## Agenda

<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIB overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Markets</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Wholesale Payments</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Closing remarks</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Notes</td>
<td>33</td>
</tr>
</tbody>
</table>
We delivered strong results and had a record year in 2018

Adjusted revenues\(^1\) and income\(^2\) ($B)

<table>
<thead>
<tr>
<th>CIB ROE(^3)</th>
<th>13%</th>
<th>14%</th>
<th>16%</th>
<th>14%</th>
<th>16%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital ($B)</td>
<td>$61</td>
<td>$62</td>
<td>$64</td>
<td>$70</td>
<td>$70</td>
</tr>
</tbody>
</table>

Revenue\(^1\)

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$32.9</td>
<td>$33.3</td>
<td>$35.1</td>
<td>$34.6</td>
<td>$36.4</td>
</tr>
</tbody>
</table>

Net income\(^2\)

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>$8.6</td>
<td>$9.2</td>
<td>$10.9</td>
<td>$10.8</td>
<td>$12.0</td>
</tr>
</tbody>
</table>

Overhead ratio\(^4\)

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead</td>
<td>61%</td>
<td>59%</td>
<td>54%</td>
<td>56%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Heritage TSS ROE

Heritage IB ROE

Note: For footnoted information, refer to Page 33
Expenses increased due to higher revenues and additional investments

2017 to 2018 ($B)\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue-related growth</td>
<td>$19.4</td>
<td>$20.7</td>
</tr>
<tr>
<td>Tech investments</td>
<td>$0.5</td>
<td></td>
</tr>
<tr>
<td>Non-tech investments</td>
<td>$0.4</td>
<td>$0.3</td>
</tr>
<tr>
<td>Other</td>
<td>$0.1</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Expense adjusted for legal expense

O/H ratio 56%  
2017  
Revenue-related growth  
Tech investments  
Non-tech investments  
Other  
2018  
O/H ratio 57%
ROE increased from 14.5% in 2017 to 15.9% in 2018

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>Revenue</th>
<th>Rates</th>
<th>Expenses</th>
<th>Credit Cost &amp; Other</th>
<th>Tax</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>14.5%</td>
<td>1.3%</td>
<td>0.8%</td>
<td>(1.7)%</td>
<td>(0.1)%</td>
<td>1.1%</td>
<td>15.9%</td>
</tr>
</tbody>
</table>

2017 Actual Revenue Rates Expenses Credit Cost & Other Tax 2018

JPMorgan Chase & Co.
CIB gained market share faster than peers, strengthening our leadership across businesses

### Gaining market share at a faster rate than any of our peers

<table>
<thead>
<tr>
<th></th>
<th>2018 vs. 2014 (Δ%)</th>
<th>2018 vs. 2017 (Δ%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPM</td>
<td>1.6%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Peer 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer 11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Strengthening global leadership positions across businesses

#### No. of businesses where JPM is ranked

- **#1**
- **#2-3**
- **#4-6**

**2014**
- Equity Capital Markets: 14
  - G10 FX: 2
  - Commodities: 8
  - Credit: 1
  - SPG: 1
  - Global Equities: 7
  - Cash Equities: 1
  - Equity Derivatives: 1
  - Futures & Options: 1

**2018**
- Equity Capital Markets: 16
  - G10 FX: 1
  - Commodities: 7
  - Credit: 1
  - SPG: 1
  - Global Equities: 5
  - Cash Equities: 1
  - Equity Derivatives: 1
  - Futures & Options: 1

Note: For footnoted information, refer to Page 34.
Global Investment Banking (GIB) grew share across all regions resulting in 8.7% market share in 2018 (highest since 2009)

Growth in GIB share of wallet across regions, 2014 to 2018

- ~40 bps
- ~90 bps
- ~110 bps

#1 worldwide in Investment Banking fees for 10 consecutive years
Participated in 7 of the 10 top fee paying deals in 2018
Generated $7.5 billion in fees in 2018, a full year record

1 Growth figures are rounded to the nearest tenth
Source: Dealogic as of Jan 1, 2019; ECM excludes shelf deals. DCM excludes money market, short-term debt
Markets business continued to increase market share across products while delivering strong returns.

