

CREDIT OPINION

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Memphis-Shelby County Airport Authority (TN)

Moody's maintains A3 rating on Memphis' general airport revenue bonds, outlook stable

Summary Rating Rationale

The A3 revenue bond rating is supported by the airport's origination and destination (O&D) traffic profile, limited competition from surrounding airports and the residual rate-making framework which allows the authority to recover net operating costs from airline carriers. As a result debt service coverage ratios (DSCR) demonstrate stability at moderate levels (1.2x in the period 2012-2016).

We expect that the airport will be able to renew its airline use agreement at similar terms as the existing agreement before its expiration in July 2017. Memphis International Airport also benefits from significant cargo operations from FedEx Corporation (Baa2 stable) which mitigate volatility in passenger enplanements.

The rating is constrained by high cost per enplanement (CPE) for an O&D airport of around \$11.4 in fiscal year 2016, high legacy debt service costs and significant enplanement losses over the last few years as a result of the Delta de-hubbing process, which was completed in 2015. Enplanements recovered in fiscal year 2016 with 10.1% annual enplanement growth. While the Memphis economic area lagged economic growth of the national economy in 2016, long-term economic prospects remain solid which should support stable to modestly positive long-term enplanement growth going forward.

We expect that the authority will manage any remaining transition risks to an O&D airport including the continued optimization of its operational footprint and consolidation of airline and retail operations in concourse B.

Leverage, measured by debt to operating revenue was moderate in 2016 (2.9x) but will increase slightly going forward as a result of a \$110 million private placement issuance in March 2017. Nevertheless, we anticipate that leverage will remain below 4.0x debt to operating revenue supported also by the deferred draw down option under the \$110 million issuance.

The authority's liquidity profile is solid with around 550 days cash on hand.

Credit Strengths

- » Revenue from FedEx cargo operations supports revenue stability
- » Residual use agreements and moderate carrier concentration
- » Residual rate framework supports stability of DSCR at moderate levels
- » Potential to implement passenger facility charges (PFC), currently under consideration

Credit Challenges

- » Enplanements have yet to demonstrate stability
- » High cost per enplanement (CPE) with limited visibility for near-term reduction

Rating Outlook

The stable outlook reflects our expectation of stable DSCRs supported by the airport's residual rate framework and stable to modestly growing passenger enplanements and cargo operations. It also includes our expectation that the airport will renew airline use agreements before their expiration in July 2017 at similar terms.

Factors that Could Lead to an Upgrade

- » Sustained growth in O&D passengers
- » Decrease in airlines costs supporting reduction in CPE (cost per enplanement) close to median level for US public airports

Factors that Could Lead to a Downgrade

- » Significant activity reduction by FedEx at the airport
- » Sustained deterioration in air travel demand in the Memphis market
- » Decrease in liquidity to below 250 days cash on hand

Key Indicators

Exhibit 1

Key Indicators - Memphis-Shelby County Airport Authority, TN

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY, TN					
	2012	2013	2014	2015	2016
Enplanement Annual Growth (%)	-17.8	-29.2	-29.6	-8.5	10.1
Debt Outstanding (\$'000)	421,275	394,825	366,040	335,710	303,360
Debt to Operating Revenues (x)	3.8	3.5	3.2	3.3	2.9
Debt Per O&D Enplaned Passenger (\$)	186	190	166	147	120
Days Cash on Hand ('000)	744	567	580	516	549
Total Coverage By Net Revenues (x)	1.22	1.15	1.28	0.98	1.32

Note: All financial metrics are calculated according to Moody's Definitions and incorporate Moody's standard adjustments. Fiscal year closes end of June of each year.

Source: Audited financial statements of the authority, Moody's Investors Service

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Recent Developments

- » **Positive enplanement growth in fiscal year 2016 of 10.1%**
- » **Residual airline use agreement will be up for renewal in 2017:** The residual use agreement with all major airlines serving the airport, including FedEx and UPS, will expire July 2017. We expect that the authority will successfully renew its residual use agreement with all major airlines in 2017 at similar terms as its current agreement.
- » **Recent \$110 million private placement bond issuance:** In March 2017, the authority issued \$110 million airport revenue bonds, Series 2016A as a private placement to a single investor. The private placement is not rated by Moody's. Proceeds of the issuance will be used to fund capital investment projects and the bond structure includes a deferred draw down option which will limit the imminent increase in leverage as a result of the issuance. The first draw down was for \$27.5 million and remaining draw downs are expected to occur in calendar year 2017 and 2018.
- » **Update of Master Capital Improvement Plan expected later in 2017**

