J.P.Morgan

業務及び財産の状況に関する説明書

平成 30 年 12 月期

JP モルガン・チェース銀行
東 京 支 店

この説明書は、銀行法第21条および銀行法施行規則第19条の2 （業務および財産の状況に関する説明書類の縦覧等）に基づき、当行在日支店ならびに当行持分会社の業務および財産の状況に関し作成したものです。

目　次

頁

1. 外国銀行在日支店に係る事項

１）　JP モルガン・チェース銀行東京支店の概況 ………………………………… 1
イ．代表者 ……………………………………………………………………… 1
ロ．ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーションの大株主 ………………………… 1
ハ．営業所の名称及び所在地 ………………………………………………… 1

２）　直近の事業年度における事業の概況 ………………………………………… 1
(1) 東京支店の事業内容について ……………………………………………… 1
(2) 平成 30 年 12 月期の営業の概況 …………………………………………… 1

３）　直近の 2 事業年度における貸借対照表及び損益計算書 …………………… 2～5

2. 外国銀行本店に係る事項

１）　業務及び財産の状況に関する事項（原文（英語））
２）　業務及び財産の状況に関する事項（日本語訳抜粋）
３）　連結損益計算書及び連結貸借対照表

1. 外国銀行在日支店に係る事項

1）JP モルガン・チェース銀行東京支店の概況

イ．代表者

李家　輝：　日本における代表者(兼)東京支店長

ロ．ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーションの大株主

	氏名又は名称	保有株式数	発行株式総数に対する保有株の割合（%）
1	ジェー・ピー・モルガン・チェース・アンド・カンパニー	148,761 千株	100%
			以上

ハ．営業所の名称及び所在地

JP モルガン・チェース銀行　東京支店
東京都千代田区丸の内２丁目７番３号　東京ビルディング

２）直近の事業年度における事業の概況

（１） 東京支店の事業内容について

JP モルガン・チェース・グループにおけるコーポレート・アンド・インベストメント・バンク部門のホールセール事業の日本における拠点として、日本の事業会社及び金融機関に対し、グループの持つグローバル機能を生かし、主として外国為替、デリバティブ、与信業務、財務サービス等を提供しています。

（２） 平成 30 年 12 月期の事業の概況

平成 30 年 12 月期の経常損益は 16.0 億円の損失となりました。主に、資金の運用・調達に関する収支を 21.1 億円、役務取引等収支を 35.4 億円、経常収益を 13.6 億円、営業経費を 87.7 億円計上したことによります。
税引前当期純損益は16.0億円の損失、法人税等を差し引いた当期純損益は18.4億円の損失となりました。

３）直近の２事業年度における貸借対照表及び損益計算書

貸借対照表

（単位：百万円）

科　　　目	平成30年12月31日	平成30年3月31日	科　　　目	平成30年12月31日	平成30年3月31日
現金預け金	**2,457,296**	**1,524,692**	**預金**	**374,493**	**398,134**
現金	28	10	当座預金	68,037	106,859
預け金	2,457,267	1,524,682	普通預金	64,648	53,523
コールローン	**239,000**	**1,470,000**	その他の預金	241,807	237,751
債券貸借取引支払保証金	**25,921**	**43,851**	**外国為替**	**160,877**	**40,345**
買入金銭債権	**3**	－	外国他店預り	160,791	40,235
有価証券	**33,471**	**33,773**	外国他店借	86	110
国債	33,471	33,773	未払外国為替	－	0
貸出金	**93,162**	**134,714**	**その他負債**	**790,962**	**998,402**
証書貸付	92,790	133,061	未払法人税等	393	22
当座貸越	372	1,652	未払費用	6,908	3,191
外国為替	**9,956**	**4,594**	前受収益	580	801
外国他店預け	4,111	4,430	先物取引差金勘定	4,735	2
外国他店貸	3,439	－	金融派生商品	745,247	959,864
買入外国為替	2,405	164	金融商品等受入担保金	25,891	33,077
その他資産	**740,975**	**1,029,842**	その他の負債	7,205	1,442
前払費用	22	8	**賞与引当金**	**1,153**	**348**
未収収益	1,763	1,305	**繰延税金負債**	**219**	－
未収還付法人税等	530	138	**支払承諾**	**4,369**	**4,768**
先物取引差入証拠金	2,653	1,805	**本支店勘定**	**2,391,518**	**3,036,579**
先物取引差金勘定	1,563	3,147	本店	100,450	100,000
金融派生商品	704,224	960,479	在外支店	2,291,068	2,936,579
金融商品等差入担保金	28,203	61,198			
その他の資産	2,013	1,759			
有形固定資産	**7**	**1**			
その他の有形固定資産	7	1			
無形固定資産	**4**	**0**	**負債の部小計**	**3,723,594**	**4,478,580**
ソフトウエア	4	0	**持込資本金**	**2,000**	**2,000**
前払年金費用	**140**	**22**	**繰越利益剰余金**	**△4,943**	**△2,236**
繰延税金資産	－	**163**	**その他有価証券評価差額金**	**497**	**661**
支払承諾見返	**4,369**	**4,768**			
貸倒引当金	**△251**	**△285**			
本支店勘定	**117,092**	**232,864**			
本店	17,862	96,311			
在外支店	99,230	136,553			
合　　計	3,721,148	4,479,005	合　　計	3,721,148	4,479,005

損益計算書

（単位：百万円）

科　　目	平成 30 年 4 月 1 日から 平成 30 年 12 月 31 日まで	平成 29 年 4 月 1 日から 平成 30 年 3 月 31 日まで
経常収益	**47,151**	**15,551**
資金運用収益	6,396	3,198
貸出金利息	1,585	848
有価証券利息配当金	220	311
コールローン利息	△ 598	△ 629
債券貸借取引受入利息	2	3
預け金利息	196	799
外国為替受入利息	98	192
本支店為替尻受入利息	4,860	1,667
その他の受入利息	30	5
役務取引等収益	10,539	3,021
外国為替受入手数料	960	1,267
内国為替受入手数料	152	176
その他の役務収益	9,426	1,578
その他業務収益	28,855	7,641
金融派生商品収益	27,176	4,825
その他の業務収益	1,678	2,815
その他経常収益	1,360	1,690
貸倒引当金戻入益	33	−
その他の経常収益	1,326	1,690
経常費用	**48,758**	**16,341**
資金調達費用	4,280	1,161
預金利息	964	825
コールマネー利息	△ 25	−
借用金利息	△ 1	△ 96
外国為替支払利息	1	5
本支店為替尻支払利息	3,297	383
その他の支払利息	44	43
役務取引等費用	6,996	726
外国為替支払手数料	285	499
内国為替支払手数料	40	44
その他の役務費用	6,671	181
その他業務費用	28,703	2,494
外国為替売買損	24,049	1,334
その他の業務費用	4,653	1,159
営業経費	8,777	11,734
その他経常費用	−	224
貸倒引当金繰入額	−	224
経常損失	**1,606**	**789**
特別利益	0	−
その他の特別利益	0	−
税引前当期純損失	**1,606**	**789**
法人税、住民税及び事業税	**313**	**4**
過年度法人税等	**△ 530**	**△ 26**
法人税等調整額	**455**	**385**
法人税等合計	**238**	**363**
当期純損失	**1,844**	**1,153**
繰越利益剰余金(当期首残高)	**△ 2,236**	**△ 1,188**
本店への送金	**862**	**−**
(又は本店からの補填金)	**−**	**105**
繰越利益剰余金	**△ 4,943**	**△ 2,236**

平成30年6月1日付で、銀行法等の一部を改正する法律が施行され、外国銀行支店の事業年度について、一律に定められていた「4月1日から翌年3月31日まで」に加え、「外国銀行の事業年度の期間と同一の期間」も定義され、外国銀行支店はいずれかの事業年度を選択することが可能となりました。

当支店は平成30年12月期より決算期（事業年度の末日）を3月31日から12月31日に変更いたしました。そのため、決算期変更の経過期間となる今期は、平成30年4月1日から平成30年12月31日までの9か月間の損益を計上しております。前年度は平成29年4月1日から平成30年3月31日までの12ヶ月間の損益を計上しております。

重要な会計方針

平成 30 年 12 月期	平成 30 年 3 月期
1. 有価証券の評価基準及び評価方法 有価証券の評価は、決算日の市場価格等に基づく時価法（売却原価は主として移動平均法により算定）により行っております。なお、その他有価証券の評価差額については、全部純資産直入法により処理しております。	1. 有価証券の評価基準及び評価方法 同左
2. デリバティブ取引の評価基準及び評価方法 デリバティブ取引（特定取引目的の取引を除く）の評価は、時価法により行っております。なお、金融商品会計に関する実務指針に定める要件を満たすデリバティブ取引の時価評価による金融資産と金融負債については相殺表示を行っております。	2. デリバティブ取引の評価基準及び評価方法 同左
3. 固定資産の減価償却の方法 有形固定資産 その他の有形固定資産は、定率法を採用しております。 主な耐用年数は以下の通りであります。 その他の有形固定資産　2 年～15 年 無形固定資産 定額法を採用しております。なお、自社利用のソフトウェアについては、行内における利用可能期間（5 年）に基づいて償却しております。	3. 固定資産の減価償却の方法 有形固定資産 その他の有形固定資産は、定額法を採用しております。 主な耐用年数は以下の通りであります。 その他の有形固定資産　2 年～15 年 無形固定資産 同左
4. 外貨建の資産及び負債の本邦通貨への換算基準 外貨建資産・負債及び海外本支店勘定は、決算日の為替相場による円換算額を付しております。	4. 外貨建の資産及び負債の本邦通貨への換算基準 同左
5. 引当金の計上基準 (1) 貸倒引当金 貸倒引当金は、予め定めている償却・引当基準に則り、次のとおり計上しております。 「銀行等金融機関の資産の自己査定並びに貸倒償却及び貸倒引当金の監査に関する実務指針」（日本公認会計士協会銀行等監査特別委員会報告第４号　平成 24 年７月４日）に規定する正常先債権及び要注意先債権に相当する債権については、一定の種類毎に分類し、過去の一定期間における各々の貸倒実績から算出した貸倒実績率等に基づき計上しております。 すべての債権は、資産の自己査定基準に基づき、審査部及び財務部が共同して資産査定を実施しております。 (2) 賞与引当金 賞与引当金は、従業員への賞与の支払いに備えるため、及び親会社の運営する株式報酬制度にかかる将来の費用負担に備えるため、当事業年度に帰属する額を計上しております。 (3) 退職給付引当金 退職給付引当金は、従業員の退職給付に備えるため、当事業年度末における退職給付債務及び年金資産の見込額に基づき、必要額を計上しております。また、退職給付債務の算定にあたり、退職給付見込額を当事業年度末までの期間に帰属させる方法については期間定額基準によっております。なお、過去勤務費用及び数理計算上の差異の費用処理方法は次のとおりであります。 過去勤務費用　その発生時の従業員の平均残存勤務期間内の一定の年数（10 年）による定額法により費用処理 数理計算上の差異　各事業年度の発生時の従業員の平均残存勤務期間内の一定の年数（10 年）による定額法により按分した額を、それぞれ発生の翌事業年度から費用処理	5. 引当金の計上基準 (1) 貸倒引当金 同左 (2) 賞与引当金 同左 (3) 退職給付引当金 同左
6. 消費税等の会計処理 消費税及び地方消費税の会計処理は、税抜方式によっております。	6. 消費税等の会計処理 同左

記載金額は百万円未満を切り捨てて表示しております。

会計方針の変更

（固定資産の減価償却の方法）

税法の規定に従い、有形固定資産の減価償却計算方法を現在の定額法から定率法に変更することとしました。当該会計方針の変更による影響額は僅少です。

注記事項

（貸借対照表関係）

1.　現金担保付債券貸借取引により受け入れている有価証券のうち、売却又は（再）担保という方法で自由に処分できる権利を有する有価証券で、（再）担保に差し入れている有価証券は平成 30 年 12 月期末及び平成 30 年 3 月期末においてそれぞれ 10,211 百万円及び 10,323 百万円、各事業年度末に当該処分をせずに所有しているものは 15,680 百万円及び 20,940 百万円であります。

2.　平成 30 年 12 月期末及び平成 30 年 3 月期末において、貸出金のうち、破綻先債権、延滞債権、３ヵ月以上延滞債権及び貸出条件緩和債権の該当はありません。

なお、破綻先債権とは、元本又は利息の支払の遅延が相当期間継続していることその他の事由により元本又は利息の取立て又は弁済の見込みがないものとして未収利息を計上しなかった貸出金（貸倒償却を行った部分を除く。以下「未収利息不計上貸出金」という。）のうち、法人税法施行令（昭和 40 年政令第 97 号）第 96 条第１項第３号イからホまでに掲げる事由又は同項第４号に規定する事由が生じている貸出金であります。

延滞債権とは、未収利息不計上貸出金であって、破綻先債権及び債務者の経営再建又は支援を図ることを目的として利息の支払を猶予した貸出金以外の貸出金であります。

３カ月以上延滞債権とは、元本又は利息の支払が、約定支払日の翌日から３月以上遅延している貸出金で破綻先債権及び延滞債権に該当しないものであります。

また、貸出条件緩和債権とは、債務者の経営再建又は支援を図ることを目的として、金利の減免、利息の支払猶予、元本の返済猶予、債権放棄その他の債務者に有利となる取決めを行った貸出金で破綻先債権、延滞債権及び３カ月以上延滞債権に該当しないものであります。

3.　ローン・パーティシペーションで、「ローン・パーティシペーションの会計処理及び表示」（日本公認会計士協会会計制度委員会報告第３号　平成 26 年 11 月 28 日）に基づいて、参加者に売却したものとして会計処理した貸出金の元本の平成 30 年 12 月期末及び平成 30 年 3 月期末残高の総額はそれぞれ 6,234 百万円及び 6,234 百万円であります。

4.　担保に供している資産は次のとおりであります。

その他の資産には、平成 30 年 12 月期末及び平成 30 年 3 月期末においてそれぞれ保証金 47 百万円及び 43 百万円が含まれております。

5.　当座貸越契約及び貸付金に係るコミットメントライン契約は、顧客からの融資実行の申し出を受けた場合に、契約上規定された条件について違反がない限り、一定の限度額まで資金を貸し付けることを約する契約であります。これらの契約に係る融資未実行残高は、平成 30 年 12 月期末及び平成 30 年 3 月期末においてそれぞれ 154,445 百万円及び 75,140 百万円であります。このうち契約残存期間が 1 年以内のものがそれぞれ 96,070 百万円及び 54,739 百万円あります。

6.　平成 30 年 12 月期末及び平成 30 年 3 月期末において、有形固定資産の減価償却累計額は 1 百万円及び 0 百万円であります。

7.　平成 30 年 12 月期末及び平成 30 年 3 月期末において、支店の代表者との間の取引による支店の代表者に対する金銭債権又は金銭債務として該当するものはありません。

（損益計算書注記）

本店経費負担額および内訳は次のとおりです。

（単位：百万円）

	平成 30 年 4 月 1 日から 平成 30 年 12 月 31 日まで	平成 29 年 4 月 1 日から 平成 30 年 3 月 31 日まで
本店経費負担額	3,044	3,001
直接経費（派遣職員給与等）	54	65
間接経費割当額	2,990	2,936

財務諸表の正確性、及び内部監査の有効性に関する確認について

令和 元 年 6 月 27 日

JP モルガン・チェース銀行　東京支店
日本における代表者（兼）東京支店長

李 家　輝

1. 私は、当支店の平成 30 年 4 月 1 日から平成 30 年 12 月 31 日までの第 47 期事業年度の『業務及び財産の状況に関する説明書』に記載した事項が、「企業内容等の開示に関する内閣府令」、「財務諸表等の用語、様式及び作成方法に関する規則」ならびに銀行法及び同施行規則に準拠して、すべての重要な点において適正に表示されていることを確認いたしました。

2. 当該確認を行うに当たり、財務諸表等が適正に作成されるための以下の内部統制体制が整備され、有効に機能していることを確認いたしました。

① 財務諸表等の作成にあたって、その責任部署と業務分掌が明確化されており、各責任部署において適切な業務・管理態勢が構築されていること。

② 内部監査部門が当該責任部署における業務プロセスの適切性・有効性を検証し、当支店経営委員会へ報告を行う体制にあること。

③ 重要な経営情報が当支店経営委員会へ適切に付議・報告されていること。

以上

2. 外国銀行本店に係る事項
1） 業務及び財産の状況に関する事項（原文（英語））

JPMORGAN CHASE BANK, NATIONAL ASSOCIATION

REVIEW OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED DECEMBER 31, 2018

The following is a summary of the financial performance of JPMorgan Chase Bank, National Association for the year ended December 31, 2018.

Net income was $29.0 billion in 2018, compared with $19.6 billion in 2017, reflecting an increase of 47% from the prior year. Total net revenue was $99.9 billion in 2018, compared with $90.9 billion in 2017, reflecting a 10% increase in net revenue.

The provision for credit losses was $4.9 billion in 2018, compared with $5.3 billion in 2017, reflecting a decrease of 8% from the prior year.

Noninterest expense was $57.6 billion in 2018, compared with $53.4 billion in 2017, reflecting an increase of 8%. Income tax expense was $8.4 billion in 2018, compared with $12.5 billion in 2017, reflecting a decrease of 33%.

As of December 31, 2018, total assets were $2.3 trillion, reflecting an increase of 3% compared with 2017. As of December 31, 2018, total liabilities were $2.0 trillion, reflecting an increase of 3% compared with 2017. Total stockholder’s equity increased 2% in 2018 to $250.8 billion, compared with $246.1 billion in 2017.

JPMORGAN CHASE BANK,
NATIONAL ASSOCIATION

(a wholly-owned subsidiary of JPMorgan Chase & Co.)

CONSOLIDATED FINANCIAL STATEMENTS

(including Chase Bank USA, N.A.)

For the two years ended December 31, 2018

FOR THE TWO YEARS ENDED DECEMBER 31, 2018

	Page
Report of Independent Auditors	1
Consolidated Financial Statements (including Chase Bank USA, N.A.):	
Consolidated Statements of Income	2
Consolidated Statements of Comprehensive Income	3
Consolidated Balance Sheets	4
Consolidated Statements of Changes in Stockholder's Equity	5
Consolidated Statements of Cash Flows	6
Notes to Consolidated Financial Statements	7-130
Supplementary Information (unaudited):	
Glossary of Terms and Acronyms	131-135

pwc

Report of Independent Auditors

To the Board of Directors and Shareholder of JPMorgan Chase Bank, National Association

We have audited the accompanying consolidated financial statements of JPMorgan Chase Bank, National Association and its subsidiaries, which comprise the consolidated balance sheets as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in stockholder's equity and cash flows for each of the three years in the period ended December 31, 2018.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Company's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of JPMorgan Chase Bank, National Association and its subsidiaries as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

February 26, 2019, except for the effects of the merger of legal entities under common control discussed in Note 1 to the consolidated financial statements, as to which the date is May 22, 2019

PricewaterhouseCoopers LLP • 300 Madison Avenue • New York, NY 10017

Consolidated statements of income

JPMorgan Chase Bank, National Association
(a wholly-owned subsidiary of JPMorgan Chase & Co.)