**Equities**

- **Industry wallet ($B)**
- **Market share**

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Share</th>
<th>Industry Wallet ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7.9%</td>
<td>$62</td>
</tr>
<tr>
<td>2015</td>
<td>8.4%</td>
<td>$68</td>
</tr>
<tr>
<td>2016</td>
<td>9.8%</td>
<td>$59</td>
</tr>
<tr>
<td>2017</td>
<td>9.9%</td>
<td>$59</td>
</tr>
<tr>
<td>2018</td>
<td>11.2%</td>
<td>$62</td>
</tr>
</tbody>
</table>

**FICC**

- **Industry wallet ($B)**
- **Market share**

<table>
<thead>
<tr>
<th>Year</th>
<th>Market Share</th>
<th>Industry Wallet ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>9.2%</td>
<td>$118</td>
</tr>
<tr>
<td>2015</td>
<td>10.1%</td>
<td>$109</td>
</tr>
<tr>
<td>2016</td>
<td>11.4%</td>
<td>$117</td>
</tr>
<tr>
<td>2017</td>
<td>11.1%</td>
<td>$106</td>
</tr>
<tr>
<td>2018</td>
<td>11.9%</td>
<td>$96</td>
</tr>
</tbody>
</table>

**Global Markets market share (Δ%)**

- **JPM**: +2.8% vs. 2014, +0.9% vs. 2017
- **Peer 1**: ...
- **Peer 2**: ...
- **Peer 3**: ...
- **Peer 4**: ...

**Marginal ROE, 2018**

- **Equities**: Not to scale
- **FICC**: Cost of capital

---

Note: For footnoted information, refer to Page 35.
CIB Treasury Services business has grown significantly since 2016 through a combination of rising rates and organic growth.

**Strong growth in CIB TS revenue and operating leverage**

- Revenue ($B)
- Expenses

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$3.6</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>$4.2</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$4.7</td>
<td></td>
</tr>
</tbody>
</table>

CAGR (2016-18): +14%

**Strong growth in deposits...**

- Operating Deposits
- Non-Operating Deposits

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Deposits</th>
<th>Non-Operating Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CAGR (2016-18):
- Operating Deposits: +7%
- Non-Operating Deposits: +9%

**… across all client segments**

<table>
<thead>
<tr>
<th>Region</th>
<th>Deposit CAGR (%) FY18 vs. FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporates</td>
<td>6%</td>
</tr>
<tr>
<td>FIG</td>
<td>13%</td>
</tr>
</tbody>
</table>

**…and in all regions**

<table>
<thead>
<tr>
<th>Region</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMEA</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APAC</td>
<td></td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>LATAM</td>
<td></td>
<td></td>
<td>8%</td>
</tr>
</tbody>
</table>
Securities Services continues to transform itself; unprecedented new business wins and improved operating models have yielded record financial results.

Winning industry-leading mandates…

…resulted in highest recorded revenue and operating margins

Significant growth and improvements in scale as we optimized our infrastructure.

Transformed the business to deliver operational excellence and improved platform stability.

Investments in technology driving scale and efficiencies.

**Assets Under Custody**

- Total 2016-2018 change

**Revenue ($B)**

- Total 2016-2018 change

**Operating Margin**

- Total 2016-2018 change

- +13%

- +18%

- +9ppts
We continue to focus on technology investments, productivity and efficiency

**Software Engineering Efficiency**
*Improve the speed, quality and security of software delivery*

**Platform Simplification**
*Drive agility, lower costs and improve time to market*

**Portfolio Governance**
*Provide transparency, consistent tooling and governance of the investment lifecycle*

---

We continue to invest in...

