September 10, 2018 04:01 AM GMT

### Tobacco

# Three Key Take-aways From Our JUUL City Scanner Analysis

Our Nielsen city data analysis suggests JUUL's cigarette cannibalization rate remains low, but shows slowing cigarette volumes in JUUL's top mkts (NY, Seattle, Denver). JUUL's HSD-LDD share in several large cities supports our ests. of ~15% share in 2022 and ~100 bps/year headwind to cigarette volumes.

### JUUL's rapid growth is raising questions about its impact to cigarette volumes:

JUUL sales are growing rapidly (+728% YoY L4W ended 8/11/18) and JUUL refills now hold 4.9% of cigarette equivalent volumes (vs. 50 bps in the prior year). JUUL's success is coinciding with decelerating cigarette industry volumes, which declined 4.0%/4.5% in 2017/1H18 after two years of unusually strong growth (-0.5%/-2.5% in 2015/16), raising concerns about JUUL's threat to the cigarette category.

### We have three key take-aways from our deep-dive into JUUL city scanner data:

**1)** JUUL has overwhelmingly high market share in several major cities: JUUL sales over-index to major US cities, and it has overwhelmingly high market share in New York (12.9%), Seattle (10.2%), Houston (8.0%), Denver (7.9%), and Nashville (7.0%) despite only entering these markets in 2016/early 2017. Interestingly, JUUL has higher market share in cities where cigarette prices are higher, potentially benefiting from its cost advantage compared to cigarettes.

**2)** JUUL's cigarette cannibalization rate still appears low: A number of JUUL's top markets (Nashville, Denver, New York, and Seattle) are experiencing decelerating cigarette volumes along with growing JUUL share. However, the rate of cigarette volume declines is not commensurate with the pace of JUUL share growth and there is also a positive correlation with cigarette volumes across many cities. In fact, when combining cigarette and JUUL volumes, total tobacco consumption grew 1.9% over the past year in top US cities (see Exhibit 22), suggesting JUUL may be adding new users to the category.

**3)** JUUL has further room for distribution expansion: JUUL's ACV in convenience stores is below its 70% national average in about half of major cities. Convenience stores have a strong incentive to carry the product as it accounts for a majority of the channel's sales growth.

What does this mean for the tobacco industry outlook? We believe that JUUL's rapid growth should continue, driven by increasing consumer acceptance and further distribution gains. While current cannibalization appears low, we believe it will likely increase as JUUL moves beyond early adopters and increasingly targets existing smokers through its marketing efforts. Net, we believe Nielsen



North America IndustryView

**Exhibit 1:** JUUL has outsized market share of cigarette volumes in NY, Seattle, Houston, Denver, and Nashville



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

**Exhibit 2:** Correlation between cigarette volumes and JUUL market share in JUUL's Top 10 cities/regions (January 2017-Present



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

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1



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data supports our view that JUUL can be a ~100 bps annual headwind to

industry volumes over the next five years (See Is JUUL Hype Overblown?), which is predicated on JUUL's share of cigarette volumes approaching 15% by 2022 (supported by its high share in NY/Seattle) and a relatively low cannibalization rate (40% by 2022 vs. ~20% today). We are closely monitoring evolving JUUL data and a clear risk to the company is if cigarette cannibalization remains low and regulatory pressures build.

Where can we be wrong? Our analysis is based on Nielsen scanner data and excludes online sales and vape shops, potentially underestimating JUUL consumption. In addition, Nielsen may not have complete coverage of the convenience store channel, where a majority of JUUL sales occur.



# A Closer Look at JUUL Scanner Data by City

#### JUUL's rapid growth is raising questions about its impact on decelerating US cigarette

**volumes.** JUUL continues to grow at a rapid pace, with sales +728% YoY in the L4W ended 8/11/18, and is driving a meaningful acceleration in e-cig category sales growth from +48% in 2017 to +146% in 2018 YTD within measured channels (Exhibit 3). JUUL's growth has been facilitated by greater access to capital, distribution expansion into traditional retail channels, and expanded manufacturing capacity. As of 8/11/18, JUUL refills represented 4.9% share of cigarette equivalent volumes (Exhibit 6), compared to 50 bps in 2017 and JUUL accounted for 3.9% of total dollar spend on cigarettes and ecigs combined (Exhibit 5). JUUL's success is coinciding with decelerating US cigarette volumes, which declined -4.5% in 1H18 and -4% in 2017 following two years of unusually strong performance (-0.5%/-2.5% in 2015/16), raising concerns about JUUL's threat to the cigarette category.