Year ended December 31, (in millions)	2018	2017
Revenue		
Investment banking fees	**$ 3,368**	$ 3,419
Principal transactions	**11,814**	9,883
Lending- and deposit-related fees	**6,057**	5,941
Asset management, administration and commissions	**11,029**	10,358
Investment securities losses	**(395)**	(73)
Mortgage fees and related income	**1,253**	1,616
Card income	**4,989**	4,433
Other income	**5,612**	4,341
Noninterest revenue	**43,727**	39,918
Interest income	**68,959**	58,877
Interest expense	**12,802**	7,903
Net interest income	**56,157**	50,974
Total net revenue	**99,884**	90,892
Provision for credit losses	**4,872**	5,298
Noninterest expense		
Compensation expense	**26,541**	24,933
Occupancy expense	**3,801**	3,504
Technology, communications and equipment expense	**8,404**	7,328
Professional and outside services	**5,839**	5,420
Marketing	**3,145**	2,793
Other expense	**9,904**	9,448
Total noninterest expense	**57,634**	53,426
Income before income tax expense	**37,378**	32,168
Income tax expense	**8,425**	12,528
Net income	**$ 28,953**	$ 19,640

The consolidated financial statements have been recast to reflect the Merger with Chase Bank USA, N.A. Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information regarding the Merger and new accounting standards, refer to Note 1.

The Notes to Consolidated Financial Statements are an integral part of these statements.

Consolidated statements of comprehensive income

JPMorgan Chase Bank, National Association
(a wholly-owned subsidiary of JPMorgan Chase & Co.)

Year ended December 31, (in millions)	2018	2017
Net income	**$ 28,953**	$ 19,640
Other comprehensive income/(loss), after-tax		
Unrealized gains/(losses) on investment securities	**(1,806)**	687
Translation adjustments, net of hedges	**57**	(309)
Fair value hedges	**1**	NA
Cash flow hedges	**(198)**	176
Defined benefit pension and OPEB plans	**(1,969)**	11
DVA on fair value option elected liabilities	**321**	(55)
Total other comprehensive income/(loss), after-tax	**(3,594)**	510
Comprehensive income	**$ 25,359**	$ 20,150

The consolidated financial statements have been recast to reflect the Merger with Chase Bank USA, N.A. Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information regarding the Merger and new accounting standards, refer to Note 1.

The Notes to Consolidated Financial Statements are an integral part of these statements.

Consolidated balance sheets

JPMorgan Chase Bank, National Association
(a wholly-owned subsidiary of JPMorgan Chase & Co.)

December 31, (in millions, except share data)	2018	2017
Assets		
Cash and due from banks	$ 21,611	$ 25,279
Deposits with banks	255,135	404,618
Federal funds sold and securities purchased under resale agreements (included **$4,370** and $2,894 at fair value)	275,476	155,214
Securities borrowed (included **$5,105** and $3,049 at fair value)	45,335	39,009
Trading assets (included assets pledged of **$44,189** and $49,765)	264,533	249,223
Investment securities (included **$228,712** and $199,364 at fair value and assets pledged of **$17,778** and $23,170)	260,146	247,097
Loans (included **$3,151** and $2,508 at fair value)	983,133	929,642
Allowance for loan losses	(13,425)	(13,544)
Loans, net of allowance for loan losses	969,708	916,098
Accrued interest and accounts receivable	49,966	48,682
Premises and equipment	14,700	13,815
Goodwill, MSRs and other intangible assets	45,970	45,994
Other assets (included **$5,708** and $7,454 at fair value and assets pledged of **$1,514** and $1,639)	88,900	79,816
Total assets[(a)]	$ 2,291,480	$ 2,224,845
Liabilities		
Deposits (included **$23,371** and $21,380 at fair value)	$ 1,557,411	$ 1,535,551
Federal funds purchased and securities loaned or sold under repurchase agreements (included **$5,215** and $3,405 at fair value)	107,809	94,472
Short-term borrowings (included **$4,594** and $5,577 at fair value)	21,846	8,993
Trading liabilities	113,887	96,661
Accounts payable and other liabilities (included **$5,757** and $7,454 at fair value)	109,152	99,814
Beneficial interests issued by consolidated variable interest entities	20,310	26,131
Long-term debt (included **$26,553** and $21,401 at fair value)	110,236	117,073
Total liabilities[(a)]	2,040,651	1,978,695
Commitments and contingencies (refer to Notes 25, 26 and 27)		
Stockholder's equity		
Preferred stock ($1 par value; authorized 15,000,000 shares: issued **0** shares)	–	–
Common stock ($12 par value; authorized 200,000,000 shares; issued **168,971,750** shares)	2,028	2,028
Additional paid-in capital	123,792	118,898
Retained earnings	126,622	123,849
Accumulated other comprehensive income	(1,613)	1,375
Total stockholder's equity	250,829	246,150
Total liabilities and stockholder's equity	$ 2,291,480	$ 2,224,845

The consolidated financial statements have been recast to reflect the Merger with Chase Bank USA, N.A. Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information regarding the Merger and new accounting standards, refer to Note 1.

(a) The following table presents information on assets and liabilities related to VIEs that are consolidated by JPMorgan Chase Bank, N.A. at December 31, 2018 and 2017. The assets of the consolidated VIEs are used to settle the liabilities of those entities. The holders of the beneficial interests do not have recourse to the general credit of JPMorgan Chase Bank, N.A. The assets and liabilities in the table below include third-party assets and liabilities of consolidated VIEs and exclude intercompany balances that eliminate in consolidation. For a further discussion, refer to Note 15.

December 31, (in millions)	2018	2017
Assets		
Trading assets	$ 1,910	$ 1,380
Loans	59,456	68,995
All other assets	835	2,350
Total assets	$ 62,201	$ 72,725
Liabilities		
Beneficial interests issued by consolidated variable interest entities	$ 20,310	$ 26,131
All other liabilities	232	270
Total liabilities	$ 20,542	$ 26,401

The Notes to Consolidated Financial Statements are an integral part of these statements.

Consolidated statements of changes in stockholder’s equity

JPMorgan Chase Bank, National Association
(a wholly-owned subsidiary of JPMorgan Chase & Co.)

Year ended December 31, (in millions)	2018	2017
Common stock		
Balance at January 1 and December 31	**$ 2,028**	$ 2,028
Additional paid-in capital		
Balance at January 1	**118,898**	114,740
Cash capital contribution from JPMorgan Chase & Co.	**1,094**	4,000
Adjustments to capital due to transactions with JPMorgan Chase & Co.	**3,800**	158
Balance at December 31	**123,792**	118,898
Retained earnings		
Balance at January 1	**123,849**	117,209
Cumulative effect of change in accounting principles	**(680)**	–
Net income	**28,953**	19,640
Cash dividends paid to JPMorgan Chase & Co.	**(25,500)**	(13,000)
Balance at December 31	**126,622**	123,849
Accumulated other comprehensive income		
Balance at January 1	**1,375**	865
Cumulative effect of change in accounting principles	**606**	–
Adjustments to AOCI due to transactions with JPMorgan Chase & Co.	**(1,623)**	–
Other comprehensive income/(loss), after-tax	**(1,971)**	510
Balance at December 31	**(1,613)**	1,375
Total stockholder’s equity	**$ 250,829**	$ 246,150

The consolidated financial statements have been recast to reflect the Merger with Chase Bank USA, N.A. Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information regarding the Merger and new accounting standards, refer to Note 1.

The Notes to Consolidated Financial Statements are an integral part of these statements.

Consolidated statements of cash flows

JPMorgan Chase Bank, National Association
(a wholly-owned subsidiary of JPMorgan Chase & Co.)

Year ended December 31, (in millions)	2018	2017
Operating activities		
Net income	$ 28,953	$ 19,640
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Provision for credit losses	4,872	5,298
Depreciation and amortization	7,541	6,000
Deferred tax expense/(benefit)	1,600	(52)
Other	395	73
Originations and purchases of loans held-for-sale	(101,476)	(94,628)
Proceeds from sales, securitizations and paydowns of loans held-for-sale	92,788	93,264
Net change in:		
Trading assets	(17,348)	9,926
Securities borrowed	(6,304)	(6,462)
Accrued interest and accounts receivable	(1,450)	(7,702)
Other assets	(8,942)	(681)
Trading liabilities	14,521	(28,093)
Accounts payable and other liabilities	10,888	(4,289)
Other operating adjustments	1,094	4,346
Net cash provided by/(used in) operating activities	27,132	(3,360)
Investing activities		
Net change in:		
Federal funds sold and securities purchased under resale agreements	(120,260)	17,315
Held-to-maturity securities:		
Proceeds from paydowns and maturities	2,945	4,563
Purchases	(9,368)	(2,349)
Available-for-sale securities:		
Proceeds from paydowns and maturities	36,912	55,583
Proceeds from sales	45,953	89,418
Purchases	(95,090)	(105,134)
Proceeds from sales and securitizations of loans held-for-investment	29,826	15,791
Other changes in loans, net	(81,238)	(62,345)
All other investing activities, net	(1,525)	308
Net cash provided by/(used in) investing activities	(191,845)	13,150
Financing activities		
Net change in:		
Deposits	24,191	41,578
Federal funds purchased and securities loaned or sold under repurchase agreements	13,336	19,657
Short-term borrowings	12,693	(4,412)
Beneficial interests issued by consolidated variable interest entities	1,680	(987)
Proceeds from long-term borrowings	37,441	22,098
Payments of long-term borrowings	(51,179)	(48,770)
Cash capital contribution from JPMorgan Chase & Co.	1,094	4,000
Dividends paid to JPMorgan Chase & Co.	(25,500)	(13,000)
All other financing activities, net	613	1,698
Net cash provided by financing activities	14,369	21,862
Effect of exchange rate changes on cash and due from banks and deposits with banks	(2,807)	8,045
Net increase/(decrease) in cash and due from banks and deposits with banks	(153,151)	39,697
Cash and due from banks and deposits with banks at the beginning of the period	429,897	390,200
Cash and due from banks and deposits with banks at the end of the period	$ 276,746	$ 429,897
Cash interest paid	$ 11,565	$ 7,745
Cash income taxes paid, net[(a)]	3,183	5,589

The consolidated financial statements have been recast to reflect the Merger with Chase Bank USA, N.A. Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information regarding the Merger and new accounting standards, refer to Note 1.

(a) Includes $1.7 billion and $3.4 billion paid to JPMorgan Chase & Co. in 2018 and 2017, respectively.

The Notes to Consolidated Financial Statements are an integral part of these statements.

Note 1 – Overview and basis of presentation

JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."), is a wholly-owned bank subsidiary of JPMorgan Chase & Co. ("JPMorgan Chase"), which is a leading global financial services firm and one of the largest banking institutions in the United States of America ("U.S."), with operations worldwide. JPMorgan Chase Bank, N.A. is a national banking association that is chartered by the Office of the Comptroller of the Currency ("OCC"), a bureau of the U.S. Department of the Treasury. JPMorgan Chase Bank, N.A.'s main office is located in Columbus, Ohio, and it has retail branches in 27 states and Washington, D.C. as of December 31, 2018. JPMorgan Chase Bank, N.A. operates nationally as well as through non-U.S. bank branches and subsidiaries, and representative offices. JPMorgan Chase Bank, N.A. either directly or through such branches, subsidiaries and offices offers a wide range of banking services to its U.S. and non-U.S. customers including investment banking, financial services for consumers and small businesses, commercial banking, financial transactions processing and asset management. Under the J.P. Morgan and Chase brands, JPMorgan Chase Bank, N.A. serves millions of customers in the U.S. and many of the world's most prominent corporate, institutional and government clients. JPMorgan Chase Bank, N.A.'s principal operating subsidiary in the U.K. is J.P. Morgan Securities plc.

The Board of Directors of JPMorgan Chase Bank, N.A. is responsible for the oversight of the management of JPMorgan Chase Bank, N.A. The JPMorgan Chase Bank, N.A. Board accomplishes this function acting directly and through the principal standing committees of JPMorgan Chase's Board of Directors. Risk and control oversight on behalf of JPMorgan Chase Bank N.A. is primarily the responsibility of the Directors' Risk Policy Committee ("DRPC") and Audit Committee of JPMorgan Chase's Board of Directors, respectively, and, with respect to compensation and other management-related matters, the Compensation & Management Development Committee of JPMorgan Chase's Board of Directors.

The accounting and financial reporting policies of JPMorgan Chase Bank, N.A. and its subsidiaries conform to accounting principles generally accepted in the U.S. ("U.S. GAAP"). Additionally, where applicable, the policies conform to the accounting and reporting guidelines prescribed by regulatory authorities.

Internal merger of legal entities under common control

Merger with Chase Bank USA, National Association ("Chase Bank USA, N.A."). In January 2019, the OCC approved an application of merger which was filed in December 2018, by JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A., a wholly-owned subsidiary and principal credit card-issuing bank of JPMorgan Chase. On May 18, 2019, JPMorgan Chase merged Chase Bank USA, N.A. with and into JPMorgan Chase Bank, N.A., with JPMorgan Chase Bank, N.A. as the surviving bank (the "Merger"). JPMorgan Chase Bank, N.A. issued 20.2 million shares of its common stock to JPMorgan Chase in exchange for the net assets of Chase Bank USA, N.A. The Merger is part of JPMorgan Chase's legal entity simplification strategy.

In accordance with U.S. GAAP, the merger was accounted for as a transaction between legal entities under common control and was considered a change in the reporting entity. Therefore, the net assets of Chase Bank USA, N.A. were merged at their carrying value and are included in these Consolidated Financial Statements retrospectively for all periods presented. In addition, as a result of the Merger, net income for the years ended December 31, 2018 and 2017 increased by $3.1 billion and $710 million, respectively.

Condensed statement of net assets of Chase Bank USA, N.A. merged into JPMorgan Chase Bank, N.A. The following condensed statement of net assets reflects the carrying value of the net assets of Chase Bank USA, N.A. that were merged with and into JPMorgan Chase Bank, N.A. The amounts in the table below exclude intercompany balances that were eliminated in consolidation.

December 31, (in millions)	2018	2017
Assets		
Cash and due from banks	$ 1,038	$ 3,336
Deposits with banks	5,767	14,908
Loans, net of allowance for loan losses	105,020	105,013
Accrued interest and accounts receivable	794	738
Premises and equipment	306	334
Goodwill, MSRs and other intangible assets	12,412	12,424
Other assets	4,322	4,864
Total assets	$ 129,659	$ 141,617
Liabilities		
Deposits	$ 535	$ 1,716
Accounts payable and other liabilities	8,344	10,814
Beneficial interests issued by consolidated variable interest entities	13,437	21,278
Long-term debt	16,968	19,362
Total liabilities	39,284	53,170
Net assets	$ 90,375	$ 88,447

Supervision and regulation

JPMorgan Chase and its subsidiaries (including JPMorgan Chase Bank, N.A.) are subject to regulation under U.S. federal and state laws, as well as the applicable laws of the jurisdictions outside the U.S. in which JPMorgan Chase does business.

FDIC deposit insurance. The Federal Deposit Insurance Corporation (the "FDIC") deposit insurance fund provides insurance coverage for certain deposits and is funded through assessments on banks, such as JPMorgan Chase Bank, N.A.

FDIC powers upon a bank insolvency. Upon the insolvency of an insured depository institution ("IDI"), such as JPMorgan Chase Bank, N.A., the FDIC could be appointed as the conservator or receiver under the Federal Deposit Insurance Act ("FDIA"). The FDIC has broad powers to transfer any assets and liabilities without the approval of the institution's creditors.

Cross-guarantee. An FDIC-insured depository institution can be held liable for any loss incurred or expected to be incurred by the FDIC if another FDIC-insured institution that is under common control with such institution is in default or is deemed to be "in danger of default" (commonly referred to as "cross-guarantee" liability). An FDIC cross-guarantee claim against a depository institution is generally superior in right of payment to claims of the holding company and its affiliates against such depository institution.

Prompt corrective action. The Federal Deposit Insurance Corporation Improvement Act of 1991 requires the relevant federal banking regulator to take "prompt corrective action" with respect to a depository institution if that institution does not meet certain capital adequacy standards. Although these regulations apply only to banks, such as JPMorgan Chase Bank, N.A., the Federal Reserve is authorized to take appropriate action against the parent bank holding company ("BHC"), such as JPMorgan Chase & Co., based on the undercapitalized status of any bank subsidiary. In certain instances, the BHC would be required to guarantee the performance of the capital restoration plan for its undercapitalized subsidiary.

Orderly liquidation authority and resolution and recovery. The FDIC requires each IDI with $50 billion or more in assets, such as JPMorgan Chase Bank, N.A. to submit a plan for resolution in the event of material distress or failure.

Restrictions on transactions with affiliates. JPMorgan Chase Bank, N.A. and its subsidiaries are subject to restrictions imposed by federal law on extensions of credit to, investments in stock or securities of, and derivatives, securities lending and certain other transactions with, JPMorgan Chase & Co. and certain other affiliates. These restrictions prevent JPMorgan Chase & Co. and other affiliates from borrowing from such subsidiaries unless the loans are secured in specified amounts and comply with certain other requirements.

For additional information concerning the supervision and regulation of JPMorgan Chase Bank, N.A., see "Supervision and regulation" in the Annual Report on Form 10-K of JPMorgan Chase for the year ended December 31, 2018, filed with the U.S. Securities and Exchange Commission on February 26, 2019.

Consolidation

The Consolidated Financial Statements include the accounts of JPMorgan Chase Bank, N.A. and other entities in which JPMorgan Chase Bank, N.A. has a controlling financial interest. All material intercompany balances and transactions have been eliminated.

Assets held for clients in an agency or fiduciary capacity by JPMorgan Chase Bank, N.A. are not assets of JPMorgan Chase Bank, N.A. and are not included on the Consolidated balance sheets.

JPMorgan Chase Bank, N.A. determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity.

Voting interest entities

Voting interest entities are entities that have sufficient equity and provide the equity investors voting rights that enable them to make significant decisions relating to the entity's operations. For these types of entities, JPMorgan Chase Bank, N.A.'s determination of whether it has a controlling interest is primarily based on the amount of voting equity interests held. Entities in which JPMorgan Chase Bank, N.A. has a controlling financial interest, through ownership of the majority of the entities' voting equity interests, or through other contractual rights that give JPMorgan Chase Bank, N.A. control, are consolidated by JPMorgan Chase Bank, N.A.

Investments in companies in which JPMorgan Chase Bank, N.A. has significant influence over operating and financing decisions (but does not own a majority of the voting equity interests) are accounted for (i) in accordance with the equity method of accounting (which requires JPMorgan Chase Bank, N.A. to recognize its proportionate share of the entity's net earnings), or (ii) at fair value if the fair value option was elected. These investments are generally included in other assets, with income or loss included in noninterest revenue.