- **Best in class client experiences**
  - Digital, seamless, omni-channel user experiences
  - Focus on personalization and intelligence
  - Simple and self service

- **Leveraging and exposing APIs**
  - Standardized, re-usable components
  - Internally within JPM and externally with clients

- **Data and advanced analytics**
  - Embedded across the product portfolio
  - Enable data-driven decision making

- **Resilient and scalable infrastructure**
  - Multi-cloud, hybrid-cloud strategy
  - Optimization and rationalization

- **Proactive cybersecurity to keep pace with evolving threat landscape**
  - Continuous data protection
  - Secure client authentication

- **Innovation by leveraging emerging technologies**
  - Artificial Intelligence / Machine Learning
  - Containers
  - Distributed Ledger

---

To achieve this, we are driving productivity and efficiency through a transformation across our Technology organization
## Agenda

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIB overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Markets</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Wholesale Payments</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Closing remarks</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Notes</td>
<td>33</td>
</tr>
</tbody>
</table>
Select Markets topics for today

**Growth in Equities**
- Multi-year performance, especially in Cash Equities and Prime Finance
- Key focus areas for the Equities franchise going forward

**Impact of electronification**
- Drivers of electronification and its impact on client needs
- Pace of electronification and estimated impact to overall Markets franchise

**Performance of client franchise**
- Growth in share across Institutional and Corporate clients
- Investments to help address our clients’ evolving needs
Our Equities franchise has steadily gained market share across our key products, benefiting from multi-year investments in execution capabilities.

Our market share increased 330bps over the last 5 years…

- Cash Equities: Improved ranking from #6 in 2014 to #3 in 2018
- Equity Derivatives: Ranked #1 since 2015
- Prime Finance: Ranked #2 since 2016

...driven by improved performance across all products

Note: For footnoted information, refer to slide 36
Sustained investments and focus in Cash Equities has spurred substantial growth

Global Cash Equities revenue

NOT TO SCALE
- **High Touch**
- **Low Touch**
- **Program Trading**

<table>
<thead>
<tr>
<th>Year</th>
<th>Industry wallet ($B)</th>
<th>CAGR 2014-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$20.7</td>
<td>+7%</td>
</tr>
<tr>
<td>2015</td>
<td>$21.2</td>
<td>+30%</td>
</tr>
<tr>
<td>2016</td>
<td>$17.4</td>
<td>+25%</td>
</tr>
<tr>
<td>2017</td>
<td>$17.1</td>
<td>(4)%</td>
</tr>
<tr>
<td>2018</td>
<td>$16.3</td>
<td>(6)%</td>
</tr>
</tbody>
</table>

Increase in share of Cash Equities volumes driven by Low Touch

- **Total JPM Cash Equities volume as a % of total market volume**
- **Low Touch JPM volume as a % of total market volume**

Our Cash Equities business is benefiting from stronger execution capabilities, higher Low Touch volumes and increased global reach

---

1 Source: Coalition, preliminary 2018 analysis of global industry revenue pool
Market share gains in all regions yielded record revenue and client balances in Prime Finance.

Prime Finance Client Balances by Product Region

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>EMEA</th>
<th>APAC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td>32%</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
<td>32%</td>
</tr>
</tbody>
</table>

Non-U.S. as a % of total:
- 2014: 22%
- 2015: 22%
- 2016: 22%
- 2017: 32%
- 2018: 32%

Synthetics as a % of Total Global Prime Finance Revenue

<table>
<thead>
<tr>
<th>Year</th>
<th>Synthetic</th>
<th>Cash</th>
<th>Total Prime Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>10%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>2015</td>
<td>10%</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>2016</td>
<td>15%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td>2017</td>
<td>15%</td>
<td>85%</td>
<td>100%</td>
</tr>
<tr>
<td>2018</td>
<td>35%</td>
<td>65%</td>
<td>100%</td>
</tr>
</tbody>
</table>

CAGR 2014-18:
- Synthetic: +10%
- Cash: +36%
- Total Prime Revenue: +15%

Balance sheet ratio change 2014-2018¹ (%)
- 2014: 12%
- 2015: 12%
- 2016: 12%
- 2017: 12%
- 2018: 12%

¹ FY Average Third Party Assets divided by FY Average Gross Client Financing Balances
Equities franchise will continue to pursue technology and talent investments.