**Exhibit 3:** E-cig sales growth accelerated throughout 2017/18 due to JUUL's success



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Exhibit 4: JUUL holds 70% share of the e-cig category



### **Exhibit 5:** JUUL accounts for 3.9% of total \$ spend on cigarettes and e-cigs combined

U.S. E-Cig \$ as % of Total E-cig + Cigarettes Sales

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

# **Exhibit 6:** JUUL held 4.9% share of cigarette equivalent volumes as of 8/11/18

JUUL % of Cigarette Volumes



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### JUUL's success has come with relatively limited distribution, but its reach is expanding.

Within measured channels, JUUL is sold at convenience stores and was available at 77,000 convenience stores in August compared to only 29,000 at the end of 2017 (Exhibit 7). For context, there are ~155,000 convenience stores in the US and JUUL is rapidly expanding distribution, adding, on average, ~6,000 convenience stores per month. Among conveniences stores, JUUL is sold at convenience stores representing ~70% ACV, and is adding 4-5% ACV on average per month. This pace of distribution expansion suggests JUUL may be at full distribution within the convenience store channel by the end of this year (Exhibit 8), but our discussions with the company suggest that it believes its actual ACV is slightly over 50%. Notably, the company indicated that it expects to add several large accounts over the coming months and expects to expand distribution beyond the convenience store channel into drug and mass.

### Exhibit 7: JUUL is sold at ~77,000 convenience stores in the US



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

# **Exhibit 8:** JUUL could be at full distribution within the convenience store channel by the end of 2018

JUUL - % ACV (Convenience)



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### Convenience stores have an incentive to sell JUUL as its sales per store are growing

**~140% YoY.** JUUL sales per store are growing rapidly, up +136% in the L4W ended 8/11/18, though they have moderated sequentially, +3% MoM to ~\$2,600/store (Exhibit 9). We believe convenience stores have a strong incentive to carry JUUL, which is driving a significant portion of the retail channel's growth. In the L12W, total convenience store sales grew +2.2% but would have grown +80 bps excluding JUUL, which is accounting for about two-thirds of total convenience store sales growth (despite not being in full distribution within this channel). Most recently, overall convenience channel sales grew +1.6% in the L4W, but sales would have been flat YoY sales when excluding the contribution from JUUL (Exhibit 10).

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Exhibit 9: JUUL sales/store growing ~140% YoY and ~3% MoM

JUUL - Sales/Store \$3,000 \$2,500



**Exhibit 10:** JUUL is contributing to the majority of c-store channel sales growth

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Total Convenience Store Sales vs. Total Convenience ex. JUUL (\$ YoY)

30%



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

On the other hand, cigarette sales are meaningfully underperforming the overall

**convenience store channel.** Historically, YoY spend on cigarettes has closely tracked YoY spend on all other categories within convenience stores. However, as evidenced by Exhibit 11, this relationship started to breakdown at end of 2017, coinciding with JUUL's increasing growth. Cigarette sales growth turned negative in January 2018 (-1.2% YTD) after growing consistently since 2014. Over the last several months, cigarette sales within convenience stores have been declining at an accelerating rate (-1.9% in August vs. -1.2% in July). The gap relative to sales growth for non-cigarette products has widened, suggesting that convenience store traffic is not the underlying driver for slowing cigarette sales growth.





Source: Nielsen, Morgan Stanley Research, (data as of 08/11/18)

JUUL's market share of cigarette volumes over-indexes to major metropolitan areas, with overwhelmingly high share in New York, Seattle, Houston and Denver. JUUL held 4.9% of cigarette equivalent volumes in the L4W ended 8/11/18, but there are notable differences in its share across cities. JUUL has outsized market share of cigarette volumes in several markets, holding 12.9% market share in New York, followed by Seattle (10.2%), Houston (8.0%), Denver (7.9%), and Nashville (7.0%) despite only entering these markets in 2016/early 2017. JUUL's high market share in these cities is likely a function of the city demographics (i.e. affluence, age), time in the market, as well

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as the price of cigarettes in each market. JUUL has lower penetration in the South Atlantic region, which is also the highest cigarette volume market, holding 3.9% share of cigarette volumes in the region. Outside of the 25 major cities, JUUL has 4.5% share of cigarette volumes. However, JUUL share is growing rapidly across all of these markets (see Exhibit 12 & Exhibit 13).