Certain JPMorgan Chase Bank, N.A.-sponsored asset management funds are structured as limited partnerships or certain limited liability companies. For many of these entities, JPMorgan Chase Bank, N.A. is a general partner or managing member, but the non-affiliated partners or members have the ability to remove JPMorgan Chase Bank, N.A as the general partner or managing member without cause (i.e., kick-out rights), based on a simple majority vote, or the non-affiliated partners or members have rights to participate in important decisions. Accordingly, JPMorgan Chase Bank, N.A. does not consolidate these voting interest entities. However, in the limited cases where the non-managing partners or members do not have substantive kick-out or participating rights, JPMorgan Chase Bank, N.A. evaluates the funds as VIEs and consolidates the funds if JPMorgan Chase Bank, N.A. is the general partner or managing member and has a potentially significant interest.

Variable interest entities

VIEs are entities that, by design, either (1) lack sufficient equity to permit the entity to finance its activities without additional subordinated financial support from other parties, or (2) have equity investors that do not have the ability to make significant decisions relating to the entity's operations through voting rights, or do not have the obligation to absorb the expected losses, or do not have the right to receive the residual returns of the entity.

The most common type of VIE is a special purpose entity ("SPE"). SPEs are commonly used in securitization transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. The basic SPE structure involves a company selling assets to the SPE; the SPE funds the purchase of those assets by issuing securities to investors. The legal documents that govern the transaction specify how the cash earned on the assets must be allocated to the SPE's investors and other parties that have rights to those cash flows. SPEs are generally structured to insulate investors from claims on the SPE's assets by creditors of other entities, including the creditors of the seller of the assets.

The primary beneficiary of a VIE (i.e., the party that has a controlling financial interest) is required to consolidate the assets and liabilities of the VIE. The primary beneficiary is the party that has both (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance; and (2) through its interests in the VIE, the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

To assess whether JPMorgan Chase Bank, N.A. has the power to direct the activities of a VIE that most significantly impact the VIE's economic performance, JPMorgan Chase Bank, N.A. considers all the facts and circumstances, including its role in establishing the VIE and its ongoing rights and responsibilities. This assessment includes, first, identifying the activities that most significantly impact the VIE's economic performance; and second, identifying which party, if any, has power over those activities. In general, the parties that make the most significant decisions affecting the VIE (such as asset managers, collateral managers, servicers, or owners of call options or liquidation rights over the VIE's assets) or have the right to unilaterally remove those decision-makers are deemed to have the power to direct the activities of a VIE.

To assess whether JPMorgan Chase Bank, N.A. has the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE, JPMorgan Chase Bank, N.A. considers all of its economic interests, including debt and equity investments, servicing fees, and derivatives or other arrangements deemed to be variable interests in the VIE. This assessment requires that JPMorgan Chase Bank, N.A. apply judgment in determining whether these interests, in the aggregate, are considered potentially significant to the VIE. Factors considered in assessing significance include: the design of the VIE, including its capitalization structure; subordination of interests; payment priority; relative share of interests held across various classes within the VIE's capital structure; and the reasons why the interests are held by JPMorgan Chase Bank, N.A.

JPMorgan Chase Bank, N.A. performs on-going reassessments of: (1) whether entities previously evaluated under the majority voting-interest framework have become VIEs, based on certain events, and are therefore subject to the VIE consolidation framework; and (2) whether changes in the facts and circumstances regarding JPMorgan Chase Bank, N.A.'s involvement with a VIE cause JPMorgan Chase Bank, N.A.'s consolidation conclusion to change.

Revenue recognition

Interest income

JPMorgan Chase Bank, N.A. records interest income on loans, debt securities, and other debt instruments, generally on a level-yield basis, based on the underlying contractual rate. For further discussion of interest income, refer to Note 8.

Revenue from contracts with customers

JPMorgan Chase Bank, N.A. records noninterest revenue from certain contracts with customers under ASC 606, *Revenue from Contracts with customers,* in investment banking fees, deposit-related fees, asset management administration and commissions, and components of card income. Under this guidance, revenue is recognized when JPMorgan Chase Bank, N.A.'s performance obligations are satisfied. For further discussion of JPMorgan Chase Bank, N.A.'s revenue from contracts with customers, refer to Note 7.

Principal transactions revenue

JPMorgan Chase Bank, N.A. carries a portion of its assets and liabilities at fair value. Changes in fair value are reported primarily in principal transactions revenue. For further discussion of fair value measurement, refer to Notes 3 and 4. For further discussion of principal transactions revenue, refer to Note 7.

Use of estimates in the preparation of consolidated financial statements

The preparation of the Consolidated Financial Statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expense, and disclosures of contingent assets and liabilities. Actual results could be different from these estimates.

Foreign currency translation

JPMorgan Chase Bank, N.A. revalues assets, liabilities, revenue and expense denominated in non-U.S. currencies into U.S. dollars using applicable exchange rates.

Gains and losses relating to translating functional currency financial statements for U.S. reporting are included in other comprehensive income/(loss) ("OCI") within stockholder's equity. Gains and losses relating to nonfunctional currency transactions, including non-U.S. operations where the functional currency is the U.S. dollar, are reported in the Consolidated statements of income.

Offsetting assets and liabilities

U.S. GAAP permits entities to present derivative receivables and derivative payables with the same counterparty and the related cash collateral receivables and payables on a net basis on the Consolidated balance sheets when a legally enforceable master netting agreement exists. U.S. GAAP also permits securities sold and purchased under repurchase agreements and securities borrowed or loaned under securities loan agreements to be presented net when specified conditions are met, including the existence of a legally enforceable master netting agreement. JPMorgan Chase Bank, N.A. has elected to net such balances when the specified conditions are met.

JPMorgan Chase Bank, N.A. uses master netting agreements with third parties and affiliates to mitigate counterparty credit risk in certain transactions, including derivative contracts, resale, repurchase, securities borrowed and securities loaned agreements. A master netting agreement is a single agreement with a counterparty that permits multiple transactions governed by that agreement to be terminated or accelerated and settled through a single payment in a single currency in the event of a default (e.g., bankruptcy, failure to make a required payment or securities transfer or deliver collateral or margin when due). Upon the exercise of derivatives termination rights by the non-defaulting party (i) all transactions are terminated, (ii) all transactions are valued and the positive values of “in the money” transactions are netted against the negative values of “out of the money” transactions and (iii) the only remaining payment obligation is of one of the parties to pay the netted termination amount. Upon exercise of default rights under repurchase agreements and securities loan agreements in general (i) all transactions are terminated and accelerated, (ii) all values of securities or cash held or to be delivered are calculated, and all such sums are netted against each other and (iii) the only remaining payment obligation is of one of the parties to pay the netted termination amount.

Typical master netting agreements for these types of transactions also often contain a collateral/margin agreement that provides for a security interest in, or title transfer of, securities or cash collateral/margin to the party that has the right to demand margin (the “demanding party”). The collateral/margin agreement typically requires a party to transfer collateral/margin to the demanding party with a value equal to the amount of the margin deficit on a net basis across all transactions governed by the master netting agreement, less any threshold. The collateral/margin agreement grants to the demanding party, upon default by the counterparty, the right to set-off any amounts payable by the counterparty against any posted collateral or the cash equivalent of any posted collateral/margin. It also grants to the demanding party the right to liquidate collateral/margin and to apply the proceeds to an amount payable by the counterparty.

For further discussion of JPMorgan Chase Bank, N.A.’s derivative instruments, refer to Note 6. For further discussion of JPMorgan Chase Bank, N.A.’s securities financing agreements, refer to Note 12.

Statements of cash flows

For JPMorgan Chase Bank, N.A.’s Consolidated statements of cash flows, cash is defined as those amounts included in cash and due from banks and deposits with banks.

Accounting standards adopted January 1, 2018

Recognition and measurement of financial assets and financial liabilities

The adoption of this guidance requires that certain equity instruments be measured at fair value, with changes in fair value recognized in earnings. The guidance also provides an alternative to measure equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer (the “measurement alternative”). JPMorgan Chase Bank, N.A. elected the measurement alternative for its qualifying equity securities and the adoption of the guidance resulted in fair value gains of $456 million which were recognized in other income in the first half of 2018. For additional information, refer to Notes 3 and 11.

Premium amortization on purchased callable debt securities

The adoption of this guidance requires that premiums be amortized to the earliest call date on certain debt securities. The adoption of this guidance resulted in a cumulative-effect adjustment to retained earnings and accumulated other comprehensive income/(loss) (“AOCI”). For additional information, refer to the table below, and Notes 11 and 21.

Hedge accounting

The adoption of this guidance better aligns hedge accounting with the economics of JPMorgan Chase Bank, N.A.’s risk management activities. As permitted by the guidance, JPMorgan Chase Bank, N.A. also elected to transfer certain investment securities from Held-to-maturity (“HTM”) to Available-for-sale (“AFS”). The adoption of this guidance resulted in a cumulative-effect adjustment to retained earnings and AOCI as a result of the investment securities transfer and the revised guidance for excluded components. For additional information, refer to the table below, and Notes 6, 11 and 21.

Treatment of restricted cash on the statement of cash flows

The adoption of this guidance requires restricted cash to be combined with unrestricted cash when reconciling the beginning and ending cash balances on the Consolidated statements of cash flows. To align the Consolidated balance sheets with the Consolidated statements of cash flows, JPMorgan Chase Bank, N.A. reclassified restricted cash into cash and due from banks or deposits with banks. In addition, for JPMorgan Chase Bank, N.A.’s Consolidated statements of cash flows, cash is defined as those amounts included in cash and due from banks and deposits with banks. For additional information, refer to the table below, and Note 23.

Presentation of net periodic pension cost and net periodic postretirement benefit cost

The adoption of this guidance requires the service cost component of net periodic pension cost and net periodic postretirement benefit cost to be reported separately in the Consolidated statements of income from the other cost components. For additional information, refer to Note 9.

Reclassification of certain tax effects from AOCI
The adoption of this guidance permitted JPMorgan Chase Bank, N.A. to reclassify from AOCI to retained earnings stranded tax effects due to the revaluation of deferred tax assets and liabilities as a result of changes in applicable tax rates under the TCJA. The adoption of this guidance resulted in a cumulative-effect adjustment to retained earnings and AOCI. For additional information, refer to the table below, and Note 21.

The following table presents the prior period impact to the Consolidated balance sheets from the retrospective adoption of the new accounting standards on January 1, 2018:

Selected Consolidated balance sheets data

December 31, 2017 (in millions)	Recast[(a)]	Revisions[(a)(b)]	Revised[(a)]
Assets			
Cash and due from banks	$ 25,226	$ 53	$ 25,279
Deposits with banks	403,509	1,109	404,618
Other assets	80,978	(1,162)	79,816
Total assets	$ 2,224,845	$ –	$ 2,224,845

(a) Recast to include Chase Bank USA, N.A.
(b) Revisions relate to the reclassification of restricted cash.

The following table presents the adjustment to retained earnings and AOCI as a result of the adoption of new accounting standards adopted January 1, 2018:

Increase/(decrease) (in millions)	Retained earnings	AOCI
Premium amortization on purchased callable debt securities	$ (494)	$ 252
Hedge accounting	–	168
Reclassification of certain tax effects from AOCI	(186)	186
Total	$ (680)	$ 606

Significant accounting policies

The following table identifies JPMorgan Chase Bank, N.A.'s other significant accounting policies and the Note and page where a detailed description of each policy can be found.

Fair value measurement	Note 3	Page 15
Fair value option	Note 4	Page 31
Derivative instruments	Note 6	Page 36
Noninterest revenue	Note 7	Page 50
Interest income and interest expense	Note 8	Page 54
Pension and other postretirement employee benefit plans	Note 9	Page 54
Employee share-based incentives	Note 10	Page 60
Investment securities	Note 11	Page 62
Securities financing activities	Note 12	Page 68
Loans	Note 13	Page 71
Allowance for credit losses	Note 14	Page 91
Variable interest entities	Note 15	Page 96
Goodwill and Mortgage servicing rights	Note 16	Page 104
Premises and equipment	Note 17	Page 106
Long-term debt	Note 19	Page 107
Related party transactions	Note 20	Page 108
Income taxes	Note 22	Page 112
Off-balance sheet lending-related financial instruments, guarantees and other commitments	Note 25	Page 118
Litigation	Note 27	Page 126

Note 2 – ACCOUNTING AND REPORTING DEVELOPMENTS

Financial Accounting Standards Board (“FASB”) Standards adopted during 2018

Standard	Summary of guidance	Effects on financial statements
Revenue recognition – revenue from contracts with customers *Issued May 2014*	• Requires that revenue from contracts with customers be recognized upon transfer of control of a good or service in the amount of consideration expected to be received. • Changes the accounting for certain contract costs, including whether they may be offset against revenue in the Consolidated statements of income, and requires additional disclosures about revenue and contract costs.	• Adopted January 1, 2018. • JPMorgan Chase Bank, N.A. adopted the revenue recognition guidance using the full retrospective method of adoption. JPMorgan Chase Bank, N.A. did not apply any practical expedients. • The adoption of the guidance did not result in any material changes in the timing or presentation of JPMorgan Chase Bank, N.A.’s revenue recognition. • JPMorgan Chase Bank, N.A.’s Note 7 qualitative disclosures are consistent with the guidance.
Recognition and measurement of financial assets and financial liabilities *Issued January 2016*	• Requires that certain equity instruments be measured at fair value, with changes in fair value recognized in earnings. • Provides a measurement alternative for equity securities without readily determinable fair values to be measured at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer. Any such price changes are reflected in earnings beginning in the period of adoption.	• Adopted January 1, 2018. • For further information, refer to Note 1.
Classification of certain cash receipts and cash payments in the statement of cash flows *Issued August 2016*	• Provides targeted amendments to the classification of certain cash flows, including the treatment of settlement payments for zero coupon debt instruments and distributions received from equity method investments.	• Adopted January 1, 2018. • The adoption of the guidance had no material impact as JPMorgan Chase Bank, N.A. was either in compliance with the amendments or the amounts to which it was applied were immaterial.
Treatment of restricted cash on the statement of cash flows *Issued November 2016*	• Requires restricted cash to be combined with unrestricted cash when reconciling the beginning and ending cash balances on the Consolidated statements of cash flows. • Requires additional disclosures to supplement the Consolidated statements of cash flows.	• Adopted January 1, 2018 • For further information, refer to Note 1.

FASB Standards adopted during 2018 (continued)

Standard	Summary of guidance	Effects on financial statements
Definition of a business *Issued January 2017*	• Narrows the definition of a business and clarifies that, to be considered a business, substantially all of the fair value of the gross assets acquired (or disposed of) may not be concentrated in a single identifiable asset or a group of similar assets. • In addition, a business must now include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs.	• Adopted January 1, 2018. • The adoption of the guidance had no impact because it is applied prospectively. Subsequent to adoption, fewer transactions will be treated as acquisitions or dispositions of a business.
Presentation of net periodic pension cost and net periodic postretirement benefit cost *Issued March 2017*	• Requires the service cost component of net periodic pension and postretirement benefit cost to be reported separately in the Consolidated statements of income from the other cost components.	• Adopted January 1, 2018. • For further information, refer to Note 1.
Premium amortization on purchased callable debt securities *Issued March 2017*	• Requires amortization of premiums to the earliest call date on certain debt securities.	• Adopted January 1, 2018. • For further information, refer to Note 1.
Hedge accounting *Issued August 2017*	• Aligns the accounting with the economics of the risk management activities. • Expands the ability for certain hedges of interest rate risk to qualify for hedge accounting. • Allows recognition of ineffectiveness in cash flow hedges and net investment hedges in OCI. • Permits an election at adoption to transfer certain investment securities classified as held-to-maturity to available-for-sale. • Simplifies hedge documentation requirements.	• Adopted January 1, 2018. • For further information, refer to Note 1.
Reclassification of certain tax effects from AOCI *Issued February 2018*	• Permits reclassification of the income tax effects of the TCJA on items within AOCI to retained earnings so that the tax effects of items within AOCI reflect the appropriate tax rate.	• Adopted January 1, 2018. • For further information, refer to Note 1.

FASB Standards Issued but not adopted as of December 31, 2018

Standard	Summary of guidance	Effects on financial statements
Leases *Issued February 2016*	• Requires lessees to recognize all leases longer than twelve months on the Consolidated balance sheets as a lease liability with a corresponding right-of-use asset. • Requires lessees and lessors to classify most leases using principles similar to existing lease accounting, but eliminates the "bright line" classification tests. • Expands qualitative and quantitative leasing disclosures.	• Adopted January 1, 2019. • JPMorgan Chase Bank, N.A. elected the practical expedient to adopt and implement the new lease guidance as of January 1, 2019 through a cumulative-effect adjustment without revising prior comparative periods. Upon adoption, JPMorgan Chase Bank, N.A. recognized lease right-of-use ("ROU") assets and lease liabilities on the Consolidated balance sheet of $7.4 billion and $7.8 billion, respectively. The impact to the JPMorgan Chase Bank, N.A.'s CET1 capital ratio, was a reduction of approximately 7 bps. The adoption of the new lease guidance did not have a material impact on the JPMorgan Chase Bank, N.A.'s Consolidated statement of income. • JPMorgan Chase Bank, N.A. elected the available practical expedients to not reassess whether existing contracts contain a lease or whether classification or unamortized initial lease costs would be different under the new lease guidance.
Financial instruments – credit losses *Issued June 2016*	• Replaces existing incurred loss impairment guidance and establishes a single allowance framework for financial assets carried at amortized cost, which will reflect management's estimate of credit losses over the full remaining expected life of the financial assets and will consider expected future changes in macroeconomic conditions. • Eliminates existing guidance for PCI loans, and requires recognition of the nonaccretable difference as an increase to the allowance for expected credit losses on financial assets purchased with more than insignificant credit deterioration since origination, which will be offset by an increase in the recorded investment of the related loans. • Amends existing impairment guidance for AFS securities to incorporate an allowance, which will allow for reversals of credit impairments in the event that the credit of an issuer improves. • Requires a cumulative-effect adjustment to retained earnings as of the beginning of the reporting period of adoption.	• Required effective date: January 1, 2021.[(a)] • JPMorgan Chase Bank, N.A. is actively involved with JPMorgan Chase's Firmwide, cross-discipline governance structure, which provides implementation oversight. JPMorgan Chase Bank, N.A. continues to test and refine its current expected credit loss models that satisfy the requirements of the new standard. This review and testing, as well as efforts to meet expanded disclosure requirements, will extend through the remainder of 2019. • JPMorgan Chase Bank, N.A. expects that the allowance related to JPMorgan Chase Bank, N.A.'s loans and commitments will increase as it will cover credit losses over the full remaining expected life of the portfolios, with the most significant impact expected from JPMorgan Chase Bank, N.A.'s credit card portfolio. • The extent of the increase in the allowance is under evaluation, but will depend upon the nature and characteristics of JPMorgan Chase Bank, N.A.'s portfolio at the adoption date, and the macroeconomic conditions and forecasts at that date. • JPMorgan Chase Bank, N.A. plans to adopt the new guidance on January 1, 2020.
Goodwill *Issued January 2017*	• Requires an impairment loss to be recognized when the estimated fair value of a reporting unit falls below its carrying value. • Eliminates the second condition in the current guidance that requires an impairment loss to be recognized only if the estimated implied fair value of the goodwill is below its carrying value.	• Required effective date: January 1, 2020.[(a)] • Based on current impairment test results, JPMorgan Chase Bank, N.A. does not expect a material effect on the Consolidated Financial Statements. However, the impact of the new accounting guidance will depend on the performance of the reporting unit and the market conditions at the time of adoption. • After adoption, the guidance may result in more frequent goodwill impairment losses due to the removal of the second condition. • JPMorgan Chase Bank, N.A. plans to adopt the new guidance on January 1, 2020.