**Pillars of our strategy**

- **Invest in product and technology**
- **Expand scale and geographic reach**
- **Enhance coverage, service and operational framework**

2019 performance will be market dependent but expect scale, liquidity solutions and client facing platforms to be key differentiators.
Electronification has been primarily driven by two types of factors and has created an even greater need for more sophisticated execution tools

Key types of electronification drivers

- **Electronification driven by client and dealer demand for choice, transparency, liquidity and efficiency**
  - This is a steady long term trend that is stabilizing in the most standardized markets such as FX
  - As a result, clients benefit from increasing innovation and execution tools which reduce execution costs
- **Regulations around execution standards** (most recently MiFID II) have also acted as a catalyst for some asset classes and driven greater electronification
  - As a result, clients are looking to leverage work flow benefits of electronic execution to reduce operational costs

Illustration of impact over last few years

- **FX Spot**
  - Electronic volumes as a % of total
  - 2017-2018 growth in electronic volumes

- **Euro Swaps**
  - Electronic volumes as a % of total
  - 2017-2018 growth in electronic volumes

Electronification continues to drive client need for more sophisticated execution tools to reduce execution and operational costs

---

1 Euro Swaps volumes exclude Internal and Compression trades
We are investing in technology to provide clients with more sophisticated execution tools

**Example: Algo Central**

- Single entry point providing **seamless access to JPM’s execution algos** and analytics to help reduce costs

**Tailored Execution**
- Ability to customize your order structure

**Wider availability**
- Integrated with JPM proprietary and third party distribution platforms

**Rich analytics**
- Access to pre-trade predictions, live execution monitors and post-trade performance analytics

**Real-time control**
- Change speed, execution style and even your strategy while the order is live
Pace of electronification has varied across different FICC products

### Electronification for select FICC asset classes

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Expected scenario 2018-2020</th>
<th>Current Electronification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interest Rate Swaps</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Americas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(EMEA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fx Cash</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fx Options</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Em Local Currency Bonds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Government Bonds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Americas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(EMEA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Credit Default Swaps</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Key observations

1. **Interest Rate Swaps**
   - Higher Electronic RFQ volumes
   - Lower volumes on Central limit order book type execution

2. **Fx Cash**
   - Market fragmentation & rise of non-bank liquidity providers
   - Investments in e-trading infrastructure positioned us well

3. **Fx Options**
   - Lower execution volumes on multi-dealer platforms
   - Yield compression marginally offset by increased e-volumes

4. **Em Local Currency Bonds**
   - Voice liquidity preferred for large sizes
   - Not all instruments listed on multi-dealer platforms
   - MiFID II deferral impacted actual electronification

---

Source: JPMorgan Chase internal estimates; all estimates are global averages unless a regional product is specified

Note: For footnoted information, refer to slide 37
We remain highly committed to strengthening our diversified client franchise, building on top of our consistent Markets wallet growth with Institutional and Corporate clients.

### Institutional clients

- **JPM market share with Institutional clients**
  - # JPM rank

<table>
<thead>
<tr>
<th>Year</th>
<th>Rank</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>#1</td>
<td>8.3%</td>
</tr>
<tr>
<td>2015</td>
<td>#1</td>
<td>8.7%</td>
</tr>
<tr>
<td>2016</td>
<td>#1</td>
<td>9.5%</td>
</tr>
<tr>
<td>2017</td>
<td>#1</td>
<td>9.7%</td>
</tr>
<tr>
<td>2018</td>
<td>#1</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

### Corporate clients

- **JPM market share with Corporate clients**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rank</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>#1</td>
<td>7.7%</td>
</tr>
<tr>
<td>2015</td>
<td>#1</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>8.9%</td>
</tr>
</tbody>
</table>

**Note:** For footnoted information, refer to slide 38.
Going forward, we are investing to address clients’ evolving needs for capital and risk solutions