Detailed Rating Considerations

Revenue Generating Base

REVENUE FROM FEDEX CARGO OPERATIONS SUPPORTS REVENUE STABILITY

The presence of FedEx Corporation's (Baa2 stable) substantial cargo operations mitigates volatility in passenger enplanements and adds stability to the airport's revenue profile. Memphis airport handled approximately 4.8 million tons of cargo in fiscal year 2016 of which around 99% is handled by FedEx. The airport is ranked #1 in the US and #2 in the world behind Hong Kong for total air cargo according to statistics compiled by the Airports Council International, Geneva, Switzerland. The majority of cargo at the airport is for the US domestic market.

RESIDUAL USE AGREEMENTS AND MODERATE CARRIER CONCENTRATION

The authority is operating under a residual use agreement with all major airlines serving the airport, including FedEx and UPS, that went into effect in July 2012 and terminates in July 2017. The airline use agreement allows for airlines to decrease terminal space annually with proper notice. The authority retains the right to relocate airlines within the terminal to address space reductions. We expect that the authority will successfully renew its residual use agreement with all major airlines in 2017 at similar terms as its current agreement.

The authority generates a significant portion of revenue with FedEx and Delta Air Lines, Inc. (Baa3 stable) (44 percent of operating revenue in fiscal year 2016 and 53 percent of operating revenue in fiscal year 2015). However, passenger enplanement concentration by airline has decreased significantly with the completion of the Delta de-hubbing process in 2015 and the airport's passenger carrier profile is now fairly diversified. Delta's market share at the airport fell to a moderate 26% for the last twelve months ending January 2017 from a concentrated 77% in fiscal year 2013.

ENPLANEMENTS HAVE YET TO DEMONSTRATE STABILITY

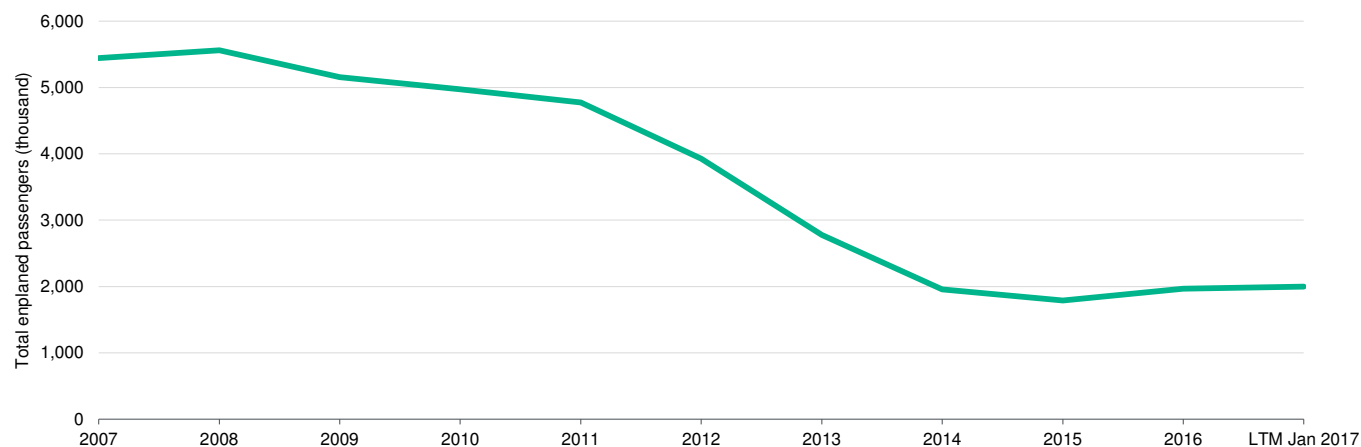
The airport has a 100% O&D profile and faces only limited competition from any other airport in the region. We expect that going forward the airport should benefit from stable to modestly growing passenger enplanements. Passenger enplanements for the last twelve months January 2017 are up slightly by 1.4% year-over-year but down by 1.8% year-over-year for the month of January 2017.

In fiscal year 2016, the airport experienced a strong recovery in enplanements and reported a 10.1% increase in annual passenger enplanements to almost 2.0 million. This recent growth is a positive sign that enplanements have stabilized following the completion of the Delta de-hubbing process in 2015 and that the higher cost per enplanement has not deterred away other carriers. 2016 enplanements are around 65% below 2008 levels.