(a) Early adoption is permitted.

Note 3 – Fair value measurement

JPMorgan Chase Bank, N.A. carries a portion of its assets and liabilities at fair value. These assets and liabilities are predominantly carried at fair value on a recurring basis (i.e., assets and liabilities that are measured and reported at fair value on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets). Certain assets (e.g., held-for-sale loans), liabilities and unfunded lending-related commitments are measured at fair value on a nonrecurring basis; that is, they are not measured at fair value on an ongoing basis but are subject to fair value adjustments only in certain circumstances (for example, when there is evidence of impairment).

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is based on quoted market prices or inputs, where available. If prices or quotes are not available, fair value is based on valuation models and other valuation techniques that consider relevant transaction characteristics (such as maturity) and use as inputs observable or unobservable market parameters, including yield curves, interest rates, volatilities, equity or debt prices, foreign exchange rates and credit curves. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value, as described below.

The level of precision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while JPMorgan Chase Bank, N.A. believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgment and may vary across JPMorgan Chase Bank, N.A.'s businesses and portfolios.

JPMorgan Chase Bank, N.A. uses various methodologies and assumptions in the determination of fair value. The use of different methodologies or assumptions by other market participants compared with those used by JPMorgan Chase Bank, N.A. could result in JPMorgan Chase Bank, N.A. deriving a different estimate of fair value at the reporting date.

Valuation process

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the Consolidated balance sheets at fair value. JPMorgan Chase's Valuation Control Group ("VCG"), which is part of JPMorgan Chase's Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that JPMorgan Chase Bank, N.A.'s positions are recorded at fair value. The Valuation Governance Forum ("VGF") is composed of senior finance and risk executives and is responsible for overseeing the management of risks arising from valuation activities conducted across JPMorgan Chase. The Firmwide VGF is chaired by the Firmwide head of the VCG (under the direction of JPMorgan Chase's Controller).

Price verification process

The VCG verifies fair value estimates provided by the risk-taking functions by leveraging independently derived prices, valuation inputs and other market data, where available. Where independent prices or inputs are not available, the VCG performs additional review to ensure the reasonableness of the estimates. The additional review may include evaluating the limited market activity including client unwinds, benchmarking valuation inputs to those used for similar instruments, decomposing the valuation of structured instruments into individual components, comparing expected to actual cash flows, reviewing profit and loss trends, and reviewing trends in collateral valuation. There are also additional levels of management review for more significant or complex positions.

The VCG determines any valuation adjustments that may be required to the estimates provided by the risk-taking functions. No adjustments to quoted prices are applied for instruments classified within level 1 of the fair value hierarchy (refer to below for further information on the fair value hierarchy). For other positions, judgment is required to assess the need for valuation adjustments to appropriately reflect liquidity considerations, unobservable parameters, and, for certain portfolios that meet specified criteria, the size of the net open risk position. The determination of such adjustments follows a consistent framework across JPMorgan Chase Bank, N.A.:

- Liquidity valuation adjustments are considered where an observable external price or valuation parameter exists but is of lower reliability, potentially due to lower market activity. Liquidity valuation adjustments are applied and determined based on current market conditions. Factors that may be considered in determining the liquidity adjustment include analysis of: (1) the estimated bid-offer spread for the instrument being traded; (2) alternative pricing points for similar instruments in active markets; and (3) the range of reasonable values that the price or parameter could take.
- JPMorgan Chase Bank, N.A. manages certain portfolios of financial instruments on the basis of net open risk exposure and, as permitted by U.S. GAAP, has elected to estimate the fair value of such portfolios on the basis of a transfer of the entire net open risk position in an orderly transaction. Where this is the case, valuation adjustments may be necessary to reflect the cost of exiting a larger-than-normal market-size net open risk position. Where applied, such adjustments are based on factors that a relevant market participant would consider in the transfer of the net open risk position, including the size of the adverse market move that is

likely to occur during the period required to reduce the net open risk position to a normal market-size.

- Unobservable parameter valuation adjustments may be made when positions are valued using prices or input parameters to valuation models that are unobservable due to a lack of market activity or because they cannot be implied from observable market data. Such prices or parameters must be estimated and are, therefore, subject to management judgment. Unobservable parameter valuation adjustments are applied to reflect the uncertainty inherent in the resulting valuation estimate.
- Where appropriate, JPMorgan Chase Bank, N.A. also applies adjustments to its estimates of fair value in order to appropriately reflect counterparty credit quality (credit valuation adjustments ("CVA")), JPMorgan Chase Bank, N.A.'s own creditworthiness (debit valuation adjustments ("DVA")) and the impact of funding (funding valuation adjustments ("FVA")), using a consistent framework across JPMorgan Chase Bank, N.A.

Valuation model review and approval

If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction data such as maturity and use as inputs market-based or independently sourced parameters. Where this is the case the price verification process described above is applied to the inputs to those models.

Under JPMorgan Chase Bank, N.A.'s Estimations and Model Risk Management Policy, the Model Risk function reviews and approves new models, as well as material changes to existing models, prior to implementation in the operating environment. In certain circumstances, the head of the Model Risk function may grant exceptions to JPMorgan Chase Bank, N.A.'s policy to allow a model to be used prior to review or approval. The Model Risk function may also require the user to take appropriate actions to mitigate the model risk if it is to be used in the interim. These actions will depend on the model and may include, for example, limitation of trading activity.

Valuation hierarchy

A three-level valuation hierarchy has been established under U.S. GAAP for disclosure of fair value measurements. The valuation hierarchy is based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows.

- Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3 – one or more inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The following table describes the valuation methodologies generally used by JPMorgan Chase Bank, N.A. to measure its significant products/instruments at fair value, including the general classification of such instruments pursuant to the valuation hierarchy.

Product/instrument	Valuation methodology	Classifications in the valuation hierarchy
Securities financing agreements	Valuations are based on discounted cash flows, which consider: • Derivative features: for further information refer to the discussion of derivatives below. • Market rates for the respective maturity • Collateral characteristics	Predominantly level 2
Loans and lending-related commitments – wholesale		
Loans carried at fair value (e.g. trading loans and non-trading loans) and associated lending-related commitments	Where observable market data is available, valuations are based on: • Observed market prices (circumstances are infrequent) • Relevant broker quotes • Observed market prices for similar instruments Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following: • Credit spreads derived from the cost of credit default swaps (“CDS”); or benchmark credit curves developed by JPMorgan Chase Bank, N.A., by industry and credit rating • Prepayment speed • Collateral characteristics	Level 2 or 3
Loans – consumer		
Trading loans – conforming residential mortgage loans expected to be sold (Consumer & community banking business, Corporate & investment banking business)	Fair value is based on observable prices for mortgage-backed securities (“MBS”) with similar collateral and incorporates adjustments to these prices to account for differences between the securities and the value of the underlying loans, which include credit characteristics, portfolio composition, and liquidity.	Predominantly level 2
Investment and trading securities	Quoted market prices are used where available.	Level 1
	In the absence of quoted market prices, securities are valued based on: • Observable market prices for similar securities • Relevant broker quotes • Discounted cash flows In addition, the following inputs to discounted cash flows are used for the following products: *Mortgage- and asset-backed securities (“ABS”) specific inputs:* • Collateral characteristics • Deal-specific payment and loss allocations • Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity *Collateralized loan obligations (“CLOs”) specific inputs:* • Collateral characteristics • Deal-specific payment and loss allocations • Expected prepayment speed, conditional default rates, loss severity • Credit spreads • Credit rating data	Level 2 or 3
Physical commodities	Valued using observable market prices or data.	Level 1 and 2

Product/instrument	Valuation methodology	Classifications in the valuation hierarchy
Derivatives	Exchange-traded derivatives that are actively traded and valued using the exchange price.	Level 1
	Derivatives that are valued using models such as the Black-Scholes option pricing model, simulation models, or a combination of models that may use observable or unobservable valuation inputs as well as considering the contractual terms.	Level 2 or 3
	The key valuation inputs used will depend on the type of derivative and the nature of the underlying instruments and may include equity prices, commodity prices, interest rate yield curves, foreign exchange rates, volatilities, correlations, CDS spreads and recovery rates. Additionally, the credit quality of the counterparty and of JPMorgan Chase Bank, N.A. as well as market funding levels may also be considered.	
	In addition, specific inputs used for derivatives that are valued based on models with significant unobservable inputs are as follows:	
	Structured credit derivatives specific inputs include: • CDS spreads and recovery rates • Credit correlation between the underlying debt instruments	
	Equity option specific inputs include: • Equity volatilities • Equity correlation • Equity-FX correlation • Equity-IR correlation	
	Interest rate and FX exotic options specific inputs include: • Interest rate spread volatility • Interest rate correlation • Foreign exchange correlation • Interest rate-FX correlation	
	Commodity derivatives specific inputs include: • Commodity volatility • Forward commodity price	
	Additionally, adjustments are made to reflect counterparty credit quality (CVA) and the impact of funding (FVA).	
Mortgage servicing rights ("MSRs")	Refer to Mortgage servicing rights in Note 16.	Level 3
Fund investments (e.g., mutual/collective investment funds, private equity funds, hedge funds, and real estate funds)	Net asset value ("NAV")	
	• NAV is supported by the ability to redeem and purchase at the NAV level.	Level 1
	• Adjustments to the NAV as required, for restrictions on redemption (e.g., lock-up periods or withdrawal limitations) or where observable activity is limited.	Level 2 or 3[(a)]
Beneficial interests issued by consolidated VIEs	Valued using observable market information, where available.	Level 2 or 3
	In the absence of observable market information, valuations are based on the fair value of the underlying assets held by the VIE.	
Structured notes (included in deposits, short-term borrowings and long-term debt)	• Valuations are based on discounted cash flow analyses that consider the embedded derivative and the terms and payment structure of the note. • The embedded derivative features are considered using models such as the Black-Scholes option pricing model, simulation models, or a combination of models that may use observable or unobservable valuation inputs, depending on the embedded derivative. The specific inputs used vary according to the nature of the embedded derivative features, as described in the discussion above regarding derivatives valuation. Adjustments are then made to this base valuation to reflect JPMorgan Chase Bank, N.A.'s own credit risk (DVA).	Level 2 or 3

(a) Excludes certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient.

The following table presents the assets and liabilities reported at fair value as of December 31, 2018 and 2017, by major product category and fair value hierarchy.

Assets and liabilities measured at fair value on a recurring basis

	Fair value hierarchy				
December 31, 2018 (in millions)	Level 1	Level 2	Level 3	Derivative netting adjustments	Total fair value
Federal funds sold and securities purchased under resale agreements	$ –	$ 4,370	$ –	$ –	$ 4,370
Securities borrowed	–	5,105	–	–	5,105
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies[a]	–	29,330	487	–	29,817
Residential – nonagency	–	870	26	–	896
Commercial – nonagency	–	265	2	–	267
Total mortgage-backed securities	–	30,465	515	–	30,980
U.S. Treasury and government agencies[a]	6,552	1	–	–	6,553
Obligations of U.S. states and municipalities	–	4,287	11	–	4,298
Certificates of deposit, bankers' acceptances and commercial paper	–	318	–	–	318
Non-U.S. government debt securities	27,828	27,056	155	–	55,039
Corporate debt securities	–	12,776	232	–	13,008
Loans	–	39,863	1,403	–	41,266
Asset-backed securities	–	400	24	–	424
Total debt instruments	34,380	115,166	2,340	–	151,886
Equity securities	44,725	259	94	–	45,078
Physical commodities[b]	506	–	–	–	506
Other	–	13,178	298	–	13,476
Total debt and equity instruments[c]	79,611	128,603	2,732	–	210,946
Derivative receivables:					
Interest rate	443	275,760	1,841	(255,159)	22,885
Credit	–	18,014	857	(18,512)	359
Foreign exchange	776	167,719	853	(155,922)	13,426
Equity	–	60,504	6,584	(56,827)	10,261
Commodity	–	28,552	60	(22,005)	6,607
Total derivative receivables[d]	1,219	550,549	10,195	(508,425)	53,538
Total trading assets[e]	80,830	679,152	12,927	(508,425)	264,484
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies[a]	–	68,646	–	–	68,646
Residential – nonagency	–	8,519	1	–	8,520
Commercial – nonagency	–	6,585	–	–	6,585
Total mortgage-backed securities	–	83,750	1	–	83,751
U.S. Treasury and government agencies	56,059	–	–	–	56,059
Obligations of U.S. states and municipalities	–	36,152	–	–	36,152
Certificates of deposit	–	75	–	–	75
Non-U.S. government debt securities	15,313	8,789	–	–	24,102
Corporate debt securities	–	1,918	–	–	1,918
Asset-backed securities:					
Collateralized loan obligations	–	19,437	–	–	19,437
Other	–	7,218	–	–	7,218
Total available-for-sale securities	71,372	157,339	1	–	228,712
Loans	–	3,029	122	–	3,151
Mortgage servicing rights	–	–	6,130	–	6,130
Other assets[e][f]	5,696	–	12	–	5,708
Total assets measured at fair value on a recurring basis	$ 157,898	$ 848,995	$ 19,192	$ (508,425)	$ 517,660
Deposits	$ –	$ 19,182	$ 4,189	$ –	$ 23,371
Federal funds purchased and securities loaned or sold under repurchase agreements	–	5,215	–	–	5,215
Short-term borrowings	–	3,166	1,428	–	4,594
Trading liabilities:					
Debt and equity instruments[c]	56,196	18,329	46	–	74,571
Derivative payables:					
Interest rate	854	248,032	2,288	(244,215)	6,959
Credit	–	18,056	962	(17,632)	1,386
Foreign exchange	729	164,116	1,308	(153,427)	12,726
Equity	–	60,273	7,601	(57,692)	10,182
Commodity	–	28,605	1,233	(21,775)	8,063
Total derivative payables[d]	1,583	519,082	13,392	(494,741)	39,316
Total trading liabilities	57,779	537,411	13,438	(494,741)	113,887
Accounts payable and other liabilities	5,757	–	–	–	5,757
Long-term debt	–	13,754	12,799	–	26,553
Total liabilities measured at fair value on a recurring basis	$ 63,536	$ 578,728	$ 31,854	$ (494,741)	$ 179,377

December 31, 2017 (in millions)	Fair value hierarchy Level 1	Level 2	Level 3	Derivative netting adjustments	Total fair value
Federal funds sold and securities purchased under resale agreements	$ –	$ 2,894	$ –	$ –	$ 2,894
Securities borrowed	–	3,049	–	–	3,049
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies[a]	–	2,981	289	–	3,270
Residential – nonagency	–	1,036	24	–	1,060
Commercial – nonagency	–	109	2	–	111
Total mortgage-backed securities	–	4,126	315	–	4,441
U.S. Treasury and government agencies[a]	4,254	–	1	–	4,255
Obligations of U.S. states and municipalities	–	4,285	15	–	4,300
Certificates of deposit, bankers' acceptances and commercial paper	–	38	–	–	38
Non-U.S. government debt securities	28,837	28,777	78	–	57,692
Corporate debt securities	–	16,310	191	–	16,501
Loans	–	35,079	2,332	–	37,411
Asset-backed securities	–	589	51	–	640
Total debt instruments	33,091	89,204	2,983	–	125,278
Equity securities	52,950	32	121	–	53,103
Physical commodities[b]	1,774	–	–	–	1,774
Other	–	14,039	350	–	14,389
Total debt and equity instruments[c]	87,815	103,275	3,454	–	194,544
Derivative receivables:					
Interest rate	68	317,904	1,911	(295,441)	24,442
Credit	–	20,987	1,208	(21,481)	714
Foreign exchange	851	159,842	580	(145,215)	16,058
Equity	–	51,183	6,323	(50,403)	7,103
Commodity	–	39,723	381	(33,796)	6,308
Total derivative receivables[d]	919	589,639	10,403	(546,336)	54,625
Total trading assets[e]	88,734	692,914	13,857	(546,336)	249,169
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies[a]	–	70,280	–	–	70,280
Residential – nonagency	–	11,366	1	–	11,367
Commercial – nonagency	–	4,880	–	–	4,880
Total mortgage-backed securities	–	86,526	1	–	86,527
U.S. Treasury and government agencies	22,745	–	–	–	22,745
Obligations of U.S. states and municipalities	–	30,175	–	–	30,175
Certificates of deposit	–	59	–	–	59
Non-U.S. government debt securities	18,140	9,154	–	–	27,294
Corporate debt securities	–	2,757	–	–	2,757
Asset-backed securities:					
Collateralized loan obligations	–	20,720	276	–	20,996
Other	–	8,773	–	–	8,773
Equity securities[f]	38	–	–	–	38
Total available-for-sale securities	40,923	158,164	277	–	199,364
Loans	–	2,232	276	–	2,508
Mortgage servicing rights	–	–	6,030	–	6,030
Other assets[e][f]	7,454	–	–	–	7,454
Total assets measured at fair value on a recurring basis	$ 137,111	$ 859,253	$ 20,440	$ (546,336)	$ 470,468
Deposits	$ –	$ 17,230	$ 4,150	$ –	$ 21,380
Federal funds purchased and securities loaned or sold under repurchase agreements	–	3,405	–	–	3,405
Short-term borrowings	–	3,973	1,604	–	5,577
Trading liabilities:					
Debt and equity instruments[c]	45,597	14,834	37	–	60,468
Derivative payables:					
Interest rate	54	288,043	1,653	(282,736)	7,014
Credit	–	21,026	1,241	(21,182)	1,085
Foreign exchange	826	154,876	1,021	(144,201)	12,522
Equity	–	54,976	8,210	(53,935)	9,251
Commodity	–	39,808	1,029	(34,516)	6,321
Total derivative payables[d]	880	558,729	13,154	(536,570)	36,193
Total trading liabilities	46,477	573,563	13,191	(536,570)	96,661
Accounts payable and other liabilities	7,454	–	–	–	7,454
Long-term debt	–	11,247	10,154	–	21,401
Total liabilities measured at fair value on a recurring basis	$ 53,931	$ 609,418	$ 29,099	$ (536,570)	$ 155,878

(a) At December 31, 2018 and 2017, included total U.S. government-sponsored enterprise obligations of $57.2 billion and $49.1 billion, respectively, which were predominantly mortgage-related.
(b) Physical commodities inventories are generally accounted for at the lower of cost or net realizable value. "Net realizable value" is a term defined in U.S. GAAP as not exceeding fair value less costs to sell ("transaction costs"). Transaction costs for JPMorgan Chase Bank, N.A.'s physical commodities inventories are either not applicable or immaterial to the value of the inventory. Therefore, net realizable value approximates fair value for JPMorgan Chase Bank, N.A.'s physical commodities inventories. When fair value hedging has been applied (or when net realizable value is below cost), the carrying value of physical commodities approximates fair value, because under fair value hedge accounting,

the cost basis is adjusted for changes in fair value. For a further discussion of JPMorgan Chase Bank, N.A.'s hedge accounting relationships, refer to Note 6. To provide consistent fair value disclosure information, all physical commodities inventories have been included in each period presented.