#### Exhibit 12: JUUL market share of cigarette volumes is the highest in NY, Seattle, Houston, Denver and Nashville



Source: AlphaWise, Tableau, Morgan Stanley Research (data as of 08/11/18)

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Exhibit 13: JUUL market share is growing YoY

JUUL Refills Share of Cigarette Volumes (YoY L12W)



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

JUUL regional sales data indicates that it over-indexes to major cities and is heavily weighted to New York City. Based on Nielsen data, JUUL derives 51% of its volumes from 25 major cities, compared to 46% of cigarette volumes sold in these cities. New York represents an outsized portion of JUUL's total volumes (7.9% as of 8/11/18), followed by Philadelphia (3%) and Boston (3%) (Exhibit 14). JUUL refill volumes are overindexed relative to the cities' share of total US cigarette volumes in 10 cities, with the top 5 including New York (2.5x), Seattle (2.3x), Houston (1.8x), St. Louis (1.8x), and Denver (1.6x) (Exhibit 15). We found that the largest cigarette markets (as denoted by the dark colors on the map above) have the lowest JUUL penetration while smaller cigarette volume markets (lighter colors) have higher JUUL penetration



Source: Nielsen XAOC + C, Morgan Stanley Research (data as of 08/11/18)

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Exhibit 15: JUUL volume mix by city relative to cigarettes

#### JUUL Relative Volume Mix (vs. Cigarettes)



Source: Nielsen XAOC + C, Morgan Stanley Research (data as of 08/11/18)



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Interestingly, there is a relatively weak relationship between JUUL's ACV and market share across markets. In the US, JUUL holds 70% ACV of the convenience store channel, in addition to online distribution through its website. Its ACV within convenience stores is highest in New York, Philadelphia, Boston, and St. Louis (Exhibit 16) but we found a generally weak relationship between its ACV and market share within current markets. For example, JUUL has 8% share of cigarette volumes in Houston with only 44% ACV and 10% share in Seattle with only 53% convenience store ACV. Across many US cities, JUUL ACV is still below its national average, suggesting it has room to continue to grow its distribution reach within these markets (Exhibit 17). Moreover, its dollar sales per point of ACV ranges across cities, with New York the highest at \$1,400 in sales per % ACV per month, well above many other markets, suggesting that there is still significant

opportunity to close the gap within existing stores.



Exhibit 17: ACV ranges by major city, with room to expand distribution and sales/distribution point

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

**Exhibit 18:** Cigarette prices positively correlated to JUUL market share

#### JUUL Market Share



Cigarette Price/Pack

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

# **Exhibit 19:** Negative correlation between JUUL YoY share and cigarette volume momentum

Cig Volumes L12W-L52W



JUUL Market Share YoY (L12W)

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### re correlation between JUUL market share and cigarette prices across

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markets. JUUL has higher market share in markets with relatively high cigarette prices, such as New York (\$9.26/pack average vs. \$4.41 for a JUUL refill), potentially driven by its cost advantage compared to cigarettes. Given that the average price of a JUUL refill is \$4.18 compared to \$6.30 average price per pack of cigarettes, smokers have a strong incentive to switch to JUUL. Conversely, JUUL has lower market share in cities that have below average cigarette prices such as Atlanta, Raleigh/Durham, and Louisville. Similarly, JUUL has higher market share in cities where its discount relative to cigarette prices is highest.

In aggregate, there is a negative relationship between JUUL's market share and cigarette volume momentum. Total cigarette US scanner data suggests that cigarette volumes were stable over the L12W and L52W, down 3.2% YoY. However, within the top US cities, cigarette volume declines moderated over this period from - 3.8% L52W to -2.4% L12W. Within these markets, there is a -0.57 correlation between JUUL's YoY market share and their cigarette volume momentum (L12W volumes minus L52W). In New York and Seattle, where JUUL is seeing the greatest share momentum, cigarette volumes have decelerated more meaningfully (See Exhibit 19).

Our analysis points to a mixed correlation between JUUL market share and cigarette volumes across major cities. We ran correlations between the YoY change in cigarette volumes and the YoY change in JUUL market share between January 2017 and

August 2018 to determine whether there is a relationship between JUUL growth and cigarette sales. The analysis points to a negative correlation in Nashville, Denver, Seattle, and New York, which have high JUUL market share, suggesting that the impact to cigarette volumes may become more meaningful in other markets if JUUL market share reaches a similar scale. Outside of the major US cities, JUUL also exhibited a negative correlation to cigarette volumes in the West South Central and South Atlantic regions.