Exhibit 2

Passenger enplanements have started to stabilize after completion of Delta de-hubbing process

Total enplaned passengers in thousands



Note: Years are based on fiscal year ending June 30. LTM Jan 2017 refers to the last twelve months ending January 2017.

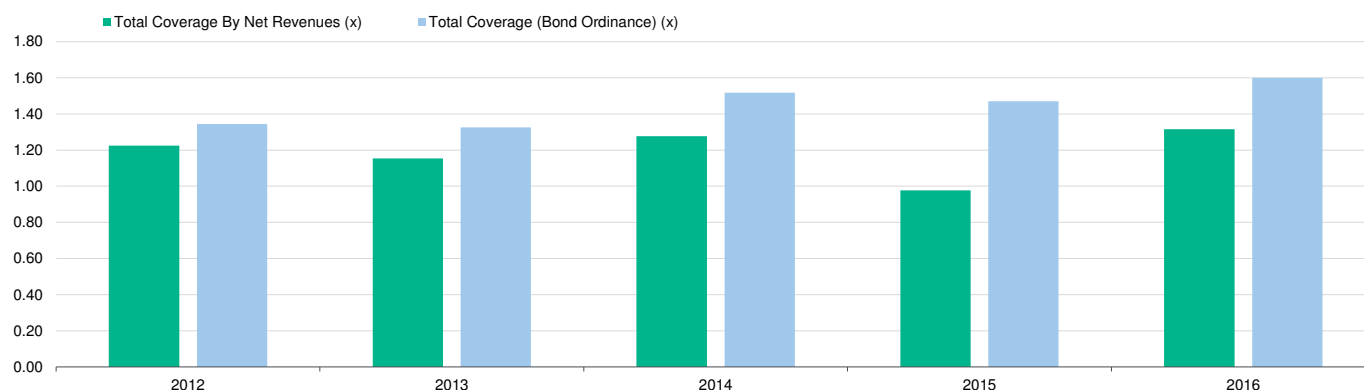
Source: Memphis-Shelby County Airport Authority

The Memphis Metropolitan Statistical Area had a population of around 1.3 million according to the United States 2010 Census. Moody's Economy.com sees some short-term challenges for the Memphis area economy due to slower economic growth than the state or the nation but regards long-term prospects as positive. For 2017 Moody's Economy.com expects economic growth to be in line with the US average. Logistics are an area of strength and upside risk but weakening demographics, poverty and crime rates will remain long term constraints to growth.

Financial Operations and Position**RESIDUAL RATE FRAMEWORK SUPPORTS STABILITY OF DSCR AT MODERATE LEVELS**

The residual rate framework of the airport's use and lease agreements allows for the full recovery of net operational costs from airline carriers, supporting stable DSCRs. However, similar to other airports that operate under a residual rate framework, DSCR levels tend to be modest and averaged around 1.19x according to our net revenue calculation and 1.45x on a bond ordinance basis over the period 2012-2016 (1.32x Moody's net revenue calculation, 1.60x bond ordinance in fiscal year 2016). The bond ordinance DSCR calculation includes the prior year surplus and a coverage carry forward allowance in revenues which is not included in Moody DSCR calculation. We expect DSCR levels in 2017 will be consistent with levels achieved in prior years.

Exhibit 3

We expect DSCR in 2017 to remain consistent with historical levels

Note: Fiscal year ends June 30 of each year.

Source: Audited financial statements Memphis-Shelby County Airport Authority, Moody's Investors Service

HIGH CPE WITH LIMITED VISIBILITY FOR NEAR-TERM REDUCTION

Following the completion of the Delta de-hubbing, the airport will continue to carry higher legacy debt service costs and a higher cost per enplanement (CPE) than other O&D airports or small hubs for the next few years. In fiscal year 2016, the airport had a CPE of \$11.4 which exceeds the 2015 median for O&D airports of \$8.1 and for small hubs of \$7.8. We expect no material reduction in CPE in the near term given relatively steady debt service costs of around \$40 million per annum over the period 2017-2027. However, the fairly high CPE for an O&D airport has not deterred away any existing airline carries at the airports and the airport was able to add additional routes in 2016.