(c) Balances reflect the reduction of securities owned (long positions) by the amount of identical securities sold but not yet purchased (short positions).

(d) As permitted under U.S. GAAP, JPMorgan Chase Bank, N.A. has elected to net derivative receivables and derivative payables and the related cash collateral received and paid when a legally enforceable master netting agreement exists. For purposes of the tables above, JPMorgan Chase Bank, N.A. does not reduce derivative receivables and derivative payables balances for this netting adjustment, either within or across the levels of the fair value hierarchy, as such netting is not relevant to a presentation based on the transparency of inputs to the valuation of an asset or liability. The level 3 balances would be reduced if netting were applied, including the netting benefit associated with cash collateral. Additionally, includes derivative receivables and payables with affiliates on a net basis. Refer to Note 20 for information regarding our derivative activities with affiliates.

(e) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not required to be classified in the fair value hierarchy. At December 31, 2018 and 2017, the fair values of these investments, which include certain hedge funds, private equity funds, real estate and other funds, were $49 million and $54 million, respectively.

(f) Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted the recognition and measurement guidance. Equity securities that were previously reported as AFS securities were reclassified to other assets upon adoption.

Level 3 valuations

JPMorgan Chase Bank, N.A. has established well-structured processes for determining fair value, including for instruments where fair value is estimated using significant unobservable inputs (level 3). For further information on JPMorgan Chase Bank, N.A.'s valuation process and a detailed discussion of the determination of fair value for individual financial instruments, refer to pages 15–18 of this Note.

Estimating fair value requires the application of judgment. The type and level of judgment required is largely dependent on the amount of observable market information available to JPMorgan Chase Bank, N.A. For instruments valued using internally developed valuation models and other valuation techniques that use significant unobservable inputs and are therefore classified within level 3 of the fair value hierarchy, judgments used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate valuation model or other valuation technique to use. Second, due to the lack of observability of significant inputs, management must assess all relevant empirical data in deriving valuation inputs including transaction details, yield curves, interest rates, prepayment speed, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit curves.

The following table presents JPMorgan Chase Bank, N.A.'s primary level 3 financial instruments, the valuation techniques used to measure the fair value of those financial instruments, the significant unobservable inputs, the range of values for those inputs and, for certain instruments, the weighted averages of such inputs. While the determination to classify an instrument within level 3 is based on the significance of the unobservable inputs to the overall fair value measurement, level 3 financial instruments typically include observable components (that is, components that are actively quoted and can be validated to external sources) in addition to the unobservable components. The level 1 and/or level 2 inputs are not included in the table. In addition, JPMorgan Chase Bank, N.A. manages the risk of the observable components of level 3 financial instruments using securities and derivative positions that are classified within levels 1 or 2 of the fair value hierarchy.

The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value.

In JPMorgan Chase Bank, N.A.'s view, the input range and the weighted average value do not reflect the degree of input uncertainty or an assessment of the reasonableness of JPMorgan Chase Bank, N.A.'s estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by JPMorgan Chase Bank, N.A. and the relative distribution of instruments within the range of characteristics. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlyings, tenors, or strike prices. The input range and weighted average values will therefore vary from period-to-period and parameter-to-parameter based on the characteristics of the instruments held by JPMorgan Chase Bank, N.A. at each balance sheet date.

For JPMorgan Chase Bank, N.A.'s derivatives and structured notes positions classified within level 3 at December 31, 2018, interest rate correlation inputs used in estimating fair value were concentrated towards the upper end of the range; equity correlation, equity-FX and equity-IR correlation inputs were concentrated in the middle of the range; commodity correlation inputs were concentrated in the middle of the range; credit correlation inputs were concentrated towards the lower end of the range; and the interest rate-foreign exchange ("IR-FX") correlation inputs were distributed across the range. In addition, the interest rate spread volatility inputs used in estimating fair value were distributed across the range; equity volatilities and commodity volatilities were concentrated in the middle of the range; and forward commodity prices used in estimating the fair value of commodity derivatives were concentrated towards the lower end of the range. Recovery rate inputs used in estimating the fair value of credit derivatives were distributed across the range; credit spreads and conditional default rates were concentrated towards the lower end of the range; loss severity and price inputs were concentrated towards the upper end of the range.

Level 3 inputs[(a)]

December 31, 2018					
Product/Instrument	Fair value (in millions)	Principal valuation technique	Unobservable inputs[(g)]	Range of input values	Weighted average
Residential mortgage-backed securities and loans[(b)]	$ 759	Discounted cash flows	Yield	4% 18%	6%
			Prepayment speed	0% - 22%	9%
			Conditional default rate	0% - 6%	1%
			Loss severity	0% - 60%	1%
Commercial mortgage-backed securities and loans[(c)]	402	Market comparables	Price	$ 0 - $ 100	$ 90
Obligations of U.S. states and municipalities	11	Market comparables	Price	$100	$ 100
Corporate debt securities	232	Market comparables	Price	$ 0 - $ 8	$ 0
Loans[(d)]	880	Market comparables	Price	$ 11 - $ 101	$ 80
Asset-backed securities	24	Market comparables	Price	$ 0 - $ 99	$ 27
Net interest rate derivatives	(589)	Option pricing	Interest rate spread volatility	16bps - 38bps	
			Interest rate correlation	(45)% - 97%	
			IR-FX correlation	45% - 60%	
	142	Discounted cash flows	Prepayment speed	4% - 30%	
Net credit derivatives	(107)	Discounted cash flows	Credit correlation	25% - 55%	
			Credit spread	10bps - 1,487bps	
			Recovery rate	20% - 70%	
			Conditional default rate	3% - 72%	
			Loss severity	100%	
	2	Market comparables	Price	$ 1 - $ 115	
Net foreign exchange derivatives	(280)	Option pricing	IR-FX correlation	(45)% - 60%	
	(175)	Discounted cash flows	Prepayment speed	8% - 9%	
Net equity derivatives	(1,017)	Option pricing	Equity volatility	14% - 57%	
			Equity correlation	20% - 98%	
			Equity-FX correlation	(75)% - 61%	
			Equity-IR correlation	20% - 60%	
Net commodity derivatives	(1,173)	Option pricing	Forward commodity price	$ 39 - $56 per barrel	
			Commodity volatility	5% - 68%	
			Commodity correlation	(51)% - 95%	
MSRs	6,130	Discounted cash flows	Refer to Note 16		
Other assets	310	Discounted cash flows	Credit spread	55bps	55bps
Long-term debt, short-term borrowings, and deposits[(e)]	18,416	Option pricing	Interest rate spread volatility	16bps - 38bps	
			Interest rate correlation	(45)% - 97%	
			IR-FX correlation	(45)% - 60%	
			Equity correlation	20% - 98%	
			Equity-FX correlation	(75)% - 61%	
			Equity-IR correlation	20% - 60%	
Other level 3 assets and liabilities, net[(f)]	203				

(a) The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the Consolidated balance sheets. Furthermore, the inputs presented for each valuation technique in the table are, in some cases, not applicable to every instrument valued using the technique as the characteristics of the instruments can differ.
(b) Includes U.S. government agency securities of $487 million, nonagency securities of $27 million and trading loans of $245 million.
(c) Includes nonagency securities of $2 million, trading loans of $278 million and non-trading loans of $122 million.
(d) Comprises trading loans.
(e) Long-term debt, short-term borrowings and deposits include structured notes issued by JPMorgan Chase Bank, N.A. that are financial instruments that typically contain embedded derivatives. The estimation of the fair value of structured notes includes the derivative features embedded within the instrument. The significant unobservable inputs are broadly consistent with those presented for derivative receivables.
(f) Includes level 3 assets and liabilities that are insignificant both individually and in aggregate.
(g) Price is a significant unobservable input for certain instruments. When quoted market prices are not readily available, reliance is generally placed on price-based internal valuation techniques. The price input is expressed assuming a par value of $100.

Changes in and ranges of unobservable inputs

The following discussion provides a description of the impact on a fair value measurement of a change in each unobservable input in isolation, and the interrelationship between unobservable inputs, where relevant and significant. The impact of changes in inputs may not be independent, as a change in one unobservable input may give rise to a change in another unobservable input. Where relationships do exist between two unobservable inputs, those relationships are discussed below. Relationships may also exist between observable and unobservable inputs (for example, as observable interest rates rise, unobservable prepayment rates decline); such relationships have not been included in the discussion below. In addition, for each of the individual relationships described below, the inverse relationship would also generally apply.

The following discussion also provides a description of attributes of the underlying instruments and external market factors that affect the range of inputs used in the valuation of JPMorgan Chase Bank, N.A.'s positions.

Yield – The yield of an asset is the interest rate used to discount future cash flows in a discounted cash flow calculation. An increase in the yield, in isolation, would result in a decrease in a fair value measurement.

Credit spread – The credit spread is the amount of additional annualized return over the market interest rate that a market participant would demand for taking exposure to the credit risk of an instrument. The credit spread for an instrument forms part of the discount rate used in a discounted cash flow calculation. Generally, an increase in the credit spread would result in a decrease in a fair value measurement.

The yield and the credit spread of a particular mortgage-backed security primarily reflect the risk inherent in the instrument. The yield is also impacted by the absolute level of the coupon paid by the instrument (which may not correspond directly to the level of inherent risk). Therefore, the range of yield and credit spreads reflects the range of risk inherent in various instruments owned by JPMorgan Chase Bank, N.A. The risk inherent in mortgage-backed securities is driven by the subordination of the security being valued and the characteristics of the underlying mortgages within the collateralized pool, including borrower FICO scores, loan-to-value ("LTV") ratios for residential mortgages and the nature of the property and/or any tenants for commercial mortgages. For corporate debt securities, obligations of U.S. states and municipalities and other similar instruments, credit spreads reflect the credit quality of the obligor and the tenor of the obligation.

Prepayment speed – The prepayment speed is a measure of the voluntary unscheduled principal repayments of a prepayable obligation in a collateralized pool. Prepayment speeds generally decline as borrower delinquencies rise. An increase in prepayment speeds, in isolation, would result in a decrease in a fair value measurement of assets valued at a premium to par and an increase in a fair value measurement of assets valued at a discount to par.

Prepayment speeds may vary from collateral pool to collateral pool, and are driven by the type and location of the underlying borrower, and the remaining tenor of the obligation as well as the level and type (e.g., fixed or floating) of interest rate being paid by the borrower. Typically collateral pools with higher borrower credit quality have a higher prepayment rate than those with lower borrower credit quality, all other factors being equal.

Conditional default rate – The conditional default rate is a measure of the reduction in the outstanding collateral balance underlying a collateralized obligation as a result of defaults. While there is typically no direct relationship between conditional default rates and prepayment speeds, collateralized obligations for which the underlying collateral has high prepayment speeds will tend to have lower conditional default rates. An increase in conditional default rates would generally be accompanied by an increase in loss severity and an increase in credit spreads. An increase in the conditional default rate, in isolation, would result in a decrease in a fair value measurement. Conditional default rates reflect the quality of the collateral underlying a securitization and the structure of the securitization itself. Based on the types of securities owned in JPMorgan Chase Bank, N.A.'s market-making portfolios, conditional default rates are most typically at the lower end of the range presented.

Loss severity – The loss severity (the inverse concept is the recovery rate) is the expected amount of future realized losses resulting from the ultimate liquidation of a particular loan, expressed as the net amount of loss relative to the outstanding loan balance. An increase in loss severity is generally accompanied by an increase in conditional default rates. An increase in the loss severity, in isolation, would result in a decrease in a fair value measurement.

The loss severity applied in valuing a mortgage-backed security investment depends on factors relating to the underlying mortgages, including the LTV ratio, the nature of the lender's lien on the property and other instrument-specific factors.

Correlation – Correlation is a measure of the relationship between the movements of two variables (e.g., how the change in one variable influences the change in the other). Correlation is a pricing input for a derivative product where the payoff is driven by one or more underlying risks. Correlation inputs are related to the type of derivative (e.g., interest rate, credit, equity, foreign exchange and commodity due to the nature of the underlying risks. When parameters are positively correlated, an increase in one parameter will result in an increase in the other parameter. When parameters are negatively correlated, an increase in one parameter will result in a decrease in the other parameter. An increase in correlation can result in an increase or a decrease in a fair value measurement. Given a short correlation position, an increase in correlation, in isolation, would generally result in a decrease in a fair value measurement.

The level of correlation used in the valuation of derivatives with multiple underlying risks depends on a number of factors including the nature of those risks. For example, the correlation between two credit risk exposures would be different than that between two interest rate risk exposures. Similarly, the tenor of the transaction may also impact the correlation input, as the relationship between the underlying risks may be different over different time periods. Furthermore, correlation levels are very much dependent on market conditions and could have a relatively wide range of levels within or across asset classes over time, particularly in volatile market conditions.

Volatility – Volatility is a measure of the variability in possible returns for an instrument, parameter or market index given how much the particular instrument, parameter or index changes in value over time. Volatility is a pricing input for options, including equity options, commodity options, and interest rate options. Generally, the higher the volatility of the underlying, the riskier the instrument. Given a long position in an option, an increase in volatility, in isolation, would generally result in an increase in a fair value measurement.

The level of volatility used in the valuation of a particular option-based derivative depends on a number of factors, including the nature of the risk underlying the option (e.g., the volatility of a particular equity security may be significantly different from that of a particular commodity index), the tenor of the derivative as well as the strike price of the option.

Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the Consolidated balance sheets amounts (including changes in fair value) for financial instruments classified by JPMorgan Chase Bank, N.A. within level 3 of the fair value hierarchy for the years ended December 31, 2018 and 2017. When a determination is made to classify a financial instrument within level 3, the determination is based on the significance of the unobservable inputs to the overall fair value measurement. However, level 3 financial instruments typically include, in addition to the unobservable or level 3 components, observable components (that is, components that are actively quoted and can be validated to external sources); accordingly, the gains and losses in the table below include changes in fair value due in part to observable factors that are part of the valuation methodology. Also, JPMorgan Chase Bank, N.A. risk-manages the observable components of level 3 financial instruments using securities and derivative positions that are classified within level 1 or 2 of the fair value hierarchy; as these level 1 and level 2 risk management instruments are not included below, the gains or losses in the following tables do not reflect the effect of JPMorgan Chase Bank, N.A.'s risk management activities related to such level 3 instruments.

Year ended December 31, 2018 (in millions)	Fair value measurements using significant unobservable inputs								Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2018
	Fair value at January 1, 2018	Total realized/ unrealized gains/ (losses)	Purchases[f]	Sales	Settlements[g]	Transfers into level 3[h]	Transfers (out of) level 3[h]	Fair value at Dec. 31, 2018	
Assets:[a]									
Trading assets:									
Debt instruments:									
Mortgage-backed securities:									
U.S. government agencies	$ 289	$ (16)	$ 443	$ (164)	$ (65)	$ –	$ –	$ 487	$ (21)
Residential – nonagency	24	(1)	33	(41)	(2)	15	(2)	26	1
Commercial – nonagency	2	1	–	–	(1)	–	–	2	(2)
Total mortgage-backed securities	315	(16)	476	(205)	(68)	15	(2)	515	(22)
U.S. Treasury and government agencies	1	–	–	–	–	–	(1)	–	–
Obligations of U.S. states and municipalities	15	1	–	–	(5)	–	–	11	1
Non-U.S. government debt securities	78	(22)	458	(277)	(11)	23	(94)	155	(9)
Corporate debt securities	191	(16)	331	(284)	(26)	230	(194)	232	13
Loans	2,332	28	1,250	(1,655)	(465)	751	(838)	1,403	(28)
Asset-backed securities	51	–	14	–	(19)	–	(22)	24	9
Total debt instruments	2,983	(25)	2,529	(2,421)	(594)	1,019	(1,151)	2,340	(36)
Equity securities	121	(33)	92	(99)	–	84	(71)	94	24
Other	350	11	408	(223)	(209)	49	(88)	298	34
Total trading assets – debt and equity instruments	3,454	(47) (c)	3,029	(2,743)	(803)	1,152	(1,310)	2,732	22 (c)
Net derivative receivables:[b]									
Interest rate	258	271	111	(641)	(557)	(27)	138	(447)	349
Credit	(33)	(37)	5	(6)	(57)	1	22	(105)	(27)
Foreign exchange	(441)	133	182	(290)	34	(115)	42	(455)	5
Equity	(1,887)	18	2,966	(1,769)	(1,555)	1,037	173	(1,017)	(133)
Commodity	(648)	(54)	8	(175)	(324)	(3)	23	(1,173)	47
Total net derivative receivables	(2,751)	331 (c)	3,272	(2,881)	(2,459)	893	398	(3,197)	241 (c)
Available-for-sale securities:									
Mortgage-backed securities	1	–	–	–	–	–	–	1	–
Asset-backed securities	276	1	–	–	(277)	–	–	–	–
Total available-for-sale securities	277	1 (d)	–	–	(277)	–	–	1	–
Loans	276	(7) (c)	123	–	(196)	–	(74)	122	(7) (c)
Mortgage servicing rights	6,030	230 (e)	1,246	(636)	(740)	–	–	6,130	230 (e)
Other assets	–	–	14	(2)	–	–	–	12	–

Year ended December 31, 2018 (in millions)	Fair value measurements using significant unobservable inputs									Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2018
	Fair value at January 1, 2018	Total realized/ unrealized (gains)/ losses	Purchases	Sales	Issuances	Settlements[g]	Transfers into level 3[h]	Transfers (out of) level 3[h]	Fair value at Dec. 31, 2018	
Liabilities:[a]										
Deposits	$ 4,150	$ (135) (c)(i)	$ –	$ –	$ 1,400	$ (560)	$ 2	$ (668)	$ 4,189	$ (192) (c)(i)
Short-term borrowings	1,604	(188) (c)(i)	–	–	3,031	(2,999)	87	(107)	1,428	(129) (c)(i)
Trading liabilities – debt and equity instruments	37	30 (c)	(97)	101	–	(1)	10	(34)	46	16 (c)
Beneficial interests issued by consolidated VIEs	–	–	–	–	–	–	–	–	–	–
Long-term debt	10,154	(1,442) (c)(i)	–	–	7,465	(2,968)	623	(1,033)	12,799	(651) (c)(i)

