced access to government-guaranteed loans likely will increase the cost of funding new vessels and retrofitting old ones to meet upcoming environmental regulations. Companies at the lower end of the speculative-grade spectrum—(particularly those we rate in the 'B' category or below)—are both the most likely to face steep financing costs and the least equipped to deal with these high costs. Ultimately, how quickly U.S. domestic shipping companies are able to replace retired vessels and how they finance fleet replacement will be the keys to their wellbeing. **CW**

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Infrastructure Spending Keeps Rails And Trucks Moving In The U.S.

The railroad industry plans to deploy significant cash flow to improve infrastructure this year. Standard & Poor's Ratings Services expects the railroad sector to spend roughly \$13 billion of private capital in 2012. Spending on track and facility updates will continue to account for a substantial portion of capital investments. But some likely will go toward upgrading tracks and tunnels to support intermodal transportation, which integrates multiple freight modes. For example, shippers may use rail carriers' "container-on-flatcar" services, with over-the-road trucking companies picking up and delivering the goods at the origin and destination rail terminal locations.

We believe that better rail service and new intermodal service offerings have resulted in conversions from long-haul trucking to intermodal service that uses railroads for a large portion of the total move, particularly for domestic freight moves (in contrast with international imports carried in marine cargo containers). In addition, trucking capacity is shrinking because of stricter safety requirements—which will affect primarily small and midsize carriers—so shippers may turn to railroads to carry cargo containers for segments of lengthier journeys.

Rail Infrastructure Gets Refreshed

We believe that U.S. railroads will continue to reinvest cash flow from operations to fund ongoing maintenance, expansion projects, regulatory mandates, and technological improvements. In 2008, Congress enacted the Rail Safety Improvement Act, which requires all Class I freight railroads to install positive train control (PTC) technology by the end of 2015, although we believe the deadline may be extended. PTC is designed to help trains avoid collision by overriding locomotive controls to stop a

As the trucking industry's capacity continues to tighten, we expect intermodal service and pricing to improve in 2012.

train before an accident occurs. The federal mandate stipulates that the railroads install PTC on all main passenger and commuter lines, as well as on trains transporting toxic-by-inhalation hazardous materials. We expect PTC expenditures to represent about 10% of planned capital spending for the Class I rails over the next few years.

In addition to private capital investment by railroads, public-private partnerships fund infrastructure improvements through a combination of grants, subsidies, and tax breaks from local or federal governments. For example, Norfolk Southern received a federal grant through the Transportation Investment Generating Economic Recovery (TIGER) program for its recently completed Crescent Corridor project to create truck-competitive service between the Northeast and Southeast. Through the National Gateway project, CSX Corp. is improving U.S. rail connections between ports on the mid-Atlantic seaboard and the Midwest by upgrading bridges and tunnels to allow taller freight trains to accommodate double-stacked intermodal containers. We expect this project, which has received commitments for both private and public funding, to cost more than \$800 million.

Investment in terminal expansion, upgrading bridges, and equipping tracks for double-stacked intermodal transport (in which railcars carry containers stacked on top) has grown significantly over the past few years due to increasing infrastructure needs to support freight conversion from truck to railroad. We expect domestic intermodal business to continue to expand, given certain advantages of rail relative to trucking, specifically its cost advantage, lower fuel consumption, and smaller environmental impact.

Trucking Rolls On Despite Lower Capital Spending

Large truckload (TL) carriers, in contrast, have been cautious in their capital spending, primarily replacing trucks as needed to maintain the current age of their fleets. In addition, the recent Compliance Safety and Accountability Program requirements, which mandate more-stringent regulations and operating guidelines from the Federal Motor Carrier Safety Administration, have constrained capacity by limiting the pool of eligible truck drivers. The regulations identify seven categories that have a bearing on safety: safety of driving, drivers' hours behind the wheel, fitness, and use of controlled substances and alcohol, vehicle maintenance, proper handling of cargo and hazardous materials, and frequency/severity of crashes. We expect these regulations to primarily hurt small- to medium-size TL carriers, who may face additional costs to comply with these new rules.

We expect trucks to continue to move a large majority of commercial freight in the U.S. The shift to intermodal transport is mostly for medium- and long-haul moves. Nonetheless, railroads are increasingly considered a fuel-efficient alternative to trucking and an effective means of reducing highway congestion. And as the trucking industry's capacity continues to tighten, we expect intermodal service and pricing to improve in 2012. **cw**

For more articles on this topic search RatingsDirect with keyword:



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Standard & Poor's Approach To Analyzing U.S. Department Of Transportation TIFIA Debt Instruments

The U.S. Transportation Infrastructure Finance and Innovation Act (TIFIA) loan program has been successful in providing federal funds to state, local, and private entities to invest in U.S. surface transportation infrastructure. Since 1998, when it was created by the Department of Transportation (DOT), the TIFIA program has originated 26 loans totaling \$8.6 billion that has ultimately led to \$33 billion in public and private infrastructure investment. So far, six of these loans have been successfully repaid.

The TIFIA program has been working increasingly with private sponsors to help bring equity and expertise to project development, construction, and operations as more states and regional governments adopt the public-private partnership model to finance infrastructure projects. As these private investments seek ratings on the large amounts of debt used to construct or acquire and rehabilitate infrastructure assets, sponsors and investors have been asking how Standard & Poor's Ratings Services factors TIFIA loans into its credit analyses of these projects.

Q. *What are the key features of a TIFIA loan?*

A. Under the TIFIA program, a project can apply for a federal loan, guarantee, or letter of credit. All projects except one thus far have been granted loans. The instrument selected may fund up to 33% of the total project costs and is repaid using the same revenues that are pledged to senior lenders, typically from user charges such as toll revenues or other non-federal revenues. TIFIA principal and interest payments are fixed at the closing of the loan and are designated as either "mandatory"



or “scheduled.” The loan payments are subordinate to senior lenders in the cash waterfall as long as a bankruptcy-related event (BRE) does not exist.

A BRE would occur if the following two incidents take place: First, the project misses two consecutive TIFIA mandatory debt-service payments, and second, the TIFIA lender files for bankruptcy relief for the project or TIFIA simply requests a BRE and the senior lenders do not object. We consider a project’s bankruptcy filing to be a default under our criteria. In addition, a project in the construction phase could trigger a BRE by missing the scheduled final project completion. If a BRE is triggered, the TIFIA loan elevates in rank equal with senior lenders and, according to the terms of the senior obligations, may cross-default the senior obligations.

Although missing two consecutive mandatory payments may trigger a BRE, missing the scheduled payment does not trigger a BRE and would result in all excess cash after payment of debt being applied to repay missed payments due under the TIFIA loan. In this case, payments to subordinated debt and equity holders are prohibited until the missed scheduled payments are fully paid and current. The scheduled payments are made from excess cash after payments of the project operations, senior debt, and mandatory TIFIA payments. Any unpaid interest accrues, increasing the loan balance.

Q. *How are TIFIA loans structured?*

A. TIFIA loan payments can be:

- Prepaid without penalty;
- Structured with deferrable principal and interest payments—The scheduled payments can be deferred without triggering an event of default, which is similar to payment-in-kind debt (PIK) used by corporate issuers. With PIK instruments, debt-service payments can be deferred during stressful periods, and deferred amounts accrete and are repaid in a later period; or
- Structured with a back-loaded amortization schedule. The project must begin making interest payments on

the TIFIA loan within five years after substantial completion, and principal payments within 10 years after substantial completion. However, the DOT can negotiate an amortization schedule to meet the needs of the project. We view this amortization profile as subordinate to senior debt in that principal repayment occurs after the senior obligations begin amortization. In addition, the TIFIA loan typically matures after the senior debt.