**Next-gen analytics**

- **Increased continuity** and **simplified workflow** between clients and us – across research, sales and trading
- Multi-asset **pre-trade analytics and data platform** for clients
- **Smart quoting** and automated risk management for trading functions
- Data **analytics and visualization** platform for sales functions

**Best-in-class execution**

- Providing client access to **next generation algo execution**, enhanced with pre-trade, real-time and post-trade capabilities
- **Enabling systematic market making** through Artificial Intelligence-driven execution capabilities
- **Aggregating client and market data** to enhance trade recommendations, through analytics and research

**Enhanced client experience**

- **Quick, efficient and secure** access, authentication, documentation and onboarding
- APIs enabling access to growing number of services, **whenever and however clients choose**
- **Customization through smart search**, while delivering curated solutions and topical content to clients
<table>
<thead>
<tr>
<th></th>
<th>Agenda</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIB overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Markets</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Wholesale Payments</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Closing remarks</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Notes</td>
<td>33</td>
</tr>
</tbody>
</table>
Wholesale Payments recorded $11B revenue and grew by 28% over the last two years

Wholesale Payments includes following services delivered to clients across the firm:
- Treasury Services
- Merchant Acquiring
- Commercial Card
- Trade Finance

Wholesale Payments revenue growth, $B

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$8.81</td>
</tr>
<tr>
<td>2018</td>
<td>$11.2</td>
</tr>
</tbody>
</table>

Total revenue growth 2016-2018: 28%

#1 Treasury Services bank worldwide
#1 Merchant Acquirer in the U.S. & Europe
Industry leading virtual and traditional card payment solutions
$1 trillion+ in annual merchant processing volume

$6 trillion daily payments Firmwide

---

1 Merchant Acquiring revenue in 2016 excludes a one time gain from sale of stake in Visa Europe
We bring the entire suite of Wholesale Payments products across our clients of all sizes and complexities.
Our strong performance in Firmwide Treasury Services over the course of the last two years has made us a market leader.

FY2016 Competitor Revenue Benchmark

FY2018 Competitor Revenue Benchmark

 Ranked #1 at the Firmwide level due to faster growth than our key competitors

Note: For footnoted information, refer to slide 39.
We are creating a unique value proposition for our clients through our integrated Wholesale Payments strategy

Our Wholesale Payments strategy…

**Any product, anywhere**
- Accept and collect from any method of payment, in any currency, anywhere in the globe

**Flexible channel connectivity**
- Enable clients to connect to us in whatever way they want, from a single global exchange to APIs

**Real-time analytics & optimization**
- Provide data-driven insights to our clients, to improve their operational and capital efficiency

...is supported by…

**Integrated global platforms**
- Offer scalable modular architecture that supports full capabilities across payments and cash management needs

**Best-in-class controls**
- Provide a robust security and control environment with the backing of a single, trusted counterparty

**Innovation & partnership agenda**
- Offer clients maximum choice and access to best of breed solutions including in-house and partner-led innovations
We continue to make progress on delivering global, scalable platforms

**Core Payments**

- **Graphite**
  - Live today in several countries
  - Featuring a number of state-of-the-art configurable components

- **Glass**
  - Launching new platform with pilot merchants in July 2019
  - Building capabilities and partnerships across APAC and LATAM countries

**Merchant Acquiring**

- **Helix**
  - Interbank Information Network
    - 185+ signed letters of intent
    - Live with several banks
    - First U.S. bank with a digital coin

**Innovation**

- **IIN**
  - JPM Coin
    - Reach ubiquity with 200+ banks
    - Launch apps on the IIN network
    - Enable JPM Coin to other platforms and standard blockchain networks

---

1 JPM Coin is a prototype. JPMorgan Chase will complete all internal procedures and satisfy all regulatory and compliance obligations, prior to any live products or services being launched utilizing JPM Coin.
Interbank Information Network and JPM Coin: examples of Wholesale Payments innovation

Interbank Information Network
Eliminating Information Inefficiencies

Current model

IIN Vision

- Global distributed network for real-time, interconnected flow of information
- 185+ banks with signed LOIs – on target to be the largest blockchain-based banking information network
- Initial focus on building utility applications that address immediate pain points
  - Resolve: streamline process for resolving inquiries related to payments (live today)
  - Validate: global beneficiary and account validation (in testing)
- Longer-term vision to build a platform ecosystem with value-added applications developed by participants targeting more complex issues: onboarding, KYC, errors, returns, etc.