Year ended December 31, 2017 (in millions)	Fair value at January 1, 2017	Total realized/unrealized gains/(losses)	Purchases[f]	Sales	Settlements[g]	Transfers into level 3[h]	Transfers (out of) level 3[h]	Fair value at Dec. 31, 2017	Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2017
	Fair value measurements using significant unobservable inputs								
Assets:[a]									
Trading assets:									
Debt instruments:									
Mortgage-backed securities:									
U.S. government agencies	$ 369	$ (11)	$ 155	$ (163)	$ (61)	$ –	$ –	$ 289	$ (17)
Residential – nonagency	11	3	5	–	(4)	18	(9)	24	4
Commercial – nonagency	6	5	1	(5)	(9)	4	–	2	–
Total mortgage-backed securities	386	(3)	161	(168)	(74)	22	(9)	315	(13)
U.S. Treasury and government agencies	–	–	–	–	–	1	–	1	–
Obligations of U.S. states and municipalities	19	1	–	–	(5)	–	–	15	1
Non-U.S. government debt securities	46	–	560	(519)	–	62	(71)	78	–
Corporate debt securities	318	13	514	(472)	(121)	101	(162)	191	5
Loans	4,325	225	2,172	(2,613)	(1,071)	760	(1,466)	2,332	44
Asset-backed securities	70	23	243	(251)	(14)	25	(45)	51	6
Total debt instruments	5,164	259	3,650	(4,023)	(1,285)	971	(1,753)	2,983	43
Equity securities	89	33	51	(44)	(5)	16	(19)	121	23
Other	281	133	151	(51)	(205)	60	(19)	350	110
Total trading assets – debt and equity instruments	5,534	425 (c)	3,852	(4,118)	(1,495)	1,047	(1,791)	3,454	176 (c)
Net derivative receivables:[b]									
Interest rate	1,001	(87)	142	(194)	(494)	41	(151)	258	(688)
Credit	96	(170)	5	(6)	–	81	(39)	(33)	7
Foreign exchange	(1,531)	1	12	(23)	893	(33)	240	(441)	9
Equity	(1,488)	(243)	2,106	(1,162)	(943)	26	(183)	(1,887)	172
Commodity	35	(329)	–	–	(375)	39	(18)	(648)	22
Total net derivative receivables	(1,887)	(828) (c)	2,265	(1,385)	(919)	154	(151)	(2,751)	(478) (c)
Available-for-sale securities:									
Mortgage-backed securities	1	–	–	–	–	–	–	1	–
Asset-backed securities	663	15	–	(50)	(352)	–	–	276	14
Total available-for-sale securities	664	15 (d)	–	(50)	(352)	–	–	277	14 (d)
Loans	568	34 (c)	1	(26)	(301)	–	–	276	3 (c)
Mortgage servicing rights	6,096	(232) (e)	1,103	(140)	(797)	–	–	6,030	(232) (e)
Other assets	41	9 (c)	–	(13)	(37)	–	–	–	–

Year ended December 31, 2017 (in millions)	Fair value at January 1, 2017	Total realized/unrealized (gains)/losses	Purchases	Sales	issuances	Settlements[g]	Transfers into level 3[h]	Transfers (out of) level 3[h]	Fair value at Dec. 31, 2017	Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2017
	Fair value measurements using significant unobservable inputs									
Liabilities:[a]										
Deposits	$ 2,121	$ 169 (c)(i)	$ –	$ –	$ 2,990	$ (287)	$ 12	$ (855)	$ 4,150	$ 192 (c)(i)
Short-term borrowings	1,019	102 (c)(i)	–	–	3,019	(2,488)	147	(195)	1,604	109 (c)(i)
Trading liabilities – debt and equity instruments	36	(2) (c)	(43)	45	–	1	–	–	37	–
Beneficial interests issued by consolidated VIEs	–	–	–	–	–	–	–	–	–	–
Long-term debt	7,662	1,080 (c)(i)	–	–	7,613	(7,213)	1,398	(386)	10,154	761 (c)(i)

(a) Level 3 assets as a percentage of total JPMorgan Chase Bank, N.A. assets accounted for at fair value (including assets measured at fair value on a nonrecurring basis) were 4% and 5% at December 31, 2018 and 2017, respectively. Level 3 liabilities as a percentage of total JPMorgan Chase Bank, N.A. liabilities accounted for at fair value (including liabilities measured at fair value on a nonrecurring basis) were 18% and 19% at December 31, 2018 and 2017, respectively.
(b) All level 3 derivatives are presented on a net basis, irrespective of underlying counterparty.
(c) Predominantly reported in principal transactions revenue, except for changes in fair value for consumer & community banking business mortgage loans, and lending-related commitments originated with the intent to sell, and mortgage loan purchase commitments, which are reported in mortgage fees and related income.
(d) Realized gains/(losses) on AFS securities, as well as other-than-temporary impairment ("OTTI") losses that are recorded in earnings, are reported in investment securities gains/(losses). Unrealized gains/(losses) are reported in OCI. Realized gains/(losses) and foreign exchange hedge accounting adjustments recorded in income on AFS securities were $1 million and zero for the years ended December 31, 2018 and 2017, respectively. Unrealized gains/(losses) recorded on AFS securities in OCI were zero and $15 million for the years ended December 31, 2018 and 2017, respectively.
(e) Changes in fair value for the MSRs are reported in mortgage fees and related income.
(f) Loan originations are included in purchases.
(g) Includes financial assets and liabilities that have matured, been partially or fully repaid, impacts of modifications, deconsolidations associated with beneficial interests in VIEs and other items.
(h) All transfers into and/or out of level 3 are based on changes in the observability and/or significance of the valuation inputs and are assumed to occur at the beginning of the quarterly reporting period in which they occur.
(i) Realized (gains)/losses due to DVA for fair value option elected liabilities are reported in principal transactions revenue, and they were not material for the years ended December 31, 2018 and 2017, respectively. Unrealized (gains)/losses are reported in OCI and they were $(161) million and $6 million for the years ended December 31, 2018 and 2017, respectively.

Level 3 analysis

Consolidated balance sheets changes

Level 3 assets (including assets measured at fair value on a nonrecurring basis) were 0.9% of total JPMorgan Chase Bank, N.A. assets at December 31, 2018. The following describes significant changes to level 3 assets since December 31, 2017, for those items measured at fair value on a recurring basis. For further information on changes impacting items measured at fair value on a nonrecurring basis, refer to Assets and liabilities measured at fair value on a nonrecurring basis on page 28.

For the year ended December 31, 2018

Level 3 assets were $19.2 billion at December 31, 2018, reflecting a decrease of $1.2 billion from December 31, 2017, largely due to:

- $722 million decrease in trading assets – debt and equity instruments was driven by a decrease of $929 million in trading loans predominantly due to settlements and net sales.

Transfers between levels for instruments carried at fair value on a recurring basis

During the year ended December 31, 2018, transfers from level 3 into level 2 included the following:

- $1.3 billion of total debt and equity instruments, the majority of which were trading loans, driven by an increase in observability.
- $2.0 billion of gross equity derivative receivables and $2.2 billion of gross equity derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- $1.0 billion of long-term debt driven by an increase in observability.

During the year ended December 31, 2018, transfers from level 2 into level 3 included the following:

- $1.2 billion of total debt and equity instruments, the majority of which were trading loans, driven by a decrease in observability.
- $2.7 billion of gross equity derivative receivables and $1.7 billion of gross equity derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.

During the year ended December 31, 2017, transfers from level 3 into level 2 included the following:

- $1.8 billion of equity derivative receivables and $1.6 billion of equity derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- $1.5 billion of trading loans driven by an increase in observability.

During the year ended December 31, 2017, transfers from level 2 into level 3 included the following:

- $3.4 billion of gross equity derivative receivables and $3.4 billion of gross equity derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.
- $1.4 billion of long-term debt driven by a decrease in observability.

All transfers are based on changes in the observability and/or significance of the valuation inputs and are assumed to occur at the beginning of the quarterly reporting period in which they occur.

Gains and losses

The following describes significant components of total realized/unrealized gains/(losses) for instruments measured at fair value on a recurring basis for the years ended December 31, 2018 and 2017. For further information on these instruments, refer to Changes in level 3 recurring fair value measurements rollforward tables on pages 24–27.

2018

- $1.7 billion of net gains on liabilities predominantly driven by market movements in long-term debt.

2017

- $1.3 billion of net losses on liabilities largely driven by market movements in long-term debt.

Assets and liabilities measured at fair value on a nonrecurring basis

The following tables present the assets held as of December 31, 2018 and 2017, respectively, for which a nonrecurring fair value adjustment was recorded during the years ended December 31, 2018 and 2017, respectively, by major product category and fair value hierarchy.

	Fair value hierarchy			
December 31, 2018 (in millions)	Level 1	Level 2	Level 3	Total fair value
Loans	**$ –**	**$ 273**	**$ 251** (b)	**$ 524**
Other assets(a)	**–**	**9**	**433**	**442**
Total assets measured at fair value on a nonrecurring basis	**$ –**	**$ 282**	**$ 684**	**$ 966**

	Fair value hierarchy			
December 31, 2017 (in millions)	Level 1	Level 2	Level 3	Total fair value
Loans	$ –	$ 25	$ 596	$ 621
Other assets	–	228	181	409
Total assets measured at fair value on a nonrecurring basis	$ –	$ 253	$ 777	$ 1,030

(a) Primarily includes equity securities without readily determinable fair values that were adjusted based on observable price changes in orderly transactions from an identical or similar investment of the same issuer (measurement alternative) as a result of the adoption of the recognition and measurement guidance. Of the $433 million in level 3 assets measured at fair value on a nonrecurring basis as of December 31, 2018, $299 million related to such equity securities. These equity securities are classified as level 3 due to the infrequency of the observable prices and/or the restrictions on the shares.

(b) Of the $251 million in level 3 assets measured at fair value on a nonrecurring basis as of December 31, 2018, $212 million related to residential real estate loans carried at the net realizable value of the underlying collateral (e.g., collateral-dependent loans and other loans charged off in accordance with regulatory guidance). These amounts are classified as level 3 as they are valued using information from broker's price opinions, appraisals and automated valuation models and discounted based upon JPMorgan Chase Bank, N.A.'s experience with actual liquidation values. These discounts ranged from 13% to 54% with a weighted average of 25%.

There were no material liabilities measured at fair value on a nonrecurring basis at December 31, 2018 and 2017.

Nonrecurring fair value changes

The following table presents the total change in value of assets and liabilities for which a fair value adjustment has been recognized for the years ended December 31, 2018 and 2017, related to financial instruments held at those dates.

December 31, (in millions)	**2018**	2017
Loans	**$ (63)**	$ (159)
Other assets	**225** (a)	(141)
Accounts payable and other liabilities	**–**	(1)
Total nonrecurring fair value gains/(losses)	**$ 162**	$ (301)

(a) Included $241 million for the year ended 2018 of net gains as a result of the measurement alternative.

For further information about the measurement of impaired collateral-dependent loans, and other loans where the carrying value is based on the fair value of the underlying collateral (e.g., residential mortgage loans charged off in accordance with regulatory guidance), refer to Note 13.

Equity securities without readily determinable fair values

As a result of the adoption of the recognition and measurement guidance and the election of the measurement alternative in the first quarter of 2018, JPMorgan Chase Bank, N.A. measures certain equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer, with such changes recognized in other income.

In its determination of the new carrying values upon observable price changes, JPMorgan Chase Bank, N.A. may adjust the prices if deemed necessary to arrive at JPMorgan Chase Bank, N.A.'s estimated fair values. Such adjustments may include adjustments to reflect the different rights and obligations of similar securities, and other adjustments that are consistent with JPMorgan Chase Bank, N.A.'s valuation techniques for private equity direct investments.

The following table presents the carrying value of equity securities without readily determinable fair values held as of December 31, 2018, that are measured under the measurement alternative and the related adjustments recorded during the periods presented for those securities with observable price changes. These securities are included in the nonrecurring fair value tables when applicable price changes are observable.

(in millions)	As of or for the Year ended December 31, 2018
Other assets	
Carrying value	$ 464
Upward carrying value changes	253
Downward carrying value changes/impairment	(12)

Included in other assets above is JPMorgan Chase Bank, N.A.'s interest in approximately 40 million Visa Class B shares, recorded at a nominal carrying value. These shares are subject to certain transfer restrictions currently and will be convertible into Visa Class A shares upon final resolution of certain litigation matters involving Visa. The conversion rate of Visa Class B shares into Visa Class A shares is 1.6298 at December 31, 2018, and may be adjusted by Visa depending on developments related to the litigation matters.

Additional disclosures about the fair value of financial instruments that are not carried on the Consolidated balance sheets at fair value

U.S. GAAP requires disclosure of the estimated fair value of certain financial instruments. Financial instruments within the scope of these disclosure requirements are included in the following table. However, certain financial instruments and all nonfinancial instruments are excluded from the scope of these disclosure requirements. Accordingly, the fair value disclosures provided in the following table include only a partial estimate of the fair value of JPMorgan Chase Bank, N.A.'s assets and liabilities. For example, JPMorgan Chase Bank, N.A. has developed long-term relationships with its customers through its deposit base and credit card accounts, commonly referred to as core deposit intangibles and credit card relationships. In the opinion of management, these items, in the aggregate, add significant value to JPMorgan Chase Bank, N.A., but their fair value is not disclosed in this Note.

Financial instruments for which carrying value approximates fair value

Certain financial instruments that are not carried at fair value on the Consolidated balance sheets are carried at amounts that approximate fair value, due to their short-term nature and generally negligible credit risk. These instruments include cash and due from banks, deposits with banks, federal funds sold, securities purchased under resale agreements and securities borrowed, short-term receivables and accrued interest receivable, short-term borrowings, federal funds purchased, securities loaned and sold under repurchase agreements, accounts payable, and accrued liabilities. In addition, U.S. GAAP requires that the fair value of deposit liabilities with no stated maturity (i.e., demand, savings and certain money market deposits) be equal to their carrying value; recognition of the inherent funding value of these instruments is not permitted.

The following table presents by fair value hierarchy classification the carrying values and estimated fair values at December 31, 2018 and 2017, of financial assets and liabilities, excluding financial instruments that are carried at fair value on a recurring basis, and their classification within the fair value hierarchy.

	December 31, 2018					December 31, 2017				
		Estimated fair value hierarchy					Estimated fair value hierarchy			
(in billions)	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value
Financial assets										
Cash and due from banks	**$ 21.6**	**$ 21.6**	**$ –**	**$ –**	**$ 21.6**	$ 25.3	$ 25.3	$ –	$ –	$ 25.3
Deposits with banks	**255.1**	**255.1**	**–**	**–**	**255.1**	404.6	404.6	–	–	404.6
Accrued interest and accounts receivable	**48.8**	**–**	**48.7**	**0.1**	**48.8**	48.0	–	48.0	–	48.0
Federal funds sold and securities purchased under resale agreements	**271.1**	**–**	**271.1**	**–**	**271.1**	152.3	–	152.3	–	152.3
Securities borrowed	**40.2**	**–**	**40.2**	**–**	**40.2**	36.0	–	36.0	–	36.0
Investment securities, held-to-maturity	**31.4**	**–**	**31.5**	**–**	**31.5**	47.7	–	48.7	–	48.7
Loans, net of allowance for loan losses[(a)]	**966.6**	**–**	**239.8**	**725.5**	**965.3**	913.6	–	214.1	702.6	916.7
Other	**44.4**	**–**	**43.7**	**0.8**	**44.5**	40.8	–	39.9	2.3	42.2
Financial liabilities										
Deposits	**$ 1,534.0**	**$ –**	**$ 1,534.0**	**$ –**	**$ 1,534.0**	$ 1,514.2	$ –	$ 1,514.2	$ –	$ 1,514.2
Federal funds purchased and securities loaned or sold under repurchase agreements	**102.6**	**–**	**102.6**	**–**	**102.6**	91.1	–	91.1	–	91.1
Short-term borrowings	**17.3**	**–**	**17.3**	**–**	**17.3**	3.4	–	3.2	0.2	3.4
Accounts payable and other liabilities	**75.8**	**0.2**	**73.0**	**2.3**	**75.5**	70.7	–	67.8	2.7	70.5
Beneficial interests issued by consolidated VIEs	**20.3**	**–**	**20.2**	**–**	**20.2**	26.1	–	26.1	–	26.1
Long-term debt and junior subordinated deferrable interest debentures	**83.7**	**–**	**80.2**	**3.3**	**83.5**	95.7	–	91.8	3.2	95.0

Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted several new accounting standards. For additional information, refer to Note 1.

(a) Fair value is typically estimated using a discounted cash flow model that incorporates the characteristics of the underlying loans (including principal, contractual interest rate and contractual fees) and other key inputs, including expected lifetime credit losses, interest rates, prepayment rates, and primary origination or secondary market spreads. For certain loans, the fair value is measured based on the value of the underlying collateral. The difference between the estimated fair value and carrying value of a financial asset or liability is the result of the different methodologies used to determine fair value as compared with carrying value. For example, credit losses are estimated for a financial asset's remaining life in a fair value calculation but are estimated for a loss emergence period in the allowance for loan loss calculation; future loan income (interest and fees) is incorporated in a fair value calculation but is generally not considered in the allowance for loan losses.

The majority of JPMorgan Chase Bank, N.A.'s lending-related commitments are not carried at fair value on a recurring basis on the Consolidated balance sheets. The carrying value of the wholesale allowance for lending-related commitments and the estimated fair value of these wholesale lending-related commitments were as follows for the periods indicated.

	December 31, 2018					December 31, 2017				
		Estimated fair value hierarchy					Estimated fair value hierarchy			
(in billions)	Carrying value[(a)]	Level 1	Level 2	Level 3	Total estimated fair value	Carrying value[(a)]	Level 1	Level 2	Level 3	Total estimated fair value
Wholesale lending-related commitments	**$ 1.0**	**$ –**	**$ –**	**$ 1.9**	**$ 1.9**	$ 1.1	$ –	$ –	$ 1.6	$ 1.6

(a) Excludes the current carrying values of the guarantee liability and the offsetting asset, each of which is recognized at fair value at the inception of the guarantees.

JPMorgan Chase Bank, N.A. does not estimate the fair value of consumer lending-related commitments. In many cases, JPMorgan Chase Bank, N.A. can reduce or cancel these commitments by providing the borrower notice or, in some cases as permitted by law, without notice. For a further discussion of the valuation of lending-related commitments, refer to page 17 of this Note.

Note 4 – Fair value option

The fair value option provides an option to elect fair value as an alternative measurement for selected financial assets, financial liabilities, unrecognized firm commitments, and written loan commitments.

JPMorgan Chase Bank, N.A. has elected to measure certain instruments at fair value for several reasons including to mitigate income statement volatility caused by the differences between the measurement basis of elected instruments (e.g., certain instruments elected were previously accounted for on an accrual basis) and the associated risk management arrangements that are accounted for on a fair value basis, as well as to better reflect those instruments that are managed on a fair value basis.