The goal of these provisions is to allow lenders adequate time to salvage a troubled situation without postponing indefinitely the U.S. government’s right to enforce its claim as required under statute. SR-125, a toll road in San Diego, illustrates how a BRE event resulted in the TIFIA loan’s becoming *pari passu* with senior lenders. The road opened in 2007 and underperformed initial projections by more than 30%. The BRE was triggered when the project filed for bankruptcy on March 22, 2010, because of substantial claims by the contractor and the costly litigation surrounding them. The project did not miss any TIFIA debt-service payments because loan repayments were not scheduled to begin until 2012. The project emerged from bankruptcy in 2011, and TIFIA restructured its loan and remains part of the capital structure.

The TIFIA statute requires the project’s senior lien to have an investment-grade credit rating from one Nationally Recognized Statistical Rating Organization (NRSRO) identified by the Securities and Exchange Commission and a rating on the TIFIA debt instrument itself. The government uses the TIFIA debt rating to assess the loan risk and allocate the initial capital to fund potential losses. The statute also requires that all ratings be updated annually to reflect reassessments of required capital reserves and updated loss expectations.

The TIFIA loan agreement typically includes financial covenants that we factor into our ratings on the project’s senior debt and TIFIA debt. These financial covenants may include a debt-service coverage ratio, a rate covenant, and/or a loan-life coverage ratio.

Q. *Is there a difference in your rating approach for public and private sponsors?*

A. Yes. Our view of the TIFIA loan structure will be influenced by whether the project sponsor is a public or private entity, which we consider to have different default risks that are addressed in the relevant sector-specific criteria. Ultimately, the different risk profiles may result in different rating outcomes.

The major differences between public and private ownership are the following:

- Bankruptcy filing—Private companies can file their wholly owned subsidiaries, but in most cases, public entities cannot and are considered primarily ongoing entities; and
- Use of cash—Public entities generally retain higher liquidity and use available cash for major and minor capital expenses. Although most cash is retained in governmental accounts and is not transferred out of the entity, some authorities have policies that allow them to transfer excess cash to fund other governmental activities. Privately owned projects distribute excess cash to the project sponsor, and the project or lenders do not benefit from the excess liquidity.

Q. *Does Standard & Poor's view the TIFIA loan as senior or subordinate debt?*

A. We believe a TIFIA loan instrument has characteristics of both senior and subordinate debt. It has default characteristics that affect the cash flow and default risk of senior debt because a BRE event triggers a cross-default to the senior obligations. At the same time, we recognize that the TIFIA loan is subordinated in that it is paid from residual cash only after the senior debt has been fully serviced and, as a result, has a different likelihood of default from the senior debt. Unlike typical subordinate debt that will not cause a default, the senior debt may default after two mandatory TIFIA payments are missed. Therefore, we assess the entity's ability to both repay the senior debt and meet the TIFIA mandatory payments when we

rate the senior debt. Our issue ratings reflect these differences in the risk profiles for the senior obligations and the TIFIA loan instrument.

Q. *How do you assess the non-subordination clause, or "springing lien," in the issue rating?*

A. Our debt issue rating on a project reflects our assessment of the project's ability to repay its debt obligations according to the scheduled repayment terms. The rating does not reflect recovery prospects in a likely default scenario. We consider the TIFIA loan's ability to "spring" to parity with the senior debt after a BRE to the extent that it may trigger a cross-default to the senior obligations. In addition, the non-subordination clause would affect our recovery ratings because we consider the likelihood under our base and stress cases of the project's missing two mandatory TIFIA loan payments.

We believe a TIFIA loan instrument has characteristics of both senior and subordinate debt.

In project finance, each debt instrument in the capital structure is assigned separate recovery ratings that express our opinion of the lender's recovery prospects in the event of a default. We assign recovery ratings only on projects with non-investment-grade issuer ratings. We develop a hypothetical but most likely default scenario, gauge how much cash flow the project might earn after default, and then compare this amount to the debt and administrative costs. The amount of debt would include the senior debt and TIFIA instrument debt outstanding plus unpaid interest expense. This practice is in contrast to public finance projects, in which we assume the governmental agency has a perpetual life; consequently, we do not assign separate recovery ratings on public finance debt.

Q. *Can the senior debt and TIFIA instrument have different ratings?*

A. Yes, the ratings can vary based on the subordinate payment priority, specific features of each project, and lender protections. Liquidity available for temporary disruptions in cash flow, limitations on additional indebtedness, and the project's ability to withstand downside scenarios at stress points can result in different ratings on the two issues.

We consider the cash flow certainty during different periods in the project's life, such as during start-up, stabilization, and when handed back to the governmental entity. Each phase has unique risk profiles and will be sensitive to different factors, such as life cycle costs, major maintenance cycles, inflation, and user rate changes. We may differentiate the issue ratings based on the differences in cash flow volatility for each debt class. For example, the TIFIA instrument typically matures after the senior debt and

may face higher credit risk, especially during the hand-back period when the cash flow forecast is most uncertain, as well as greater project obligations, such as major maintenance and TIFIA principal payments. These differences may contribute to the TIFIA instrument's being rated lower than the senior debt.

We measure liquidity by the funded reserves available for the project (for debt service, major maintenance, and operating reserves), the amount available for each debt issue, and the project's ability to regenerate liquidity. One way for a project to regenerate cash is to retain excess net revenues if it is underperforming based on the terms of the distribution test. The distribution test, or dividend blocker, for a project with a TIFIA loan instrument comes after the senior

debt service and TIFIA loan payments in the flow of funds, allowing TIFIA to share equally any excess cash flow with senior lenders. The distribution test enables both instruments to benefit and improves liquidity for the TIFIA loan despite it being subordinated in the cash flow of funds. The placement of the distribution test is unusual compared with typical project financings, which generally trap excess cash solely for the benefit of senior rather than subordinate lenders. However, any difference in the funded reserves available for senior debt and TIFIA instruments may lead to a lower rating.

If the TIFIA lien and senior debt have different limitations on additional debt, we would consider the intercreditor agreement as the guiding document to determine which conditions must be satisfied for any additional debt to be issued. For example, because the TIFIA debt remains in the structure longer than the senior debt, the former may allow provisions for changes in the capital structure, such as restructuring hybrid capital structures (term loans with bullet maturities and fully amortizing long-term debt) after the senior debt is fully repaid. Our analysis incorporates our base case and likely stress cases, which may include additional debt permitted under these limitations. If the TIFIA lien has more permissive provisions, we may assign it a lower issue rating to reflect these additional risks.

Q. *Do TIFIA's flexible repayment terms help the project's credit profile?*

A. The repayment structure provides the project with flexibility to defer scheduled loan payments in favor of repaying senior debt, if needed; mandatory payments cannot be deferred. We view this feature as positive in the short term because it can provide relief to offset a temporary disruption in project cash flow or a slow project ramp-up. However, this deferral mechanism can result in significantly increased debt and credit risks if the deferral period is prolonged, adding additional stress to the middle and later years of a project, when cash flow forecasts are less certain and the project's economic value is lower.

Q. *Do TIFIA's financial covenants provide any credit benefit to the project or senior debt?*

A. TIFIA loan documents typically include limitations on additional debt and may include rate covenants and loan-life coverage ratios. The ability of these covenants to provide credit support depends on the project's specific business and financial risks as well as the covenant terms. In general, these covenants are often computed over the project's life. Projects that use only forecasted or only historical revenues in the calculation we view as weaker than those that use both historical and projected revenues. As with any project, limitations on additional debt define the conditions whereby project obligations can be increased and allow us to consider the likelihood and consequences of the project's taking on such additional debt. We consider this in our base and stress cases.

Rate covenants require the project to set rates and charges that will be sufficient to cover operating and fixed obligations from current revenues by a margin specified in the lender agreements. Violating a rate covenant may require the project to develop a plan to improve cash flow, but the tools available to do so may be limited, especially if the financial stress was caused by factors outside of the project's control, such as a regional recession or high gas prices.