However, there were many cities where the correlation between JUUL share and cigarette volumes was positive. The positive correlation between JUUL share and cigarette volumes in some markets may be attributed to several factors, such as: i) potentially low cannibalization rates due to JUUL attracting new users; ii) a greater number of JUUL refills required to displace a pack of cigarettes; iii) still low absolute levels of market share; iv) the influence of other factors that may be impacting cigarette volumes (i.e. consumer confidence, unemployment); and v) a still limited number of data points as the correlation is only based on data starting in 2017. (Exhibit 20)

Exhibit 20: Correlation between JUUL market share and cigarette volumes shows mixed impact across markets

Correlation Between JUUL YoY Market Share and Cigarette Volumes



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Exhibit 21: Correlation between cigarette volumes and JUUL market share in JUUL's Top 10 cities/regions (January 2017-Present) Correlation Between JUUL YoY Market Share and Cigarette Volumes



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

**JUUL volumes are largely incremental to category volumes across major cities.** JUUL cannibalization of cigarette volumes still appears low, as its volumes are incremental to



### UPDATE

the overall category. When combining JUUL refill volumes with cigarette packs sold, the YoY growth in total volumes is positive in 15 cities, suggesting JUUL is expanding the category in many markets (as cigarette volumes would likely decline otherwise). This could be because JUUL is appealing to non smokers, because JUUL may be additive to smokers' cigarette consumption, or if smokers who are switching to JUUL consume more pods relative to the number of packs they smoked.

### Exhibit 22: JUUL is incremental to category volumes across major cities JUUL + Cigarette Volumes vs. Cigarette Volumes (YoY-L12W)



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### We still estimate a relatively low impact from JUUL on cigarette volumes. We

previously estimated that ~22% of JUUL's sales growth has come at the expense of cigarette volumes with the remainder stemming from new users in the category and potentially a greater number of pods necessary to displace cigarette consumption (i.e. one refill is not equivalent to one pack of cigarettes). Within JUUL's top markets, cigarette volume declines are worsening along with increasing JUUL growth in New York (-4.1% L12W vs. -1.0% L52W), Seattle (-7.2% L12W vs. -1.8% L52W), Philadelphia (-1.8% L12W vs. flat L52W). We believe JUUL cannibalization rate on cigarette volumes is still low as the deceleration in cigarette volumes across markets is not commensurate with the rate of JUUL share gains. In particular, the ~3% deceleration in cigarette volumes in New York compares to ~13% JUUL market share. In Seattle, cannibalization may be higher considering an ~5.5% deceleration in volumes compared to ~10% JUUL market share. However, cigarette volumes declines moderated across a number of markets despite increasing JUUL market share. This could suggest that either JUUL is drawing in new users, that it is being used as a complement to cigarette consumption by existing smokers when they can not smoke cigarettes, or other factors contributing to improving cigarette volumes in those markets (i.e. lower unemployment and other macro drivers).

Please see city specific charts in the Appendix

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Exhibit 23: JUUL share coinciding with accelerated cigarette volume declines in Seattle, New York, Philadelphia, and Nashville, but cigarette volumes improving across other markets



Cigarette Volumes YoY and JUUL Market Share

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Our 22% cannibalization rate estimate was based on 1Q18 data, but the moderation in reported 2Q18 industry volumes declines makes it more difficult to measure 2Q18

**cannibalization.** In order to gauge how much of JUUL's growth is coming at the expense of cigarette volumes, we decomposed the drivers behind MO's -5.5% industry volume decline estimate in 1Q18. We assume a baseline decline of 3.4% reflecting 2% secular declines and a 1.4% impact from pricing (4.7% pricing at -30% elasticity), assumed a 100 bps headwind from California and higher gas prices were a ~66 bps headwind based on our regression analysis. This suggests JUUL could have accounted for up to 40 bps of the decline. Multiplying 1Q17 cigarette volumes by JUUL's 40 bps impact suggests up to ~10 MM packs could have been displaced by JUUL in 1Q18. In 1Q18, JUUL sold ~45 MM refills, and dividing the packs displaced by total JUUL volumes equates to ~22% of JUUL sales coming a the expense of cigarettes (i.e. its "cannibalization rate"). In 2Q18, MO indicated that industry cigarette volume declines moderated to -3.5% (while BAT suggested they were -5.5% in 1H18), a sequential improvement despite a continued rise in gas prices in 2Q18 (+16% YoY vs. +11% in 1Q18), and strong reported cigarette net pricing (MO +5.8% in 2Q18). These factors leave little room for a potential headwind from JUUL.