JPM Coin
Will Enable 24/7/365 Global Value Transfer

- Digital coin designed to facilitate instantaneous payments using distributed ledger technology
  - Will be available to JPMorgan Chase institutional clients
  - Prototype tested successfully
- JPM Coin will facilitate payments in United States Dollars
  - Will be extended to other major currencies in the future
  - Will be issued on Quorum Blockchain, but can be used on other blockchain platforms
- Many potential uses in the future for institutional clients of JPMorgan Chase:
  - Cross-border money movement 24/7/365 – outside traditional banking hours
  - Payments for asset transfers over blockchain
  - Internal liquidity optimization for large, complex corporate clients

1 JPM Coin is a prototype. JPMorgan Chase will complete all internal procedures and satisfy all regulatory and compliance obligations, prior to any live products or services being launched utilizing JPM Coin.
Product innovation delivered over the past 12 months

**Key Milestones**

- **Global MassPay**
  - 100+ countries
  - ~50 currencies

- **Virtual Account Management**
  - Live in all regions by March 2019
  - ~40 currencies

- **APIs & Open Banking**
  - Industry-leading API environment

- **Digitization / Automation**
  - Account opening in < 70 seconds
  - 98%+ STP rate

- **Real-Time Payments**
  - First bank to be live in USD, EUR and GBP
  - Clients across CIB, CB and Chase.com

**Looking Ahead**

- 120+ countries
- 70+ currencies

- Complete roll-out across all major markets

- Launch new front-end terminals for clients
- Expand partnerships with FinTechs, ERP / TMS providers
- Become a leader in Open Banking in EMEA

- Increase automation across client lifecycle
- Expand Machine Learning-based solutions

- Expand leadership in RTP globally
- Explore new real time cross-border opportunities
U.S. Real-Time Payments: product innovation at scale

1. Announcement and prioritization of use cases
   - Live in November 2017
   - Shaped industry and infrastructure development as an early adopter
   - Prioritized use cases:
     - Just-in-time supplier payments
     - SMB Payments
     - Last minute bill payment
     - External bank transfers
     - Sending emergency funds

2. Use case development and Roll-out
   - Roll-out with pilot clients and enterprise providers to design best-in-class solutions

3. Integration
   - Fully integrated with Chase.com – pilot roll-out
   - Actively marketed to clients and formed partnerships with 3rd parties

4. Acceleration
   - Full roll-out to Chase customers and key clients

As of April 2019, JPMC will be the only bank in the world with all three (USD / GBP / EUR) Real-Time Payments capabilities
**eCommerce platform: Example of our end-to-end Wholesale Payments solutions and benefits**

<table>
<thead>
<tr>
<th>Consumers pay for goods</th>
<th>eCommerce platform manages funds</th>
<th>Flexible pay-outs to merchants</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Consumer pays in local currency via their preferred method of payment</strong></td>
<td><strong>Funds are received and stored in multi-currency eWallets</strong></td>
<td><strong>Funds due to merchants are paid out with flexible options and controls</strong></td>
</tr>
<tr>
<td>- Seamless global payment acceptance gateway for consumers</td>
<td>- eCommerce client provides value-added services to its merchants (e.g., multi-currency, stored-value eWallets)</td>
<td>- Flexible pay-outs to merchants</td>
</tr>
<tr>
<td>- Consumers pay for goods in their preferred methods of payment and local currency</td>
<td>- Client treasury is able to retain float and improve operational efficiency</td>
<td>- Multiple methods of payment (e.g., RTP)</td>
</tr>
<tr>
<td>- Transparent and fully integrated FX rates</td>
<td></td>
<td>- Preferred currency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Custom pay-out criteria and schedule</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Spot or guaranteed FX rates via APIs</td>
</tr>
</tbody>
</table>

---

**Optimize Treasury**

- Liquidity management to optimize capital efficiency
- End-to-end reporting and reconciliation for improved efficiency, visibility and control
- Global Earnings Credit Rate (ECR) to offset bank fees
Our strategic focus is to be the leader in delivering solutions to meet all of our clients’ treasury and payments needs.