A loan-life coverage ratio measures ultimate recovery and determines whether future project revenues will be sufficient to repay the TIFIA loan balance. Tripping one of these covenants is an early warning sign. However, if the project is not meeting its covenants, we have likely already lowered our ratings on the debt issues. **CW**

For more articles on this topic search RatingsDirect with keyword:

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RATINGS TRENDS

Standard & Poor's Fixed Income Research

The first three pages of this section display data compiled by Standard & Poor's Global Fixed Income Research, provider of analytical and timely information on Standard & Poor's rating actions, new issuance activity, and secondary market yield spreads.

- Rating actions are tracked and analyzed. Credit trends are followed daily across seven broad industry sectors and numerous subsectors.
- New-issuance volume and pricing trends in the primary market for both investment grade and high-yield bonds in the corporate-industrial sector, telecommunication, utility, yankee, banking and financial institutions/insurance are analyzed.
- Secondary market yields and spreads for investment-grade and high yield corporate bonds are tracked and analyzed.

For additional information, contact Diane Vazza, managing director of Global Fixed Income Research at Standard & Poor's.

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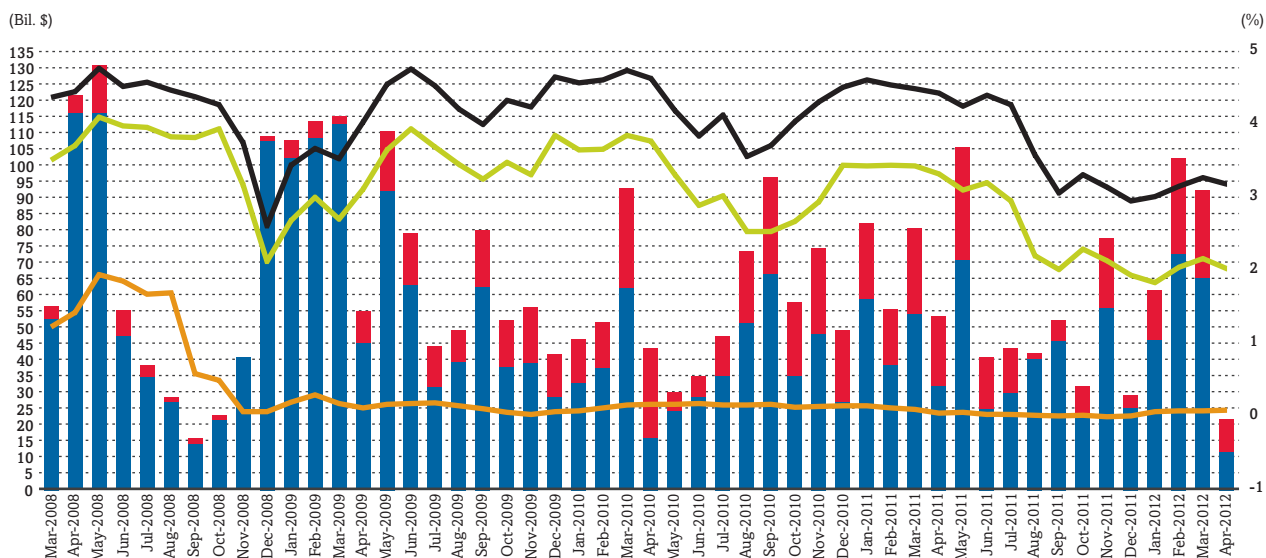
Rating Actions

Sector	Action	-This Week-		-YTD 2012-	
		No.	Mil. \$	No.	Mil. \$
Industrial	Upgrade	5	20,535	76	132,630
	Downgrade	2	950	60	80,889
Telecommunications	Upgrade	0	0	2	4,225
	Downgrade	0	0	2	1,499
Utility	Upgrade	1	3,936	6	41,911
	Downgrade	1	2,010	5	11,190
Banking	Upgrade	0	0	2	9,110
	Downgrade	0	0	1	200
Financial Institutions/Insurance	Upgrade	1	475	1	475
	Downgrade	0	0	6	9,207
Sovereign	Upgrade	0	0	1	9,184
	Downgrade	0	0	15	1,735,527
International	Upgrade	2	5,770	39	169,065
	Downgrade	3	3,989	110	1,392,345

Data as of April 11, 2012. The rating action data are for issuer credit ratings. International includes all sectors outside the U.S.
Source: Standard & Poor's Global Fixed Income Research.

Corporate Issuance Volume And Treasury Yields

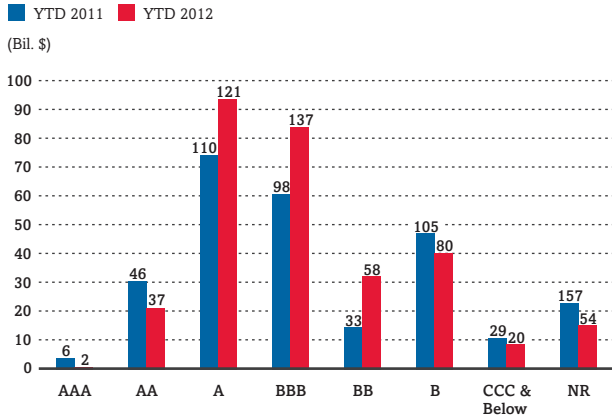
Investment grade High yield 3-month T-bill 10-year Treasury 30-year Treasury



Includes all public and Rule 144a issuance of straight debt, convertible debt, floating-rate notes, and medium-term notes by financial and nonfinancial entities into the U.S. market.
Sources: Standard & Poor's Global Fixed Income Research, Thomson Financial.

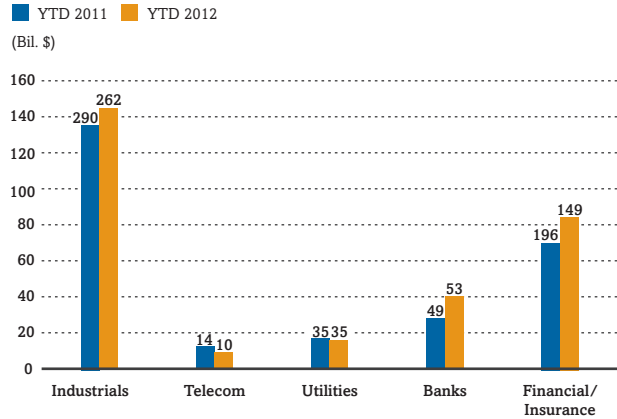
Number Of New Issues And Dollar Volume

By Rating Category



Includes all public and Rule 144a issuance of straight debt, convertible debt, floating-rate notes, and medium-term notes by financial and nonfinancial entities into the U.S. market.
Sources: Standard & Poor's Global Fixed Income Research, Thomson Financial.

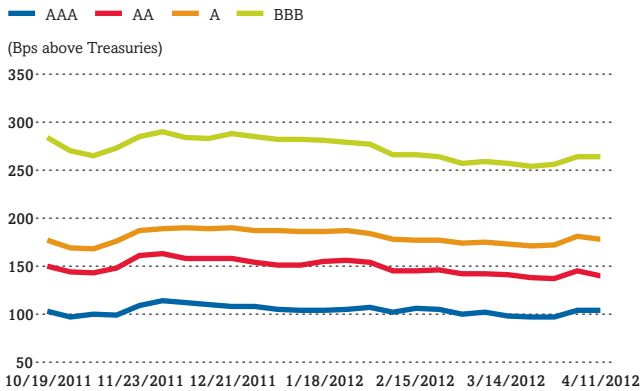
By Sector



Includes all public and Rule 144a issuance of straight debt, convertible debt, floating-rate notes, and medium-term notes by financial and nonfinancial entities into the U.S. market.
Sources: Standard & Poor's Global Fixed Income Research, Thomson Financial.