JPMorgan Chase Bank, N.A.'s election of fair value includes the following instruments:

- Loans purchased or originated as part of securitization warehousing activity, subject to bifurcation accounting, or managed on a fair value basis, including lending-related commitments
- Certain securities financing agreements, such as those with an embedded derivative and/or a maturity of greater than one year
- Owned beneficial interests in securitized financial assets that contain embedded credit derivatives, which would otherwise be required to be separately accounted for as a derivative instrument
- Structured notes, which are predominantly financial instruments that contain embedded derivatives, that are issued as part of the corporate & investment banking business's client-driven activities
- Certain long-term beneficial interests issued by the corporate & investment banking business's consolidated securitization trusts where the underlying assets are carried at fair value

Changes in fair value under the fair value option election

The following table presents the changes in fair value included in the Consolidated statements of income for the years ended December 31, 2018 and 2017 for items for which the fair value option was elected. The profit and loss information presented below only includes the financial instruments that were elected to be measured at fair value; related risk management instruments, which are required to be measured at fair value, are not included in the table.

	2018			2017		
December 31, (in millions)	Principal transactions	All other income	Total changes in fair value recorded[e]	Principal transactions	All other income	Total changes in fair value recorded[e]
Federal funds sold and securities purchased under resale agreements	**$ 2**	**$ –**	**$ 2**	$ 22	$ –	$ 22
Securities borrowed	**22**	**–**	**22**	50	–	50
Trading assets:						
Debt and equity instruments, excluding loans	**(1,881)**	**1** (c)	**(1,880)**	1,851	2 (c)	1,853
Loans reported as trading assets:						
Changes in instrument-specific credit risk	**393**	**–**	**393**	298	14 (c)	312
Other changes in fair value	**159**	**185** (c)	**344**	216	747 (c)	963
Loans:						
Changes in instrument-specific credit risk	**(1)**	**–**	**(1)**	(1)	–	(1)
Other changes in fair value	**(1)**	**–**	**(1)**	(12)	3 (c)	(9)
Other assets	**–**	**–**	**–**	–	3 (d)	3
Deposits[a]	**181**	**–**	**181**	(546)	–	(546)
Federal funds purchased and securities loaned or sold under repurchase agreements	**(1)**	**–**	**(1)**	(38)	–	(38)
Short-term borrowings[a]	**374**	**–**	**374**	(1,186)	–	(1,186)
Trading liabilities	**1**	**–**	**1**	(1)	–	(1)
Beneficial interests issued by consolidated VIEs	**–**	**–**	**–**	–	–	–
Long-term debt[a][b]	**1,272**	**–**	**1,272**	(969)	–	(969)

(a) Unrealized gains/(losses) due to instrument-specific credit risk (DVA) for liabilities for which the fair value option has been elected is recorded in OCI, while realized gains/(losses) are recorded in principal transactions revenue. Realized gains/(losses) due to instrument-specific credit risk recorded in principal transactions revenue were not material for the years ended December 31, 2018 and 2017.

(b) Long-term debt measured at fair value predominantly relates to structured notes. Although the risk associated with the structured notes is actively managed, the gains/(losses) reported in this table do not include the income statement impact of the risk management instruments used to manage such risk.

(c) Reported in mortgage fees and related income.

(d) Reported in other income.

(e) Changes in fair value exclude contractual interest, which is included in interest income and interest expense for all instruments other than hybrid financial instruments. For further information regarding interest income and interest expense, refer to Note 8.

Determination of instrument-specific credit risk for items for which a fair value election was made

The following describes how the gains and losses that are attributable to changes in instrument-specific credit risk, were determined.

- Loans and lending-related commitments: For floating-rate instruments, all changes in value are attributed to instrument-specific credit risk. For fixed-rate instruments, an allocation of the changes in value for the period is made between those changes in value that are interest rate-related and changes in value that are credit-related. Allocations are generally based on an analysis of borrower-specific credit spread and recovery information, where available, or benchmarking to similar entities or industries.
- Long-term debt: Changes in value attributable to instrument-specific credit risk were derived principally from observable changes in JPMorgan Chase Bank, N.A.'s credit spread as observed in the bond market.
- Securities financing agreements: Generally, for these types of agreements, there is a requirement that collateral be maintained with a market value equal to or in excess of the principal amount loaned; as a result, there would be no adjustment or an immaterial adjustment for instrument-specific credit risk related to these agreements.

Difference between aggregate fair value and aggregate remaining contractual principal balance outstanding

The following table reflects the difference between the aggregate fair value and the aggregate remaining contractual principal balance outstanding as of December 31, 2018 and 2017, for loans, long-term debt and long-term beneficial interests for which the fair value option has been elected.

	2018			2017		
December 31, (in millions)	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding
Loans[(a)]						
Nonaccrual loans						
Loans reported as trading assets	**$ 2,794**	**$ 1,098**	**$ (1,696)**	$ 2,703	$ 1,073	$ (1,630)
Loans	**39**	**–**	**(39)**	39	–	(39)
Subtotal	**2,833**	**1,098**	**(1,735)**	2,742	1,073	(1,669)
All other performing loans						
Loans reported as trading assets	**41,072**	**40,168**	**(904)**	36,637	36,338	(299)
Loans	**3,186**	**3,151**	**(35)**	2,539	2,508	(31)
Total loans	**$ 47,091**	**$ 44,417**	**$ (2,674)**	$ 41,918	$ 39,919	$ (1,999)
Long-term debt						
Principal-protected debt	**$ 11,314** (c)	**$ 10,903**	**$ (411)**	$ 6,253 (c)	$ 6,024	$ (229)
Nonprincipal-protected debt[(b)]	**–**	**15,650**	**NA**	–	15,377	NA
Total long-term debt	**NA**	**$ 26,553**	**NA**	NA	$ 21,401	NA

(a) There were no performing loans that were ninety days or more past due as of December 31, 2018 and 2017.
(b) Remaining contractual principal is not applicable to nonprincipal-protected notes. Unlike principal-protected structured notes, for which JPMorgan Chase Bank, N.A. is obligated to return a stated amount of principal at the maturity, nonprincipal-protected structured notes do not obligate JPMorgan Chase Bank, N.A. to return a stated amount of principal at maturity, but to return an amount based on the performance of an underlying variable or derivative feature embedded in the note. However, investors are exposed to the credit risk of JPMorgan Chase Bank, N.A. as issuer for both nonprincipal-protected and principal-protected notes.
(c) Where JPMorgan Chase Bank, N.A. issues principal-protected zero-coupon or discount notes, the balance reflects the contractual principal payment at maturity or, if applicable, the contractual principal payment at JPMorgan Chase Bank, N.A.'s next call date.

At December 31, 2018 and 2017, the contractual amount of lending-related commitments for which the fair value option was elected was $6.9 billion and $7.4 billion, respectively, with a corresponding fair value of $(82) million and $(82) million, respectively. For further information regarding off-balance sheet lending-related financial instruments, refer to Note 25.

Note 5 – Credit risk concentrations

Concentrations of credit risk arise when a number of clients, counterparties or customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions.

JPMorgan Chase Bank, N.A. regularly monitors various segments of its credit portfolios to assess potential credit risk concentrations and to obtain additional collateral when deemed necessary and permitted under JPMorgan Chase Bank, N.A.'s agreements. Senior management is significantly involved in the credit approval and review process, and risk levels are adjusted as needed to reflect JPMorgan Chase Bank, N.A.'s risk appetite.

In JPMorgan Chase Bank, N.A.'s consumer portfolio, concentrations are managed primarily by product and by U.S. geographic region, with a key focus on trends and concentrations at the portfolio level, where potential credit risk concentrations can be remedied through changes in underwriting policies and portfolio guidelines. For additional information on the geographic composition of JPMorgan Chase Bank, N.A.'s consumer loan portfolios, refer to Note 13. In the wholesale portfolio, credit risk concentrations are evaluated primarily by industry and monitored regularly on both an aggregate portfolio level and on an individual client or counterparty basis.

JPMorgan Chase Bank, N.A.'s wholesale exposure is managed through loan syndications and participations, loan sales, securitizations, credit derivatives, master netting agreements, collateral and other risk-reduction techniques. For additional information on loans, refer to Note 13.

JPMorgan Chase Bank, N.A. does not believe that its exposure to any particular loan product or industry segment (e.g., real estate), or its exposure to residential real estate loans with high LTV ratios, results in a significant concentration of credit risk.

Terms of loan products and collateral coverage are included in JPMorgan Chase Bank, N.A.'s assessment when extending credit and establishing its allowance for loan losses.

The table below presents both on–balance sheet and off–balance sheet consumer and wholesale-related credit exposure by JPMorgan Chase Bank, N.A.'s three credit portfolio segments as of December 31, 2018 and 2017.

As a result of continued growth and the relative size of the portfolio, exposure to "Individuals," which was previously disclosed in "All Other," is now separately disclosed in the table below as "Individuals and Individual Entities." This category predominantly consists of wealth management clients within the asset & wealth management business and includes exposure to personal investment companies and personal and testamentary trusts. Predominantly all of this exposure is secured, largely by cash and marketable securities.

	2018				2017			
		On-balance sheet				On-balance sheet		
December 31, (in millions)	Credit exposure(g)	Loans	Derivatives	Off-balance sheet(h)	Credit exposure(g)	Loans	Derivatives	Off-balance sheet(h)
Consumer, excluding credit card	**$ 419,770**	**$ 373,704**	**$ –**	**$ 46,066**	$ 421,198	$ 372,645	$ –	$ 48,553
Credit card	**762,011**	**156,632**	**–**	**605,379**	722,497	149,511	–	572,986
Total consumer-related	**1,181,781**	**530,336**	**–**	**651,445**	1,143,695	522,156	–	621,539
Wholesale-related(a)								
Real Estate	**143,316**	**115,737**	**164**	**27,415**	139,403	113,642	153	25,608
Individuals and Individual Entities(b)	**97,077**	**86,586**	**1,016**	**9,475**	87,363	77,768	1,250	8,345
Consumer & Retail	**94,783**	**36,898**	**1,084**	**56,801**	87,651	31,016	1,114	55,521
Technology, Media & Telecommunications	**72,646**	**16,980**	**2,667**	**52,999**	59,246	13,663	2,265	43,318
Industrials	**58,522**	**19,120**	**958**	**38,444**	55,262	18,154	1,160	35,948
Banks & Finance Cos	**50,205**	**28,825**	**6,173**	**15,207**	49,020	25,880	6,784	16,356
Healthcare	**47,510**	**15,848**	**1,805**	**29,857**	55,341	15,698	2,110	37,533
Oil & Gas	**42,533**	**12,945**	**556**	**29,032**	41,023	12,493	1,561	26,969
Asset Managers	**41,961**	**16,745**	**8,658**	**16,558**	31,801	11,326	7,707	12,768
Utilities	**27,888**	**5,532**	**1,579**	**20,777**	28,859	6,083	1,806	20,970
State & Municipal Govt(c)	**26,741**	**9,747**	**1,963**	**15,031**	27,828	11,407	2,810	13,611
Central Govt	**18,412**	**3,867**	**12,825**	**1,720**	19,129	3,375	13,884	1,870
Automotive	**17,338**	**5,170**	**398**	**11,770**	14,820	4,903	342	9,575
Chemicals & Plastics	**16,034**	**4,902**	**180**	**10,952**	15,934	5,654	197	10,083
Transportation	**15,643**	**6,375**	**1,102**	**8,166**	15,776	6,714	975	8,087
Metals & Mining	**15,247**	**5,370**	**377**	**9,500**	14,160	4,728	691	8,741
Insurance	**12,633**	**1,355**	**2,562**	**8,716**	14,087	1,411	2,802	9,874
Financial Markets Infrastructure	**7,397**	**18**	**5,854**	**1,525**	4,073	351	2,536	1,186
Securities Firms	**3,860**	**532**	**1,993**	**1,335**	4,366	1,679	1,680	1,007
All other(d)	**68,300**	**45,217**	**1,624**	**21,459**	60,621	35,934	2,798	21,889
Subtotal	**878,046**	**437,769**	**53,538**	**386,739**	825,763	401,879	54,625	369,259
Loans held-for-sale and loans at fair value	**15,028**	**15,028**	**–**	**–**	5,607	5,607	–	–
Receivables from customers and other(e)	**2,098**	**–**	**–**	**–**	1,635	–	–	–
Total wholesale-related	**895,172**	**452,797**	**53,538**	**386,739**	833,005	407,486	54,625	369,259
Total exposure(f)(g)	**$ 2,076,953**	**$ 983,133**	**$ 53,538**	**$ 1,038,184**	$ 1,976,700	$ 929,642	$ 54,625	$ 990,798

(a) The industry rankings presented in the table as of December 31, 2017, are based on the industry rankings of the corresponding exposures at December 31, 2018, not actual rankings of such exposures at December 31, 2017.

(b) Individuals and Individual Entities predominantly consists of wealth management clients within the asset & wealth management business and includes exposure to personal investment companies and personal and testamentary trusts.

(c) In addition to the credit risk exposure to states and municipal governments (both U.S. and non-U.S.) at December 31, 2018 and 2017, noted above, JPMorgan Chase Bank, N.A. held: \$4.3 billion and \$4.3 billion, respectively, of trading securities; \$36.2 billion and \$30.2 billion, respectively, of AFS securities; and 4.8 billion and \$14.4 billion, respectively, of held-to-maturity ("HTM") securities, issued by U.S. state and municipal governments. For further information, refer to Note 3 and Note 11.

(d) All other includes: SPEs and Private education and civic organizations, representing approximately 92% and 8%, respectively, at December 31, 2018 and 90% and 10%, respectively, at December 31, 2017. For more information on exposures to SPEs, refer to Note 15.

(e) Receivables from customers primarily represent held-for-investment margin loans to brokerage customers (Prime services in the corporate & investment banking business and the asset & wealth management business) that are collateralized through assets maintained in the clients' brokerage accounts, as such no allowance is held against these receivables. These receivables are reported within accrued interest and accounts receivable on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets.

(f) Excludes cash placed with banks of \$266.5 billion and \$420.8 billion, at December 31, 2018 and 2017, respectively, which is predominantly placed with various central banks, primarily Federal Reserve Banks.

(g) Credit exposure is net of risk participations and excludes the benefit of credit derivatives used in credit portfolio management activities held against derivative receivables or loans and liquid securities and other cash collateral held against derivative receivables.

(h) Represents lending-related financial instruments.

Note 6 – Derivative instruments

Derivative contracts derive their value from underlying asset prices, indices, reference rates, other inputs or a combination of these factors and may expose counterparties to risks and rewards of an underlying asset or liability without having to initially invest in, own or exchange the asset or liability. JPMorgan Chase Bank, N.A. makes markets in derivatives for clients and also uses derivatives to hedge or manage its own risk exposures. Predominantly all of JPMorgan Chase Bank, N.A.'s derivatives are entered into for market-making or risk management purposes.

Market-making derivatives
The majority of JPMorgan Chase Bank, N.A.'s derivatives are entered into for market-making purposes. Clients use derivatives to mitigate or modify interest rate, credit, foreign exchange, equity and commodity risks. JPMorgan Chase Bank, N.A. actively manages the risks from its exposure to these derivatives by entering into other derivative contracts or by purchasing or selling other financial instruments that partially or fully offset the exposure from client derivatives.

Risk management derivatives
JPMorgan Chase Bank, N.A. manages certain market and credit risk exposures using derivative instruments, including derivatives in hedge accounting relationships and other derivatives that are used to manage risks associated with specified assets and liabilities.

JPMorgan Chase Bank, N.A. generally uses interest rate contracts to manage the risk associated with changes in interest rates. Fixed-rate assets and liabilities appreciate or depreciate in market value as interest rates change. Similarly, interest income and expense increases or decreases as a result of variable-rate assets and liabilities resetting to current market rates, and as a result of the repayment and subsequent origination or issuance of fixed-rate assets and liabilities at current market rates. Gains and losses on the derivative instruments related to these assets and liabilities are expected to substantially offset this variability.

Foreign currency forward contracts are used to manage the foreign exchange risk associated with certain foreign currency–denominated (i.e., non-U.S. dollar) assets and liabilities and forecasted transactions, as well as JPMorgan Chase Bank, N.A.'s net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. As a result of fluctuations in foreign currencies, the U.S. dollar–equivalent values of the foreign currency–denominated assets and liabilities or the forecasted revenues or expenses increase or decrease. Gains or losses on the derivative instruments related to these foreign currency–denominated assets or liabilities, or forecasted transactions, are expected to substantially offset this variability.

Commodities contracts are used to manage the price risk of certain commodities inventories. Gains or losses on these derivative instruments are expected to substantially offset the depreciation or appreciation of the related inventory.

Credit derivatives are used to manage the counterparty credit risk associated with loans and lending-related commitments. Credit derivatives compensate the purchaser when the entity referenced in the contract experiences a credit event, such as bankruptcy or a failure to pay an obligation when due. Credit derivatives primarily consist of CDS. For a further discussion of credit derivatives, refer to the discussion in the Credit derivatives section on pages 47–49 of this Note.

For more information about risk management derivatives, refer to the risk management derivatives gains and losses table on page 47 of this Note, and the hedge accounting gains and losses tables on pages 44–47 of this Note.

Derivative counterparties and settlement types
JPMorgan Chase Bank, N.A. enters into OTC derivatives with third parties and JPMorgan Chase affiliates, which are negotiated and settled bilaterally with the derivative counterparty. JPMorgan Chase Bank, N.A. also enters into, as principal, certain exchange-traded derivatives ("ETD") such as futures and options, and "cleared" over-the-counter ("OTC-cleared") derivative contracts with CCPs. ETD contracts are generally standardized contracts traded on an exchange and cleared by the CCP, which is JPMorgan Chase Bank, N.A.'s counterparty from the inception of the transactions. OTC-cleared derivatives are traded on a bilateral basis and then novated to the CCP for clearing.

Derivative clearing services
JPMorgan Chase Bank, N.A. provides clearing services for clients in which JPMorgan Chase Bank, N.A. acts as a clearing member at certain derivative exchanges and clearing houses. JPMorgan Chase Bank, N.A. does not reflect the clients' derivative contracts in its Consolidated Financial Statements. For further information on JPMorgan Chase Bank, N.A.'s clearing services, refer to Note 25.

Accounting for derivatives

All free-standing derivatives that, JPMorgan Chase Bank, N.A. executes for its own account are required to be recorded on the Consolidated balance sheets at fair value.

As permitted under U.S. GAAP, JPMorgan Chase Bank, N.A. nets derivative assets and liabilities, and the related cash collateral receivables and payables, when a legally enforceable master netting agreement exists between JPMorgan Chase Bank, N.A. and the derivative counterparty. For further discussion of the offsetting of assets and liabilities, refer to Note 1. The accounting for changes in value of a derivative depends on whether or not the transaction has been designated and qualifies for hedge accounting. Derivatives that are not designated as hedges are reported and measured at fair value through earnings. The tabular disclosures on pages 40–47 of this Note provide additional information on the amount of, and reporting for, derivative assets, liabilities, gains and losses. For further discussion of derivatives embedded in structured notes, refer to Notes 3 and 4.