CAPITAL IMPROVEMENT PLAN WILL BE UPDATED LATER IN 2017

The authority seeks to update its long-term master capital plan later this year. We will review the updated plan including funding sources and impact on the authority's leverage and liquidity profile. The current 2015-2020 capital improvement plans includes projects in the amount of around \$440 million including the concourse modernization project, the airfield maintenance facility project and the glycol de-ice pads project:

- » **Terminal/concourse modernization project:** The entire project will take around 3-4 years and construction is scheduled to begin in fiscal year 2017. The project foresees the consolidation of airline and retail operations in concourse B. The south end of the A and C concourses will be removed to allow for unobstructed access by aircrafts to the entire concourse B.
- » **Airfield maintenance facility:** The new airfield maintenance facility will replace the existing airfield maintenance building and warehouse facilities. Construction is expected to begin in summer 2017 and to be completed in late 2018. Construction costs will be partially financed with the proceeds of the \$110 million private placement issued in 2017.
- » **Glycol de-ice pads:** Construction is expected to begin in summer 2017 and the project should be completed in 2019. Construction costs will be partially financed with the proceeds of the \$110 million private placement issued in 2017. The airport is in the design phase of 12 de-ice pads which will be designed to separate the deicer and anti-icer impacted water from the storm drainage system.

LIQUIDITY

The authority's liquidity profile is adequate. In fiscal year 2016, the authority had around 549 days cash on hand, a level the authority has maintained over the last four years. We expect that the authority will hold similar amounts of cash days on hand going forward. In addition, the authority's liquidity profile benefits from access to a \$30 million revolving credit facility that matures on December 31, 2017. As of June 30, 2016 around \$27 million were available under the credit line.

We understand that the authority seeks to renew the revolving credit line before its maturity.

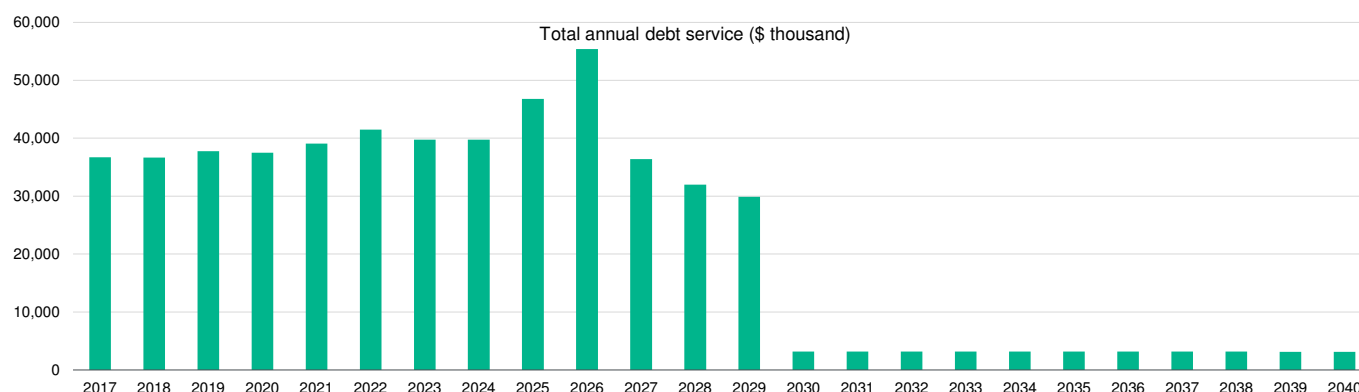
Debt and Other Liabilities**DEBT STRUCTURE****MODEST LEVERAGE DESPITE RECENT PRIVATE PLACEMENT ISSUANCE TO FINANCE CAPITAL EXPENDITURES**

The airport's leverage remains moderate. In fiscal year 2016, the airport had approximately \$303.4 million of debt outstanding, consisting of the 2010 and 2011 revenue bond series. Outstanding debt translates into a debt/(operating revenue + available PFC revenue for debt service) ratio of around 2.9x in fiscal year 2016 and of 3.5x on average during the period 2012-2015.

In March 2017, the authority issued \$110 million airport revenue bonds, Series 2016A as a private placement to a single investor. The 2016 series is not rated by Moody's, ranks pari passu to other outstanding airport revenue bonds and has been issued as drawdown bonds. The initial drawing was \$27.5 million. Additional drawings will be made in calendar year 2017 and 2018. The bonds are subject to redemption on each July 1, commencing 2025 and have a final maturity on July 1, 2029. Pro-forma 2016 leverage including the full amount of the \$110 million private placement would be around 3.9x which positions the airport adequately in its rating category.