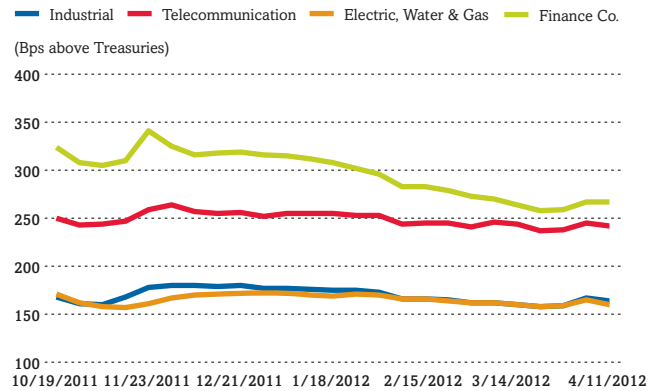
Spread To Treasuries By Rating Category

U.S. Industrial Credit Trends By Rating Category



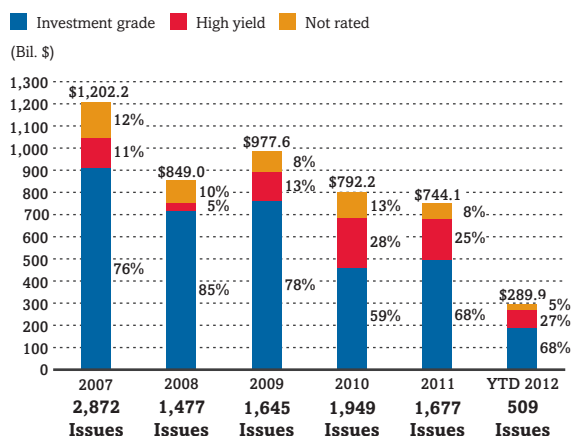
Includes Yankee bond issues. Nine plus years to maturity and minimum \$100 million outstanding.
Source: Standard & Poor's Global Fixed Income Research.

Sector Relative Value Rating Category 'A'



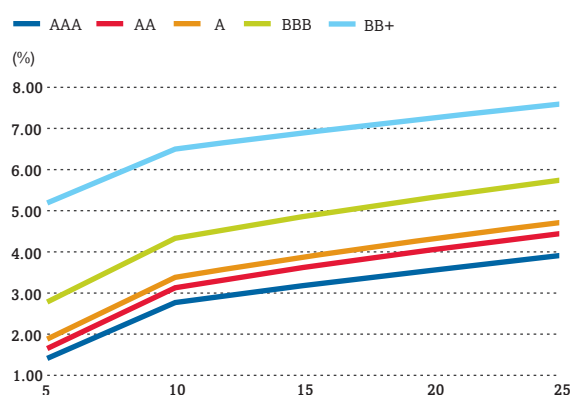
Five plus years to maturity and minimum \$100 million outstanding.
Source: Standard & Poor's Global Fixed Income Research.

U.S. Corporate Bond Issuance



Includes all public and Rule 144a issuance of straight debt, convertible debt, floating-rate notes, and medium-term notes by financial and nonfinancial entities into the U.S. market.
Sources: Standard & Poor's Global Fixed Income Research, Thomson Financial.

U.S. Industrial Bond Yields



Data as of April 11, 2012.
Source: Standard & Poor's Global Fixed Income Research.

Macroeconomic Data From Global Insight

Global Insight is a leading provider of financial and economic information used by industry, government, and financial institutions to assess business conditions and monitor emerging trends.

For additional information on Global Insight products and services, call Michael Minor (1) 212-884-9511.

Wholesale Price Inflation (% Change-1 Yr.)

	Jan-2012	Dec-2011	Nov-2011
U.S.	1.93	1.92	1.91
U.K.	1.27	1.26	1.26
Germany	1.18	1.17	1.17
Japan	1.04	1.04	1.04

Data presented as monthly averages.
Source: Global Insight.

Long-Term Bond Rates (%)

	This week	One week ago	One year ago
U.S.	2.05	2.21	3.51
U.K.	2.09	2.26	3.68
Germany	1.72	1.90	3.49
Japan	0.97	1.01	1.32

Data presented as weekly averages. Germany is current yield. Other data are yield to maturity. Source: Global Insight.
Data for German short-term bond rates have been discontinued.

Short-Term Interest Rates (%)

	This week	One week ago	One year ago
U.S.	0.46	0.46	0.26
U.K.	0.89	0.91	0.72
Japan	0.15	0.15	0.15

Standard & Poor's Rated U.S. Money Fund Indices

	7-Day net yield (%)	30-Day net yield (%)	7-Day gross yield (%)	30-Day gross yield (%)	Maturity (days)	Total assets (bil. \$)
Money Fund Indices (Period ended 4/10/2012)						
'AAAm'/Government	0.01	0.01	N.A.	N.A.	44	N.A.
'AAAm'/Taxable	0.03	0.03	N.A.	N.A.	44	N.A.
'AAAm'/Tax-Free	0.02	0.02	N.A.	N.A.	26	N.A.
Government Investment Pool (GIP) Indices* (Period ended 4/6/2012)						
GIP Index/All	0.10	0.10	0.23	0.23	45	71.0
GIP Index/Government	0.06	0.06	0.15	0.16	45	68.0
GIP Index/General Purpose Taxable	0.12	0.12	0.26	0.26	44	71.0

*Comprised of 'AAAm' and 'AAm' rated government investment pools. N.A.—Not available. Sources: Standard & Poor's; Rated Money Fund Report, a service of iMoneyNet, Inc.

Sovereign Ratings And Country T&C Assessments

Standard & Poor's Ratings Services currently rates 128 sovereign governments and has established transfer and convertibility (T&C) assessments for each country with a rated sovereign, as shown in the table below. A T&C assessment is the rating associated with the likelihood of the sovereign restricting nonsovereign access to foreign exchange needed for debt service. For most countries, Standard & Poor's analysis concludes that this risk is less than the risk of sovereign default on foreign-currency obligations; thus, most T&C assessments exceed the sovereign foreign currency rating. Foreign currency ratings of nonsovereign entities or transactions generally can be as high as the T&C assessment if their stress-tested operating and financial characteristics support the higher rating. For more information, please see "Corporate And Government Ratings That Exceed The Sovereign Rating," published monthly on *RatingsDirect*.

If a sovereign, through membership in a monetary or currency union, has ceded monetary and exchange rate policy responsibility to a monetary authority that the sovereign does not solely

control, the T&C assessment reflects the policies of the controlling monetary authority, vis-à-vis the exchange of its currency for other currencies in the context of debt service. The same applies if a sovereign uses as its local currency the currency of another sovereign. A T&C assessment may change sharply if a sovereign introduces a new local currency, by entering or exiting a monetary/currency union, or through some other means. This is because the new local currency, and in some cases the new monetary authority, may operate in very different monetary and exchange regimes. The T&C assessment does not normally reflect the likelihood of change in a country's local currency.

Also included below are recovery ratings for selected sovereigns. Standard & Poor's sovereign foreign-currency recovery ratings reflect its opinion on the extent to which a sovereign government will be able and willing to repay nonofficial foreign-currency debtholders post-default. For historical information on all of these ratings and assessments, please see "Sovereign Rating And Country T&C Assessment Histories," published monthly on *RatingsDirect*. Ratings as of April 6, 2012. **CW**

COUNTRY	-SOVEREIGN RATINGS (LT/OUTLOOK/ST)-		SOVEREIGN FOREIGN CURRENCY RECOVERY RATING	TRANSFER & CONVERTIBILITY ASSESSMENT
	LOCAL CURRENCY	FOREIGN CURRENCY		
Abu Dhabi	AA/Stable/A-1+	AA/Stable/A-1+		AA+*
Albania	B+/Stable/B	B+/Stable/B	4	BB-
Andorra	A/Negative/A-1	A/Negative/A-1		AAA*
Angola	BB-/Stable/B	BB-/Stable/B		BB-
Argentina	B/Stable/B	B/Stable/B		B
Aruba	A-/Stable/A-2	A-/Stable/A-2		A-
Australia	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Austria	AA+/Negative/A-1+	AA+/Negative/A-1+		AAA*
Azerbaijan	BBB-/Stable/A-3	BBB-/Stable/A-3		BBB-
Bahamas	BBB/Stable/A-3	BBB/Stable/A-3		BBB+
Bahrain	BBB/Negative/A-3	BBB/Negative/A-3		BBB
Bangladesh	BB-/Stable/B	BB-/Stable/B		BB-
Barbados	BBB-/Negative/A-3	BBB-/Negative/A-3		BBB
Belarus	B-/Negative/C	B-/Negative/C	4	B-
Belgium	AA/Negative/A-1+	AA/Negative/A-1+		AAA*
Belize	CCC+/Stable/C	CCC-/Negative/C	4	B-
Benin	B/Stable/B	B/Stable/B		BBB-*
Bermuda	AA-/Stable/A-1+	AA-/Stable/A-1+		AAA
Bolivia	B+/Positive/B	B+/Positive/B		B+
Bosnia and Herzegovina	B/Stable/B	B/Stable/B		BB-
Botswana	A-/Stable/A-2	A-/Stable/A-2		A+
Brazil	A-/Stable/A-2	BBB/Stable/A-3		A-