**Middle Market and Small Businesses**
- Bundled solutions for payment needs, including merchant acquiring services and core cash management
- Focus on simplicity, ease of implementation and user experience
- Integrated set of digital capabilities with multiple connectivity options

**Large Multinational Corporates**
- Consultative approach to design bespoke solutions, providing visibility and efficiency across liquidity and payments
- Existing GCB and GIB clients
- Opportunities in every region and industry
- $1 billion gap to #1

**FIG (Banks, NBFIs and Public Sector)**
- Global clearing capabilities with leading scale and efficiency
- Deep expertise in every client segment and region
- Operational excellence and best-in-class controls
- Industry-leading innovations – e.g., Interbank Information Network (IIN) blockchain service

We have a complete suite of products and services to serve clients of all segments and sizes and can tailor our solutions for their individual, unique needs.
## Agenda

<table>
<thead>
<tr>
<th></th>
<th>Agenda Item</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIB overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Markets</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Wholesale Payments</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Closing remarks</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Notes</td>
<td>33</td>
</tr>
</tbody>
</table>
Expense walkforward (adjusted)

2018 to 2019 Outlook ($B)\(^1\)

- **2018**: $20.7
- **Revenue-related growth**: $0.1
- **Tech investments**: $0.3
- **Non-tech investments**: $0.2
- **FDIC / Other**: $(0.4)
- **2019 Outlook**: ~$21

\(^1\) Expense adjusted for legal expense
ROE Walk: 2018 Actuals – Medium-term target

- **2018**: 15.9%
- **Net growth**: ~3%
- **Higher capital**: (2.2)%
- **Other**: ~(0.5)%
- **Medium-term**: ~16%

Revenue: ~$40B
Overhead Ratio: 54%
Capital: $80B
We remain focused on maintaining day-to-day discipline, optimizing our current model and transforming for the future.

**Maintaining day-to-day discipline**
- Continuous focus on **client experience** and **ease of doing business**
- **Best-in-class execution** and delivery against our core strategic priorities
- Unfaltering risk, credit, capital, liquidity and expense discipline

**Optimizing our current model**
- Closing addressable gaps¹ in our wallet, $B

<table>
<thead>
<tr>
<th>Year</th>
<th>GIB</th>
<th>TS</th>
<th>Security Services</th>
<th>FICC</th>
<th>Equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$5.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>$3.65</td>
<td>$0.10</td>
<td>$0.55</td>
<td>$0.75</td>
<td>1.50</td>
</tr>
</tbody>
</table>

**Transforming for the future**
- Investing in **new and emerging tech** to develop a future-proof infrastructure
- **Reshaping our approach to data** to unlock the true power of ML & AI and transform the way we do business with our clients
- Develop new business opportunities and create an unparalleled client experience

Note: For footnoted information, refer to slide 40

---

1. Footnote: For additional details, refer to slide 40.
<table>
<thead>
<tr>
<th></th>
<th>Agenda</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CIB overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Markets</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Wholesale Payments</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Closing remarks</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>Notes</td>
<td>33</td>
</tr>
</tbody>
</table>
Notes on slide 1 – We delivered strong results and had a record year in 2018

Notes

1. Adjusted revenue excludes the impact of business simplification initiatives. As a result, adjusted revenue is lower by $1.9 billion, $353 million, $220 million, $86 million and $47 million for 2014, 2015, 2016, 2017 and 2018, respectively

2. Adjusted net income excludes the impact of (1) business simplification on revenue and expense, and (2) legal expense. As a result, adjusted net income is higher by $1.7 billion, $1.1 billion, $72 million, $16 million and $226 million for 2014, 2015, 2016, 2017 and 2018, respectively