Nielsen market share data supports our view that JUUL can be a ~100 bps annual headwind to industry volumes over the next five years. In particular, JUUL's market share in New York (12.9%) and Seattle (10%), despite only being in these markets since 2016/early 2017 supports our forecast that JUUL's national share of cigarette volumes can approach 15% by 2022. We expect this growth to be driven by increasing distribution, awareness, and sales/store. We estimate JUUL will end 2018 with ~7.0% market share (vs. 4.9% today) of cigarette volumes in measured channels as its share is growing by ~50 bps per month, which would mean that it gained 6.0% share this year. Our 15% market share forecast assumes a significant deceleration to 2% annual share gains starting in 2019, which we view as reasonable. However, we still assume that JUUL's cannibalization rate stays relative low, increasing to 26.5% in 2019, and eventually to 40% by 2022, meaning that we assume 60% of its 2022 volumes will not have an impact

cigarette volumes. This results in an incremental ~115 bps headwind to annual cigarette volume declines starting in 2018 with the greatest impact in 2019 as JUUL gains critical mass.

However, we believe it is prudent to look at a range of market share and cigarette cannibalization rate scenarios to quantify the impact that it can have on cigarette volumes. In Exhibit 21, we show a broader framework for potential market share and cannibalization scenarios.

	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Cigarettes Baseline Cigarette Volumes (Sticks, billion) Packs (mill.) YoY Chg	270 13,495 (0.3%)	264 <b>13,176</b> (2.4%)	253 12,649 (4.0%)	244 12,206 (3.5%)	236 11,779 (3.5%)	227 11,367 (3.5%)	219 10,969 (3.5%)	212 10,585 (3.5%)
Cigarette Volumes Measured Channels (Packs) ҮоҮ % Total	11,044 -0.5% 82%	10,818 -2.0% 82%	10,456 -3.4% 83%	10,090 (3.5%) 83%	9,737 (3.5%) 83%	9,396 (3.5%) 83%	9,067 (3.5%) 83%	8,750 (3.5%) 83%
Cigarette Volumes Non-Measured Channels (Packs) YoY % Total	2,451	2,358 -3.8% 18%	2,193 -7.0% 17%	2,117 -3.5% 17%	2,043 -3.5% 17%	1,971 -3.5% 17%	1,902 -3.5% 17%	1,835 -3.5% 17%
JUUL Refills JUUL Refills - Measured Channels	1	7.51	55	434	841	1.034	1,179	1,312
YoY Chg % of Baseline Cigarette Volumes in Measured Channels Ending Share	-	1175% 0.1%	637% 0.4% 1.3%	683% 4.3% 7.3%	94% 8.6% 10.0%	23% 11.0% 12.0%	14% 13.0% 14.0%	11% 15.0% 16.0%
JUUL Refilis - Non-Measured Channels YoY Chg	0	5 1474%	26 468%	202 683%	340 68%	359 6%	310 -14%	246 -20%
% Sales in Non-Measured Channels (Euromonitor) % of Baseline Cigarette Volumes in Non- Measured Channels	32.9% 0.0%	37.7% 0.2%	31.8% 1.2%	31.8% 9.6%	28.8% 16.7%	25.8% 18.2%	20.8% 16.3%	15.8% 13.4%
Total JUUL Refill Sales	1	12	81	636	1,181	1,393	1,488	1,559
YoY Chg % of Baseline Cigarette Volumes	0.0%	1273% 0.1%	574% 0.6%	683% 5.2%	86% 10.0%	18% 12.3%	7% 13.6%	5% 14.7%
JUUL - % Volumes Sourced From Cigarettes JUUL Refill Volumes Sourced From Cigarettes	0	8	1	22.0% 140	26.5% 313	31.0% 432	35.5% 528	40.0% 623
Cigarette Volumes Post JUUL (Packs) YoY Chg in Cigarette Volumes Incremental Decline	13,495 <i>(0.3%)</i>	13,176 (2.4%)	12,648 <b>(4.0%)</b>	12,066 (4.6%)	11,466 (5.0%) -148 bps	10,935 (4.6%) -113 bps	10,441 (4.5%)	9,962 (4.6%) -109 bps
Combined Volumes YoY Chg	13,496	<b>13,188</b> (2.3%)	12,730 (3.5%)	12,842 0.9%	12,960 0.9%	12,760 (1.5%)	12,457 (2.4%)	12,144 (2.5%)
JUUL Share of Combined Volumes		12.374/	(0.074)	5.0%	9.1%	10.9%	11.9%	12.8%