COUNTRY	-SOVEREIGN RATINGS (LT/OUTLOOK/ST)-		SOVEREIGN FOREIGN CURRENCY RECOVERY RATING	TRANSFER & CONVERTIBILITY ASSESSMENT
	LOCAL CURRENCY	FOREIGN CURRENCY		
Bulgaria	BBB/Stable/A-3	BBB/Stable/A-3		A
Burkina Faso	B/Stable/B	B/Stable/B		BBB-*
Cambodia	B/Stable/B	B/Stable/B		B+
Cameroon	B/Stable/B	B/Stable/B		BBB-*
Canada	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Cape Verde	B+/Stable/B	B+/Stable/B		BB
Chile	AA/Positive/A-1+	A+/Positive/A-1		AA
China	AA-/Stable/A-1+	AA-/Stable/A-1+		AA-
Colombia	BBB+/Stable/A-2	BBB-/Stable/A-3		BBB+
Cook Islands	B+/Stable/B	B+/Stable/B		AAA*
Costa Rica	BB/Stable/B	BB/Stable/B	2	BBB-
Croatia	BBB-/Negative/A-3	BBB-/Negative/A-3		BBB+
Curacao	A-/Stable/A-2	A-/Stable/A-2		A-
Cyprus	BB+/Negative/B	BB+/Negative/B	4	AAA*
Czech Republic	AA/Stable/A-1+	AA-/Stable/A-1+		AA+
Denmark	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Dominican Republic	B+/Stable/B	B+/Stable/B	3	BB
Ecuador	B-/Positive/C	B-/Positive/C	4	B-
Egypt	B/Negative/B	B/Negative/B	3	B
El Salvador	BB-/Stable/B	BB-/Stable/B	3	AAA*
Estonia	AA-/Negative/A-1+	AA-/Negative/A-1+		AAA*
Fiji	B/Stable/B	B/Stable/B	4	B
Finland	AAA/Negative/A-1+	AAA/Negative/A-1+		AAA*
France	AA+/Negative/A-1+	AA+/Negative/A-1+		AAA*
Gabon	BB-/Stable/B	BB-/Stable/B	4	BBB-*
Georgia	BB-/Stable/B	BB-/Stable/B	4	BB
Germany	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA*
Ghana	B/Stable/B	B/Stable/B	4	B+
Greece	SD	SD	4	AAA*
Grenada	B-/Stable/C	B-/Stable/C	4	BBB-*
Guatemala	BB+/Negative/B	BB/Negative/B	3	BBB-
Guernsey	AA+/Stable/A-1+	AA+/Stable/A-1+		AAA*
Honduras	B/Positive/B	B/Positive/B		BB-
Hong Kong	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Hungary	BB+/Negative/B	BB+/Negative/B	3	BBB
Iceland	BBB-/Stable/A-3	BBB-/Stable/A-3		BBB-
India	BBB-/Stable/A-3	BBB-/Stable/A-3		BBB+
Indonesia	BB+/Positive/B	BB+/Positive/B	3	BBB-
Ireland	BBB+/Negative/A-2	BBB+/Negative/A-2		AAA*
Isle of Man	AA+/Stable/A-1+	AA+/Stable/A-1+		AAA*

**SOVEREIGN
LIST**

COUNTRY	-SOVEREIGN RATINGS (LT/OUTLOOK/ST)-		SOVEREIGN FOREIGN CURRENCY RECOVERY RATING	TRANSFER & CONVERTIBILITY ASSESSMENT
	LOCAL CURRENCY	FOREIGN CURRENCY		
Israel	AA-/Stable/A-1+	A+/Stable/A-1		AA
Italy	BBB+/Negative/A-2	BBB+/Negative/A-2		AAA*
Jamaica	B-/Negative/C	B-/Negative/C	3	B
Japan	AA-/Negative/A-1+	AA-/Negative/A-1+		AAA
Jordan	BB/Negative/B	BB/Negative/B		BBB-
Kazakhstan	BBB+/Stable/A-2	BBB+/Stable/A-2		BBB+
Kenya	B+/Stable/B	B+/Stable/B		BB-
Korea	A+/Stable/A-1	A/Stable/A-1		AA-
Kuwait	AA/Stable/A-1+	AA/Stable/A-1+		AA+
Latvia	BB+/Positive/B	BB+/Positive/B	3	BBB+
Lebanon	B/Stable/B	B/Stable/B	4	BB-
Libya	NR	NR		
Liechtenstein	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA*
Lithuania	BBB/Stable/A-3	BBB/Stable/A-3		A
Luxembourg	AAA/Negative/A-1+	AAA/Negative/A-1+		AAA*
Macedonia	BB/Stable/B	BB/Stable/B	3	BB+
Malaysia	A/Stable/A-1	A-/Stable/A-2		A+
Malta	A-/Negative/A-2	A-/Negative/A-2		AAA*
Mexico	A-/Stable/A-2	BBB/Stable/A-3		A
Mongolia	BB-/Positive/B	BB-/Positive/B		BB
Montenegro	BB/Negative/B	BB/Negative/B		AAA*
Montserrat	BBB-/Stable/A-3	BBB-/Stable/A-3		BBB-*
Morocco	BBB/Stable/A-2	BBB-/Stable/A-3		BBB+
Mozambique	B+/Stable/B	B+/Stable/B		B+
Netherlands	AAA/Negative/A-1+	AAA/Negative/A-1+		AAA*
New Zealand	AA+/Stable/A-1+	AA/Stable/A-1+		AAA
Nigeria	B+/Positive/B	B+/Positive/B		B+
Norway	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Oman	A/Negative/A-1	A/Negative/A-1		AA-
Pakistan	B-/Stable/C	B-/Stable/C	3	B-
Panama	BBB-/Positive/A-3	BBB-/Positive/A-3		AAA*
Papua New Guinea	B+/Negative/B	B+/Negative/B		BB
Paraguay	BB-/Stable/B	BB-/Stable/B		BB
Peru	BBB+/Stable/A-2	BBB/Stable/A-3		A-
Philippines	BB+/Positive/B	BB/Positive/B	3	BB+
Poland	A/Stable/A-1	A-/Stable/A-2		A+
Portugal	BB/Negative/B	BB/Negative/B	4	AAA*
Qatar	AA/Stable/A-1+	AA/Stable/A-1+		AA+
Ras Al Khaimah	A/Stable/A-1	A/Stable/A-1		AA+*
Romania	BB+/Stable/B	BB+/Stable/B	3	BBB+