3. CIB ROE represents adjusted net income/capital. Reported ROE was 10%, 12%, 16%, 14% and 16%, for 2014, 2015, 2016, 2017 and 2018, respectively

4. Adjusted overhead ratio represents adjusted revenue/adjusted expense
Notes on slide 4 – CIB gained market share faster than peers, strengthening our leadership across businesses

Notes

1. CIB market share analysis – Source: Coalition. Market share analysis reflects JPMorgan Chase’s share of the global industry revenue pool and is based on JPMorgan Chase’s business structure.

2. Peer numbering may be different across pages.


4. Ranks for Markets, Treasury Services and Securities Services - Source: Coalition, preliminary 2018 rank analysis based on following peer-sets and is based on JPMorgan Chase’s business structure:
   - Markets (BAML, BARC, BNPP, CITI, CS, DB, GS, HSBC, JPM, MS, SG and UBS)
   - Treasury Services (BAML, BNPP, CITI, DB, HSBC, JPM, SG, SCB and WFC)
   - Securities Services (BAML, BBH, BNY, CITI, CACEIS, DB, HSBC, JPM, NT, RBC, SCB, SS and SG)

5. Co-ranked #1
Notes on slide 6 – Markets business continued to increase market share across products while delivering strong returns

Notes

1. Source: Coalition, preliminary 2018 market share analysis reflects JPMorgan Chase’s share of the global industry revenue pool and is based on JPMorgan Chase’s business structure. FY18 analysis is based on preliminary results and peer-set BAML, BARC, BNPP, CITI, CS, DB, GS, HSBC, JPM, MS, SG and UBS

2. Analysis reflects top 4 peers within peer-set

3. Peer numbering may be different across pages
Notes on slide 11 – Our Equities franchise has steadily gained market share across our key products, benefiting from multi-year investments in execution capabilities

Notes

1. Source: Coalition 2018 preliminary Competitor Analytics. Equities Market Share reflects share of the global industry revenue pool. Market Share & rank analysis based on JPMorgan Chase’s business structure. FY18 analysis is based on preliminary results and peer-set BAML, BARC, BNPP, CITI, CS, DB, GS, HSBC, JPM, MS, SG and UBS

2. Analysis reflects top 4 peers within peer-set

3. Peer numbering may be different across pages
Notes on slide 17 – Pace of electronification has varied across different FICC products

Notes

1. % Electronic is based on notional volume executed through Single Dealer Venues, Multi Dealer Venues / Non-Central Limit Order Books and All-to-all / Central Limit Order Books

Notes on slide 18 – We remain highly committed to strengthening our diversified client franchise, building on top of our consistent Markets wallet growth with Institutional and Corporate clients.

Notes

1. Source: Coalition Institutional Wallet Analytics – based on the leading 1,300 Institutional Clients across Global Markets products only
2. Source: Coalition Corporate Wallet Analytics – based on the leading 2,000 Corporate Clients across Global Markets products only
3. FY18 share is based on 3Q18 for Institutional and 1H18 for Corporates
Notes on slide 22 – Our strong performance in Firmwide Treasury Services over the course of the last two years has made us a market leader

Notes

1. Source: Coalition, preliminary FY18 competitor analysis. Analysis reflects TS revenues (excluding Commercial Cards) across CIB and non-CIB and is based on top 3 peers within peer-set: BAML, BNPP, CITI, DB, HSBC, JPM, SG, SCB and WFC
Notes on slide 32 – We remain focused on maintaining day-to-day discipline, optimizing our current model and transforming for the future

Notes

1. Source: Coalition, preliminary FY18 Competitor Analytics. Gap analysis reflects addressable gap to the product leader across multiple asset-classes by region based on Coalition’s preliminary FY18 Competitor Analytics and reflects JPMorgan Chase’s business structure. Addressable Gap represents gap that JPMorgan Chase is able to address with relatively little change in business model or investment.