Source: Company data, Morgan Stanley Research



**Exhibit 25:** Annual cigarette volume declines assuming JUUL share of cigarette volumes and cannibalization rates

#### Annual Cigarette Volume Declines



Source: Company data, Morgan Stanley Research

# Appendix

Exhibit 26: New York Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### Exhibit 28: Seattle Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

#### Exhibit 27: New York JUUL+ Cigs Volume YoY Growth



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Exhibit 29: Seattle JUUL+ Cigs Volume YoY Growth



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)

Exhibit 30: Houston Cigarette Volume Growth and JUUL Market Share



Exhibit 32: Denver Cigarette Volume Growth and JUUL Market Share

Denver - YoY Cigarette EQ growth 2.0% 10.0% 0.0% 8.0% (2.0%) 6.0% (4.0%) 4.0% (6.0%) 2.0% (8.0%) 0.0% (10.0%) 05/19/18 08/12/17 07/14/18 01/30/16 12/31/16 04/22/17 11/05/16 02/25/17 **71/17** 09/10/16 0/07/17 01/27/18 03/24/18 03/26/16 05/21/16 07/16/16 12/02/17 Cigarette EQ YoY JUUL Market Share

Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

# **Exhibit 34:** Nashville Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

Exhibit 31: Houston JUUL+ Cigs Volume YoY Growth

Houston - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY



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Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18)



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

Exhibit 35: Nashville JUUL+ Cigs Volume YoY Growth



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

### Exhibit 33: Denver JUUL+ Cigs Volume YoY Growth

#### Exhibit 36: Boston Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

#### Exhibit 38: St. Louis Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

#### Exhibit 40: New Orleans Mobile Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

#### Exhibit 37: Boston JUUL+ Cigs Volume YoY Growth

Boston - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

#### Exhibit 41: New Orleans Mobile JUUL+ Cigs Volume YoY Growth

New Orleans Mobile - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

# Exhibit 39: St. Louis JUUL+ Cigs Volume YoY Growth

St. Louis - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY



#### Exhibit 42: Dallas Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

Exhibit 43: Dallas JUUL+ Cigs Volume YoY Growth

Dallas - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

# **Exhibit 44:** San Francisco Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

 $\ensuremath{\textit{Exhibit}}$  46: Chicago Cigarette Volume Growth and JUUL Market Share



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

#### Exhibit 45: San Francisco JUUL+ Cigs Volume YoY Growth



Source: Nielsen XAOC + C, Morgan Stanley Research, (data as of 08/11/18

### Exhibit 47: Chicago JUUL+ Cigs Volume YoY Growth

Chicago - Total JUUL + Cigs EQ YoY vs. Cigarette EQ YoY







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Note: The information supplied by Nielsen and presented here by Morgan Stanley is based on data believed to be reliable at the time supplied by Nielsen but is neither all-inclusive nor guaranteed by Nielsen. Without limiting the generality of the foregoing, specific data points may vary considerably from other information sources. Any opinions expressed herein reflect the judgment of Morgan Stanley at this date and are subject to change.

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(as of August 31, 2018)

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	COVERAGE UI	NIVERSE	INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
STOCK RATING	COUNT	% OF	COUNT	% OF	% OF	COUNT	% OF
CATEGORY		TOTAL		TOTAL IBC	RATING		TOTAL
				(	CATEGORY		OTHER
							MISC
Overweight/Buy	1156	37%	296	40%	26%	546	39%
Equal-weight/Hold	1363	44%	348	48%	26%	635	45%
Not-Rated/Hold	50	2%	5	1%	10%	7	0%
Underweight/Sell	553	18%	82	11%	15%	223	16%
TOTAL	3,122		731			1411	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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INDUSTRY COVERAGE: Tobacco

COMPANY (TICKER)	RATING (AS OF)	PRICE* (09/07/2018)		
Pamela Kaufman, CFA				
Atria Group, Inc. (MO.N) Philip Morris International Inc (PMN)	E (11/29/2016) O (03/31/2008)	\$60.93 \$78.60		

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