COUNTRY	-SOVEREIGN RATINGS (LT/OUTLOOK/ST)-		SOVEREIGN FOREIGN CURRENCY RECOVERY RATING	TRANSFER & CONVERTIBILITY ASSESSMENT
	LOCAL CURRENCY	FOREIGN CURRENCY		
Russia	BBB+/Stable/A-2	BBB/Stable/A-3		BBB
Rwanda	B/Positive/B	B/Positive/B		B
Saudi Arabia	AA-/Stable/A-1+	AA-/Stable/A-1+		AA+
Senegal	B+/Negative/B	B+/Negative/B	4	BBB-*
Serbia	BB/Stable/B	BB/Stable/B	4	BB
Singapore	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Slovak Republic	A/Stable/A-1	A/Stable/A-1		AAA*
Slovenia	A+/Negative/A-1	A+/Negative/A-1		AAA*
South Africa	A/Negative/A-1	BBB+/Negative/A-2		A
Spain	A/Negative/A-1	A/Negative/A-1		AAA*
Sri Lanka	B+/Stable/B	B+/Stable/B	4	B+
Suriname	BB-/Stable/B	BB-/Stable/B		BB
Sweden	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Switzerland	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
Taiwan	AA-/Stable/A-1+	AA-/Stable/A-1+		AA+
Thailand	A-/Stable/A-2	BBB+/Stable/A-2		A
Trinidad and Tobago	A/Stable/A-1	A/Stable/A-1		AA
Tunisia	BBB/Negative/A-3	BBB-/Negative/A-3		BBB
Turkey	BBB-/Positive/A-3	BB/Positive/B	3	BBB-
Uganda	B+/Stable/B	B+/Stable/B		BB
Ukraine	B+/Negative/B	B+/Negative/B	4	B+
United Kingdom	AAA/Stable/A-1+	AAA/Stable/A-1+		AAA
United States	AA+/Negative/A-1+	AA+/Negative/A-1+		AAA
Uruguay	BBB-/Stable/A-3	BBB-/Stable/A-3		BBB+
Venezuela	B+/Stable/B	B+/Stable/B	4	B+
Vietnam	BB-/Negative/B	BB-/Negative/B	3	BB-
Zambia	B+/Stable/B	B+/Stable/B		B+

*These T&C assessments are for countries that are either members of monetary or currency unions or use as their local currency the currency of another sovereign. Because of this, the assessment shown is based on Standard & Poor's analysis of either the monetary authority of the monetary/currency union or the sovereign issuing the currency. Thus, for European Economic and Monetary Union (EMU) members (Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovak Republic, Slovenia, and Spain), the T&C assessments reflect our view of the likelihood of the European Central Bank restricting nonsovereign access to foreign exchange needed for debt service. Similarly, the T&C assessments for countries with rated sovereigns in the Eastern Caribbean Currency Union (Grenada and Montserrat) reflect the current and projected policies of the Eastern Caribbean Central Bank. Likewise, the T&C assessments for countries with rated sovereigns in the West African Economic and Monetary Union (Benin, Burkina Faso, and Senegal) are based on the policies of the Central Bank of West African States, and the T&C assessments for countries with rated sovereigns in the Central African Economic and Monetary Community (Cameroon and Gabon) are based on the policies of the Bank of Central African States. As for countries that use the currency of another, the T&C assessments of El Salvador and Panama are equalized with that of the United States, while those of Abu Dhabi and Ras Al Khaimah are equalized with that of the United Arab Emirates, Andorra and Montenegro with EMU members, the Cook Islands with New Zealand, Guernsey and the Isle of Man with the United Kingdom, and Liechtenstein with Switzerland.

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McGRAW-HILL

Switzerland

Roche Holding AG

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Review

Credit Profile

ISSUER CREDIT RATING

Roche Holding AG
Corp credit rtg AA-/Stable/A-1+

CORPORATE CREDIT RATING HISTORY

July 21, 2008 AA-/Stable/A-1+
Feb. 1, 2006 AA-/Stable/A-1+

DEBT MATURITIES

On Dec. 31, 2011
Within one year: CHF3.4 billion
2013 CHF5.2 bil.
2014 CHF1.6 bil.
2015 CHF2.2 bil.
2016 CHF3.3 bil.
After five years, CHF10.8 bil.

BUSINESS RISK PROFILE

Excellent

FINANCIAL RISK PROFILE

Modest

Rationale

The ratings on Switzerland-based pharmaceuticals and diagnostics group Roche Holding AG (Roche) reflect Standard & Poor's Ratings Services' view of the group's "excellent" business risk profile, as the global leading provider of oncology drugs, and its "modest" financial risk profile., as our criteria define these terms.

Roche's key business strengths include its excellent business positions in its pharmaceuticals and diagnostics divisions and its well-stocked late-stage pipeline, which now also has a critical size in treatment areas other than oncology. In addition, Roche continues to generate ample free cash flows, with support from its high operating margins. A relative weakness is Roche's slight geographic underrepresentation in the important U.S. pharma market.

Our view of Roche's "modest" financial risk profile takes into account the group's financial policy is less conservative than previous policies. Management demonstrated this through its willingness to exercise large debt-funded merger and acquisitions (M&A), such as the mainly debt-funded \$47 billion Genentech minority buyout in 2009. This is partly offset, in our view, by the group's relatively moderate shareholder value focus compared with peers.

S&P base-case operating scenario

We anticipate that Roche will be able to generate slightly higher EBITDA in 2012

than last year of Swiss franc (CHF)16.5 billion (\$18.3 billion at current exchange rates) for the group. This would continue to represent one of the highest operating profit margins in the sector in Europe. Our EBITDA scenario is based on slightly positive revenue growth of slightly below 4% in 2012, mainly generated from relatively lower growth in pharmaceuticals, while Roche's diagnostics division is likely to benefit relatively more strongly from innovations and higher demand for diagnostic tests, due to the increased trend toward coupling drug prescription with diagnostic testing (personal medicine).

Our comparatively robust revenue growth assumption for the group's pharmaceuticals division is mainly based on Roche being less exposed than competitors to major patent expiry in 2012. In addition, we believe Roche is likely to be able to generate positive sales growth in the future also as a result of innovative drugs launched in the past, such as Lucentis (macular degeneration) or with respect to its well-filled pipeline.

Therefore, although generally increasing regulation in the health care sector is leading to ever more price pressure in most large European markets, we believe Roche has a good chance to perform better than the market in future. We assume the company's two main cost items—marketing distribution and R&D—will be stable relative to sales for 2012, consistent with the company's policy to maintain a strong in-house R&D approach.

Note: The business profile designation in the credit profiles of selected full analyses reflects Standard & Poor's assessment of the level of business risk of each issuer, based on industry fundamentals and the company's competitive position. Designations range from well above average, indicating limited business risk, to well below average, indicating a high level of business risk. Financial policy assessment presents Standard & Poor's view of management's financial risk orientation.

S&P base-case cash flow and capital structure scenario

We anticipate that in 2012 Roche will reach a Standard & Poor's-adjusted ratio of funds from operations (FFO) to net debt of about 70%, which we regard as comfortable for the ratings. This would represent another improvement from the 58% reached in 2011, and is subject to our assumptions.

Our expectations are based on an increase in FFO to about CHF13.5 billion in 2012, compared with about CHF12.5 billion the year before. The difference is mainly due to our assumption of operating improvements and lower interest costs, while we believe that the main benefits from the group's cost-cutting program would be felt in 2013. We have also factored in our assumptions of CHF3 billion of capital expenditure, a somewhat lower cash outflow for working capital compared with the past two years, and bolt-on acquisitions of CHF2 billion. This does not yet include Roche's present bid for Illumina for nearly \$7 billion, which might affect financials for 2013. However, if this acquisition goes ahead, Roche's credit metrics would in our opinion still be in line with what we consider commensu-

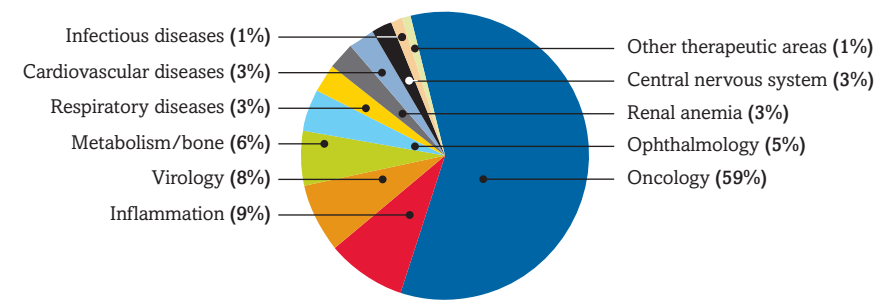
rate with the ratings, namely an FFO-to-net-debt ratio of more than 50%. Post 2012, we assume further debt reduction in line with management's policy and enabled by continued rich free cash flows generated by more than CHF10 billion on an annual basis.