Bond proceeds will be applied to fund capital improvements at the airport (around \$40 million for the airfield maintenance facility project and around \$54 million for the glycol project) and a \$11 million debt service reserve fund.

Exhibit 4

High legacy annual debt service for the next few years

Note: Fiscal year ends June 30 of each year. Debt service includes debt service for recently issued \$110 million private placement bonds.

Source: Memphis-Shelby County Airport Authority, Moody's Investors Service

DEBT-RELATED DERIVATIVES

Not applicable.

PENSIONS AND OPEB

The authority participates in the defined benefit pension plans of the City of Memphis Retirement System. For fiscal year 2016, the authority reported a net pension liability of \$16.977 million for its proportionate share based on a discount rate of 7.5%. Moody's adjusted net pension liability is based on a lower discount rate and was around \$59.432 million for fiscal year 2016.

The authority's pension obligations are manageable and not a major driver of its credit quality.

Management and Governance

The authority's financial management and governance practices are adequate. The authority prepares an annual operating budget and 5-year capital improvement plan, which need to be filed with the city. Modifications to the 5-year capital improvement plan also need to be filed with the city on an annual basis.

The Memphis-Shelby County Airport Authority is a body politic and corporate of the State of Tennessee, created in 1969 pursuant to the Metropolitan Airport Authority Act. The authority is governed by a seven-member Board of Commissioners, appointed by the Mayor of the City of Memphis, with two members nominated by the Mayor of Shelby County. The Memphis City Council confirms all board members.

Legal Security

The authority's outstanding bonds are secured by a pledge on net revenues. The authority's rate covenant requires net revenues to equal at least 125% of debt service, including a 25% rolling coverage account and ability to include last year's surplus when calculating DSCR. The debt service reserve fund is series specific and is set at the lesser of maximum annual debt service (MADS), 10% of proceeds or 125% of average annual debt service. As of June 30, 2016 the authority had debt service and debt service reserve funds of around \$66.7 million.

An additional bonds test also requires that projected net revenues be sufficient to cover debt service during construction and then meet the 125% rate covenant (including rolling coverage) for three years on a prospective basis, including new debt service.

Use of Proceeds

Not applicable.

Obligor Profile

The authority owns and operates the Memphis International Airport (MEM) and two general aviation reliever airports - Charles W. Baker Airport and General DeWitt Spain Airport. MEM has four runways. MEM is undergoing a terminal modernization that will

consolidate capacity and result in 42 gates (down from 79), while landside areas consist of 9 rental car agencies and more than 5,450 parking spaces. The FedEx facilities contain approximately 3.5 million square feet and occupy 520 developed acres.

Other Considerations - Mapping to the Grid

The grid is a reference tool that can be used to approximate credit profiles in the airport industry in most cases. However, the grid is a summary that does not include every rating consideration. Please see Publicly Managed Airports and Related Issuers methodology for more information about the limitations inherent to the methodology grid.

The assigned rating of A3 is in line with the grid-indicated outcome of A3.

Exhibit 5

Rating Factors - Publicly Managed Airport and Related Issuers

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY, TN

Regional Position:		Regional	
Rate Making Framework:		Residual	
Factor	Subfactor	Score	Metric
1. Market Position	a) Size of Service Area (millions)	A	1.37
	b) Economic Strength and Diversity of Service Area	Baa	
	c) Competition for Travel	A	
2. Service Offering	a) Total Enplanements (millions)	Baa	1.97
	b) Stability of Traffic Performance	Baa	
	c) Stability of Costs	A	
	d) Carrier base (Primary Carrier as % of Total Enplanements)	A	33.60%
3. Leverage and Coverage	a) Debt Service Coverage by Net Revenues	A	1.32x
	b) Debt in USD per O&D Enplaned Passenger	Ba	\$120.48
		Metric	Notch
4. Liquidity	Days Cash on Hand	549	0
5. Connecting Traffic	O&D Traffic	99.8%	0
6. Potential for Increased Leverage			0
7. Debt Service Reserves			0
Scorecard Indicated Rating:		A3	

Source: Moody's Investors Service

Methodology

The principal methodology used in this rating was Publicly Managed Airports and Related Issuers published in November 2015. Please see the Rating Methodologies page on www.moody's.com for a copy of this methodology.

RATINGS

MEMPHIS-SHELBY COUNTY AIRPORT AUTHORITY (TN)

Airport Revenue Bonds, Series 2010 and Series 2011

Rating Outlook

A3

Stable

Source: Moody's Investors Service

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