Liquidity

The short-term rating is 'A-1+'. We view Roche's liquidity as "strong" and calculate that liquidity sources should exceed liquidity needs by a factor of 1.8x over the next 12 months. On Dec. 31, 2011, Roche had more than CHF9 billion in available cash and marketable securities, stripping out about CHF2 billion to account for restricted cash elements, thereby comfortably exceeding short-term maturities of only CHF3.4 billion at the same point in time. In addition, the group had undrawn committed credit lines exceeding €3 billion at the end of 2011. Furthermore, the group's excellent liquidity profile is also supported by Roche's free operating cash flow before acquisitions and dividends of almost CHF10 billion in 2011. This is about the same level as 2010 and compares well in a peer group comparison.

A relative weakness is Roche's slight geographic underrepresentation in the important U.S. pharma market.

Chart 1 | Roche Holding Pharmaceutical Portfolio Mix 2011



© Standard & Poor's 2012.

Major Rating Factors

Strengths:

- Leading global player in fast-growing oncology indication;
- Well-stocked late-stage pipeline;
- Relatively young and well-diversified product portfolio; and
- Strong free cash generation.

Weaknesses:

- Slight underrepresentation in the lucrative U.S. pharmaceutical market; and
- Less conservative financial policy than in the past.

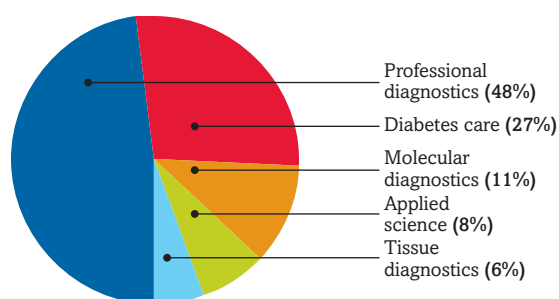
Outlook: Stable

The stable outlook reflects Roche's well-entrenched market positions, in pharmaceuticals and diagnostics. It also reflects our expectation that the company will predominantly use its enhanced free cash flow-generating capabilities for debt reduction in 2012 and beyond. We therefore expect management to abstain

from large debt-funded acquisitions and further financial policy changes.

We consider a sustainable pension-adjusted FFO-to-net-debt ratio of more than 50% to be consistent with the current ratings. Moreover, the ratings provide some flexibility for potential midsize acquisitions. We would consider a posi-

Chart 2 | Roche Holding Diagnostics Division Portfolio Mix 2011



© Standard & Poor's 2012.

Table 1 | Reconciliation Of Roche Holding AG Reported Amounts With Standard & Poor's Adjusted Amounts (Mil. CHF)

—Fiscal year ended Dec. 31, 2011—										
Roche Holding AG reported amounts	Debt	Shareholders' equity	Revenues	EBITDA	Operating income	Interest expense	Cash flow from operations	Cash flow from operations	Dividends paid	Capital expenditures
Reported	26,853.0	12,095.0	42,531.0	16,173.0	13,454.0	1,441.0	12,954.0	12,954.0	5,742.0	1,959.0
Standard & Poor's adjustments										
Operating leases	650.6	—	—	32.7	32.7	32.7	177.8	177.8	—	172.7
Postretirement benefit obligations	3,285.8	(67.0)	—	58.0	58.0	65.0	(263.9)	(263.9)	—	—
Surplus cash and near cash investments	(9,287.0)	—	—	—	—	—	—	—	—	—
Reclassification of nonoperating income (expenses)	—	—	—	—	159.0	—	—	—	—	—
Reclassification of interest, dividend, and tax cash flows	—	—	—	—	—	—	(1,509.0)	(1,509.0)	—	—
Reclassification of working-capital cash flow changes	—	—	—	—	—	—	—	1,166.0	—	—
Minority interests	—	2,387.0	—	—	—	—	—	—	—	—
Total adjustments	(5,350.7)	2,320.1	0.0	90.7	249.7	97.7	(1,595.1)	(429.1)	0.0	172.7
Standard & Poor's adjusted amounts										
Adjusted	21,502.3	14,415.1	42,531.0	16,263.7	13,703.7	1,538.7	11,358.9	12,524.9	5,742.0	2,131.7

CHF—Swiss franc.

tive rating action, if Roche exceeded this ratio significantly and demonstrated a sustainable commitment to a financial policy commensurate with a higher rating. Conversely, a large debt-funded acquisition that hinders the group's credit metrics could trigger a downgrade.

Business Description

Roche ranks among the five-largest global pharmaceuticals companies, with about CHF33 billion in pharmaceutical sales in 2011. Besides its own Switzerland-based activities, the group's pharmaceuticals division also now incorporates 100% of U.S.-based biotechnology company Genentech and 61.6%-owned Japanese pharmaceutical producer Chugai.

After the divestment of its vitamins, fine chemicals, and over-the-counter divisions in 2003 and 2004, Roche's group structure makes up the pharmaceuticals and diagnostics divisions, which comprised 77% and 23% of the total group sales in 2011.

In its pharmaceutical division, Roche has five key franchises, with a growing focus on oncology. The diagnostics division contains a total of five different business areas (see charts 1 and 2).

**Business Risk Profile:
A Promising Non-Oncology
Pipeline**

The main supports for Roche's "excellent" business risk profile, according to our criteria, are the following:

Roche ranks among the five-largest global pharmaceuticals companies, with about CHF33 billion in pharmaceutical sales in 2011.

Table 2 | Roche Holding AG—Peer Comparison

Industry sector: Health care products				
	—Fiscal year ended Dec. 31, 2011—			
(Mil. CHF)	Roche Holding AG	Sanofi	Novartis AG	GlaxoSmithKline PLC
Corporate credit ratings as of April 3, 2012	AA-/Stable/A-1+	AA-/Stable/A-1+	AA-/Stable/A-1+	A+ /Stable/A-1
Revenues	42,531	42,754	56,014	39,691
EBITDA	16,264	13,896	17,838	13,458
Funds from operations (FFO)	12,525	12,288	14,278	8,017
Capital expenditures	2,132	2,460	2,583	1,997
Free operating cash flow	9,227	9,125	11,231	6,711
Debt	21,502	19,400	19,983	19,080
Equity	14,415	68,761	62,277	12,774
Adjusted ratios				
EBITDA margin (%)	38.2	32.5	31.8	33.9
EBITDA interest coverage (x)	10.6	15.8	22.7	10.7
Return on capital (%)	37.4	10.0	14.6	33.2
FFO/debt (%)	58.2	63.3	71.5	42.0
Free operating cash flow/debt (%)	42.9	47.0	56.2	35.2
Debt/EBITDA (x)	1.3	1.4	1.1	1.4
Total debt/debt plus equity (%)	59.9	22.0	24.3	59.9

CHF—Swiss franc.

- **Continued leadership in oncology.**

Roche's pharmaceuticals division continued to account for close to 90% of group EBITDA in 2011. Over the past few years, the group's oncology portfolio has increased sales much in advance of underlying pharmaceutical market growth. This was due to a strong growth in incidence rates and to the good reception for Roche's anti-cancer drugs' portfolio. The group's oncology franchise therefore continued to account for the bulk of Roche's total pharmaceutical sales in 2011.

- **High pharmaceutical growth rates.**

Roche's strong pipeline has resulted in strong double-digit currency-adjusted annual pharmaceutical sales' growth on average over the past six years. This was significantly ahead of underlying global market growth of 5% to 8% for the same period. This strong performance was closely linked to the suc-

cess of its leading oncology portfolio, and growth rates have declined over the past two years, due to a base effect and the now mature status of its leading drugs. We therefore anticipate that growth in Roche's pharmaceutical division will moderate to single-digit levels in the coming years. However, we still believe the company can expand above the market average in the foreseeable future because of the success of its already approved oncology drugs, a lack of major pipeline expiries, and its promising late-stage pipeline.

- **High R&D spending.** With an R&D spend of almost 23% in 2011, Roche's pharmaceuticals division continues to be ahead of the industry average of about 15%. This enables the company to continue to build its pipeline and support further development of existing projects, which we view as a

Table 3 | Roche Holding AG—Financial Summary

Industry sector: Health care products

(Mil. CHF)	—Fiscal year ended Dec. 31—				
	2011	2010	2009	2008	2007
Rating history	AA-/Stable/A-1+	AA-/Stable/A-1+	AA-/Stable/A-1+	AA-/Stable/A-1+	AA+/Stable/A-1+
Revenues	42,531.0	49,167.0	51,151.0	45,617.0	46,133.0
EBITDA	16,263.7	16,711.0	18,234.3	16,624.2	17,023.7
Net income from continuing operations	9,343.0	8,666.0	7,784.0	8,969.0	9,761.0
Funds from operations (FFO)	12,524.9	13,628.9	15,949.9	13,082.1	12,890.0
Capital expenditures	2,131.7	2,770.8	3,213.6	3,331.6	3,786.8
Free operating cash flow	9,227.2	9,592.1	13,085.2	9,226.5	7,896.2
Discretionary cash flow	3,485.2	4,327.1	8,690.2	5,175.5	4,869.2
Cash and short-term investments	2,000.0	2,000.0	2,000.0	7,900.0	6,500.0
Debt	21,502.3	24,332.8	29,357.8	0.0	0.0
Equity	14,415.1	11,617.2	9,350.3	53,778.5	53,778.9
Adjusted ratios					
EBITDA margin (%)	38.2	34.0	35.6	36.4	36.9
EBITDA interest coverage (x)	10.6	8.4	8.9	66.7	54.3
EBIT interest coverage (x)	8.9	7.1	7.8	60.1	51.5
Return on capital (%)	37.4	36.7	33.6	27.1	30.9
FFO/debt (%)	58.2	56.0	54.3	N.M.	N.M.
Free operating cash flow/debt (%)	42.9	39.4	44.6	N.M.	N.M.
Debt/EBITDA (x)	1.3	1.5	1.6	0.0	0.0
Debt/debt and equity (%)	59.9	67.7	75.8	0.0	0.0

CHF—Swiss franc. N.M.—Not meaningful.

critical rating factor for ethical pharmaceuticals producers.

- **Excellent late-stage pipeline of drugs in development.** This is also above the average of its big pharma peers. Although the group's rich late-stage pipeline includes many product extensions—such as pharmaceuticals that widen the range of already approved oncology drugs to other forms of cancer—it also includes 13 new molecular entities (NMEs), up from 10 in 2010. This also compares well with peers. In addition, Avastin and MabThera/Rituxan, the group's two major biotechnologically developed oncology brands besides Herceptin, have proven to be efficient for a much wider range of indications than initially targeted.

Roche's drug portfolio consists of a relatively high percentage of relatively new drugs with patent protection for at least another five years.

- **Young product portfolio.** Roche's drug portfolio consists of a relatively high percentage of relatively new drugs with patent protection for at least another five years. Consequently, there is unusually limited risk from patent expiries compared with peers. Until the end of 2012, Roche's maximum threat from patent expiries is negligible, compared with about one-third for the group's big pharma peers. There were no major patent expiries in 2011. Major drugs due to lose patent exclusivity are Boniva in 2012 and the group's No. 1 drug MabThera (oncology and autoimmune diseases) as well as oncology drug Xeloda in 2013. Oncology drug Herceptin is scheduled to expire in Europe in 2014.
- **Growing therapeutic diversification.** We consider the diversity in Roche's pharmaceuticals division as a support for the ratings, despite the oncology indication's dominance. Oncology is nevertheless a very diverse treatment

area and it addresses a growing number of individual cancers due to the greater granularity made possible through personalized medicine. We therefore don't see it as a negative in terms of credit quality. In addition, Roche is also slowly changing its exposure to other medical indications, as evidenced by its late-stage NME pipeline, consisting of 65% non-oncology compounds.

- **High margins.** With its 2011 lease-adjusted group EBITDA margin of about 38%, Roche compares well to its diversified big pharma peers, considering that the diagnostics division's margins dilute the pharma division's returns. Higher pharmaceutical margins result from Roche's patent-protected blockbuster-rich portfolio. We expect pharma margins to stay fairly stable over the next few years. This reflects the group's relatively young product portfolio, which is unlikely to suffer greatly from patent erosion over the next few years, and the company's need to maintain strong R&D investment. Meanwhile, sales and marketing costs are likely to increase on successful approval of some of the late-stage assets in the future.

Their strengths are mitigated by:

- **Slight underrepresentation in the U.S.** Roche continues to have a lower exposure to the lucrative U.S. market in pharmaceuticals than peers. Its sales in the region accounted for about 37% of the total pharmaceutical division's 2011 revenues, which is less than the U.S. market share in the global pharma market of about 45%. We still deem a relative high U.S. exposure to be positive for the ratings, as it continues to be the most profitable region in global patent-protected pharmaceuticals, still allowing for selective price increases.

Financial Risk Profile: Rebuilding Flexibility

The main supports for Roche's "modest" financial risk profile are in our view:

- **Significant free cash flow generation.** Based on its continued high margins and generally low working capital require-

The \$47 billion debt-funded minority buyout of Genentech deviated from management's former focus on organic growth...

ments, Roche generates high free cash flows. This is demonstrated by the group's historical performance, having generated an annual average free cash flow before dividends and acquisitions of close to CHF9 billion over the past five years. Cash generation benefited further through the full integration of Genentech and control of its cash flows. Cash generation in pharmaceuticals in general is a function of the maturity of the product portfolio. Mature drugs, and in particular blockbuster drugs, are generally more profitable than younger or more specialized ones. In this respect, Roche scores highly, reflecting its portfolio of 11 blockbusters, the majority of which are not nearing patent expiry.

This is mitigated by:

- **The group's less conservative financial policy.** The \$47 billion debt-funded minority buyout of Genentech deviated from management's former focus on organic growth and from its aim to abstain from large-scale acquisitions. After the historical net cash position, this acquisition was followed by a number of years of lower credit metrics. However, the addition of Genentech has enhanced cash flow generation, which opens up the potential to swiftly deleverage in the future. The operating risks of this transaction therefore appear to be well under control. While the group's payout ratio is broadly comparable with its peers, there has been a notable absence of share buybacks at Roche historically. We expect this policy to continue given the group's majority family ownership.

Financial Statistics/Adjustments

Accounting

Roche has been using International Accounting Standards and International Financial Reporting Standards (IFRS) since 1990. There were no major accounting changes from the new IFRS standards in 2011 compared with 2010.

To calculate debt measures, Standard & Poor's usually adjusts net debt in the following areas:

- We view pension liabilities as debtlike and therefore add them to net debt. On Dec. 31, 2011, Roche's pension deficit continued to be CHF3.3 billion, based on the gap reported between projected benefit obligations and fair value of plan assets.
- We also view operating leases as debtlike and add them to net debt. Applying a 5% discount rate to the minimum non-cancellable operating-lease commitments, the net present value of Roche group's operating leases was estimated to be CHF651 million in 2011.
- We deducted CHF2 billion of cash in 2011 to reflect restricted cash. This is mainly to reflect the Chugai cash as restricted.
- We adjusted funds from operations (FFO) for operating lease depreciation of CHF178 million and profit-and-loss pension-accounting effects (cash contributions to service and interest costs less expected return on plan assets) taxed at 35%. This amounted to negative CHF264 million, which we deducted from FFO to reverse the noncash credit in the company's cash flow statement. **CW**

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