Derivatives designated as hedges

JPMorgan Chase Bank, N.A. adopted new hedge accounting guidance in the first quarter of 2018, which required prospective amendments to the disclosures, as reflected in this Note. For additional information on the impact upon adoption of the new guidance, refer to Notes 1 and 21.

JPMorgan Chase Bank, N.A. applies hedge accounting to certain derivatives executed for risk management purposes – generally interest rate, foreign exchange and commodity derivatives. However, JPMorgan Chase Bank, N.A. does not seek to apply hedge accounting to all of the derivatives involved in its risk management activities. For example, JPMorgan Chase Bank, N.A. does not apply hedge accounting to purchased CDS used to manage the credit risk of loans and lending-related commitments, because of the difficulties in qualifying such contracts as hedges. For the same reason, JPMorgan Chase Bank, N.A. does not apply hedge accounting to certain interest rate and foreign exchange derivatives used for risk management purposes.

To qualify for hedge accounting, a derivative must be highly effective at reducing the risk associated with the exposure being hedged. In addition, for a derivative to be designated as a hedge, the risk management objective and strategy must be documented. Hedge documentation must identify the derivative hedging instrument, the asset or liability or forecasted transaction and type of risk to be hedged, and how the effectiveness of the derivative is assessed prospectively and retrospectively. To assess effectiveness, JPMorgan Chase Bank, N.A. uses statistical methods such as regression analysis, nonstatistical methods such as dollar-value comparisons of the change in the fair value of the derivative to the change in the fair value or cash flows of the hedged item, and qualitative comparisons of critical terms and the evaluation of any changes in those terms. The extent to which a derivative has been, and is expected to continue to be, highly effective at offsetting changes in the fair value or cash flows of the hedged item must be assessed and documented at least quarterly. If it is determined that a derivative is not highly effective at hedging the designated exposure, hedge accounting is discontinued.

There are three types of hedge accounting designations: fair value hedges, cash flow hedges and net investment hedges. JPMorgan Chase Bank, N.A. uses fair value hedges primarily to hedge fixed-rate long-term debt, AFS securities and certain commodities inventories. For qualifying fair value hedges, the changes in the fair value of the derivative, and in the value of the hedged item for the risk being hedged, are recognized in earnings. Certain amounts excluded from the assessment of effectiveness are recorded in OCI and recognized in earnings over the life of the derivative. If the hedge relationship is terminated, then the adjustment to the hedged item continues to be reported as part of the basis of the hedged item, and for benchmark interest rate hedges, is amortized to earnings as a yield adjustment. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily net interest income and principal transactions revenue.

JPMorgan Chase Bank, N.A. uses cash flow hedges primarily to hedge the exposure to variability in forecasted cash flows from floating-rate assets and liabilities and foreign currency–denominated revenue and expense. For qualifying cash flow hedges, changes in the fair value of the derivative are recorded in OCI and recognized in earnings as the hedged item affects earnings. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily interest income, interest expense, noninterest revenue and compensation expense. If the hedge relationship is terminated, then the change in value of the derivative recorded in accumulated other comprehensive income/(loss) ("AOCI") is recognized in earnings when the cash flows that were hedged affect earnings. For hedge relationships that are discontinued because a forecasted transaction is not expected to occur according to the original hedge forecast, any related derivative values recorded in AOCI are immediately recognized in earnings.

JPMorgan Chase Bank, N.A. uses net investment hedges to protect the value of JPMorgan Chase Bank, N.A.'s net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. For qualifying net investment hedges, changes in the fair value of the derivatives due to changes in spot foreign exchange rates are recorded in OCI as translation adjustments. Amounts excluded from the assessment of effectiveness are recorded directly in earnings.

The following table outlines JPMorgan Chase Bank, N.A.'s primary uses of derivatives and the related hedge accounting designation or disclosure category.

Type of Derivative	Use of Derivative	Designation and disclosure	Page reference
Manage specifically identified risk exposures in qualifying hedge accounting relationships:			
• Interest rate	Hedge fixed rate assets and liabilities	Fair value hedge	44
• Interest rate	Hedge floating-rate assets and liabilities	Cash flow hedge	46
• Foreign exchange	Hedge foreign currency-denominated assets and liabilities	Fair value hedge	44
• Foreign exchange	Hedge foreign currency-denominated forecasted revenue and expense	Cash flow hedge	46
• Foreign exchange	Hedge the value of JPMorgan Chase Bank, N.A.'s investments in non-U.S. dollar functional currency entities	Net investment hedge	47
• Commodity	Hedge commodity inventory	Fair value hedge	44
Manage specifically identified risk exposures not designated in qualifying hedge accounting relationships:			
• Interest rate	Manage the risk of the mortgage pipeline, warehouse loans and MSRs	Specified risk management	47
• Credit	Manage the credit risk of wholesale lending exposures	Specified risk management	47
• Interest rate and foreign exchange	Manage the risk of certain other specified assets and liabilities	Specified risk management	47
Market-making derivatives and other activities:			
• Various	Market-making and related risk management	Market-making and other	47
• Various	Other derivatives	Market-making and other	47

Notional amount of derivative contracts

The following table summarizes the notional amount of derivative contracts outstanding as of December 31, 2018 and 2017.

	Notional amounts[b]	
December 31, (in billions)	**2018**	2017
Interest rate contracts		
Swaps	**$ 22,104**	$ 21,371
Futures and forwards	**3,180**	4,519
Written options	**4,001**	3,582
Purchased options	**4,334**	4,003
Total interest rate contracts	**33,619**	33,475
Credit derivatives[a]	**1,473**	1,498
Foreign exchange contracts		
Cross-currency swaps	**3,581**	3,978
Spot, futures and forwards	**5,898**	5,962
Written options	**836**	788
Purchased options	**831**	777
Total foreign exchange contracts	**11,146**	11,505
Equity contracts		
Swaps	**487**	497
Futures and forwards	**83**	75
Written options	**526**	543
Purchased options	**539**	508
Total equity contracts	**1,635**	1,623
Commodity contracts		
Swaps	**368**	531
Spot, futures and forwards	**158**	173
Written options	**143**	113
Purchased options	**126**	106
Total commodity contracts	**795**	923
Total derivative notional amounts	**$ 48,668**	$ 49,024

(a) For more information on volumes and types of credit derivative contracts, refer to the Credit derivatives discussion on pages 47–49.
(b) Represents the sum of gross long and gross short notional derivative contracts with third-parties and JPMorgan Chase affiliates. For additional information on related party derivatives, refer to Note 20.

While the notional amounts disclosed above give an indication of the volume of JPMorgan Chase Bank, N.A.'s derivatives activity, the notional amounts significantly exceed, in JPMorgan Chase Bank, N.A.'s view, the possible losses that could arise from such transactions. For most derivative contracts, the notional amount is not exchanged; it is used simply as a reference to calculate payments.

Impact of derivatives on the Consolidated balance sheets

The tables below include derivative receivables and payables with affiliates on a net basis. Refer to Note 20 for information regarding our derivative activities with affiliates.

The following table summarizes information on derivative receivables and payables (before and after netting adjustments) that are reflected on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets as of December 31, 2018 and 2017, by accounting designation (e.g., whether the derivatives were designated in qualifying hedge accounting relationships or not) and contract type.

Free-standing derivative receivables and payables[a]

	Gross derivative receivables				Gross derivative payables			
December 31, 2018 (in millions)	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables[b]	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables[b]
Trading assets and liabilities								
Interest rate	**$ 277,357**	**$ 686**	**$ 278,043**	**$ 22,885**	**$ 251,175**	**$ –**	**$ 251,175**	**$ 6,959**
Credit	**18,871**	**–**	**18,871**	**359**	**19,017**	**–**	**19,017**	**1,386**
Foreign exchange	**168,844**	**504**	**169,348**	**13,426**	**165,781**	**372**	**166,153**	**12,726**
Equity	**67,088**	**–**	**67,088**	**10,261**	**67,874**	**–**	**67,874**	**10,182**
Commodity	**28,366**	**247**	**28,613**	**6,607**	**29,717**	**121**	**29,838**	**8,063**
Total fair value of trading assets and liabilities	**$ 560,526**	**$ 1,437**	**$ 561,963**	**$ 53,538**	**$ 533,564**	**$ 493**	**$ 534,057**	**$ 39,316**

	Gross derivative receivables				Gross derivative payables			
December 31, 2017 (in millions)	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables[b]	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables[b]
Trading assets and liabilities								
Interest rate	$ 319,178	$ 704	$ 319,882	$ 24,442	$ 289,746	$ 4	$ 289,750	$ 7,014
Credit	22,195	–	22,195	714	22,268	–	22,268	1,085
Foreign exchange	160,914	359	161,273	16,058	155,761	962	156,723	12,522
Equity	57,507	–	57,507	7,103	63,186	–	63,186	9,251
Commodity	40,085	19	40,104	6,308	40,433	403	40,836	6,321
Total fair value of trading assets and liabilities	$ 599,879	$ 1,082	$ 600,961	$ 54,625	$ 571,394	$ 1,369	$ 572,763	$ 36,193

(a) Balances exclude structured notes for which the fair value option has been elected. Refer to Note 4 for further information.
(b) As permitted under U.S. GAAP, JPMorgan Chase Bank, N.A. has elected to net derivative receivables and derivative payables and the related cash collateral receivables and payables when a legally enforceable master netting agreement exists.

Derivatives netting

The following tables present, as of December 31, 2018 and 2017, gross and net derivative receivables and payables by contract and settlement type. Derivative receivables and payables, as well as the related cash collateral from the same counterparty, have been netted on the Consolidated balance sheets where JPMorgan Chase Bank, N.A. has obtained an appropriate legal opinion with respect to the master netting agreement. Where such a legal opinion has not been either sought or obtained, amounts are not eligible for netting on the Consolidated balance sheets, and those derivative receivables and payables are shown separately in the tables below.

In addition to the cash collateral received and transferred that is presented on a net basis with derivative receivables and payables, JPMorgan Chase Bank, N.A. receives and transfers additional collateral (financial instruments and cash). These amounts mitigate counterparty credit risk associated with JPMorgan Chase Bank, N.A.'s derivative instruments, but are not eligible for net presentation:

- collateral that consists of non-cash financial instruments (generally U.S. government and agency securities and other Group of Seven Nations ("G7") government securities) and cash collateral held at third party custodians, which are shown separately as "Collateral not nettable on the Consolidated balance sheets" in the tables below, up to the fair value exposure amount.
- the amount of collateral held or transferred that exceeds the fair value exposure at the individual counterparty level, as of the date presented, which is excluded from the tables below; and
- collateral held or transferred that relates to derivative receivables or payables where an appropriate legal opinion has not been either sought or obtained with respect to the master netting agreement, which is excluded from the tables below.

	2018			2017		
December 31, (in millions)	Gross derivative receivables	Amounts netted on the Consolidated balance sheets	Net derivative receivables	Gross derivative receivables	Amounts netted on the Consolidated balance sheets	Net derivative receivables
U.S. GAAP nettable derivative receivables						
Interest rate contracts:						
OTC	**$ 268,586**	**$ (249,954)**	**$ 18,632**	$ 309,464	$ (289,039)	$ 20,425
OTC-cleared	**5,574**	**(5,069)**	**505**	6,531	(6,318)	213
Exchange-traded[(a)]	**322**	**(136)**	**186**	185	(84)	101
Total interest rate contracts	**274,482**	**(255,159)**	**19,323**	316,180	(295,441)	20,739
Credit contracts:						
OTC	**11,448**	**(11,290)**	**158**	14,393	(14,311)	82
OTC-cleared	**7,267**	**(7,222)**	**45**	7,225	(7,170)	55
Total credit contracts	**18,715**	**(18,512)**	**203**	21,618	(21,481)	137
Foreign exchange contracts:						
OTC	**165,544**	**(155,675)**	**9,869**	156,415	(143,554)	12,861
OTC-cleared	**235**	**(226)**	**9**	1,696	(1,654)	42
Exchange-traded[(a)]	**32**	**(21)**	**11**	141	(7)	134
Total foreign exchange contracts	**165,811**	**(155,922)**	**9,889**	158,252	(145,215)	13,037
Equity contracts:						
OTC	**49,162**	**(46,506)**	**2,656**	43,606	(41,322)	2,284
Exchange-traded[(a)]	**13,695**	**(10,321)**	**3,374**	10,072	(9,081)	991
Total equity contracts	**62,857**	**(56,827)**	**6,030**	53,678	(50,403)	3,275
Commodity contracts:						
OTC	**15,794**	**(13,787)**	**2,007**	27,275	(25,096)	2,179
Exchange-traded[(a)]	**8,815**	**(8,218)**	**597**	8,853	(8,700)	153
Total commodity contracts	**24,609**	**(22,005)**	**2,604**	36,128	(33,796)	2,332
Derivative receivables with appropriate legal opinion	**$ 546,474**	**$ (508,425)**	**$ 38,049** [(b)]	$ 585,856	$ (546,336)	$ 39,520 [(b)]
Derivative receivables where an appropriate legal opinion has not been either sought or obtained	**15,489**		**15,489**	15,105		15,105
Total derivative receivables recognized on the Consolidated balance sheets	**$ 561,963**		**$ 53,538**	$ 600,961		$ 54,625
Collateral not nettable on the Consolidated balance sheets[(c)(d)]			**(12,821)**			(13,234)
Net amounts			**$ 40,717**			$ 41,391

December 31, (in millions)	2018 Gross derivative payables	2018 Amounts netted on the Consolidated balance sheets	2018 Net derivative payables	2017 Gross derivative payables	2017 Amounts netted on the Consolidated balance sheets	2017 Net derivative payables
U.S. GAAP nettable derivative payables						
Interest rate contracts:						
OTC	**$ 243,338**	**$ (238,374)**	**$ 4,964**	$ 282,317	$ (276,723)	$ 5,594
OTC-cleared	**6,375**	**(5,706)**	**669**	6,005	(5,929)	76
Exchange-traded[(a)]	**210**	**(135)**	**75**	127	(84)	43
Total interest rate contracts	**249,923**	**(244,215)**	**5,708**	288,449	(282,736)	5,713
Credit contracts:						
OTC	**12,156**	**(10,918)**	**1,238**	15,209	(14,398)	811
OTC-cleared	**6,716**	**(6,714)**	**2**	6,801	(6,784)	17
Total credit contracts	**18,872**	**(17,632)**	**1,240**	22,010	(21,182)	828
Foreign exchange contracts:						
OTC	**161,889**	**(153,156)**	**8,733**	151,968	(142,641)	9,327
OTC-cleared	**274**	**(268)**	**6**	1,555	(1,553)	2
Exchange-traded[(a)]	**17**	**(3)**	**14**	98	(7)	91
Total foreign exchange contracts	**162,180**	**(153,427)**	**8,753**	153,621	(144,201)	9,420
Equity contracts:						
OTC	**51,253**	**(47,341)**	**3,912**	49,146	(44,861)	4,285
Exchange-traded[(a)]	**11,147**	**(10,351)**	**796**	9,560	(9,074)	486
Total equity contracts	**62,400**	**(57,692)**	**4,708**	58,706	(53,935)	4,771
Commodity contracts:						
OTC	**17,545**	**(13,567)**	**3,978**	27,837	(25,807)	2,030
Exchange-traded[(a)]	**8,248**	**(8,208)**	**40**	8,855	(8,709)	146
Total commodity contracts	**25,793**	**(21,775)**	**4,018**	36,692	(34,516)	2,176
Derivative payables with appropriate legal opinion	**$ 519,168**	**$ (494,741)**	**$ 24,427** [(d)]	$ 559,478	$ (536,570)	$ 22,908 [(d)]
Derivative payables where an appropriate legal opinion has not been either sought or obtained	**14,889**		**14,889**	13,285		13,285
Total derivative payables recognized on the Consolidated balance sheets	**$ 534,057**		**$ 39,316**	$ 572,763		$ 36,193
Collateral not nettable on the Consolidated balance sheets[(b)(c)]			**(4,431)**			(4,180)
Net amounts			**$ 34,885**			$ 32,013

(a) Exchange-traded derivative balances that relate to futures contracts are settled daily.
(b) Represents liquid security collateral as well as cash collateral held at third-party custodians related to derivative instruments where an appropriate legal opinion has been obtained. For some counterparties, the collateral amounts of financial instruments may exceed the derivative receivables and derivative payables balances. Where this is the case, the total amount reported is limited to the net derivative receivables and net derivative payables balances with that counterparty.
(c) Derivative collateral relates only to OTC and OTC-cleared derivative instruments.
(d) Net derivatives receivable included cash collateral netted of $56.8 billion and $55.9 billion at December 31, 2018 and 2017, respectively. Net derivatives payable included cash collateral netted of $43.1 billion and $46.1 billion at December 31, 2018 and 2017, respectively. Derivative cash collateral relates to OTC and OTC-cleared derivative instruments.

Liquidity risk and credit-related contingent features

In addition to the specific market risks introduced by each derivative contract type, derivatives expose JPMorgan Chase Bank, N.A. to credit risk — the risk that derivative counterparties may fail to meet their payment obligations under the derivative contracts and the collateral, if any, held by JPMorgan Chase Bank, N.A. proves to be of insufficient value to cover the payment obligation. It is the policy of JPMorgan Chase Bank, N.A. to actively pursue, where possible, the use of legally enforceable master netting arrangements and collateral agreements to mitigate derivative counterparty credit risk. The amount of derivative receivables reported on the Consolidated balance sheets is the fair value of the derivative contracts after giving effect to legally enforceable master netting agreements and cash collateral held by JPMorgan Chase Bank, N.A.

While derivative receivables expose JPMorgan Chase Bank, N.A. to credit risk, derivative payables expose JPMorgan Chase Bank, N.A. to liquidity risk, as the derivative contracts typically require JPMorgan Chase Bank, N.A. to post cash or securities collateral with counterparties as the fair value of the contracts moves in the counterparties' favor or upon specified downgrades in JPMorgan Chase Bank, N.A.'s and its subsidiaries' respective credit ratings. Certain derivative contracts also provide for termination of the contract, generally upon a downgrade of either JPMorgan Chase Bank, N.A. or the counterparty, at the fair value of the derivative contracts. The following table shows the aggregate fair value of net derivative payables related to OTC and OTC-cleared derivatives that contain contingent collateral or termination features that may be triggered upon a ratings downgrade, and the associated collateral JPMorgan Chase Bank, N.A. has posted in the normal course of business, at December 31, 2018 and 2017.

OTC and OTC-cleared derivative payables containing downgrade triggers

December 31, (in millions)	**2018**	2017
Aggregate fair value of net derivative payables	**$ 9,198**	$ 11,669
Collateral posted	**8,881**	9,947

The following table shows the impact of a single-notch and two-notch downgrade of the long-term issuer ratings of JPMorgan Chase Bank, N.A. and its subsidiaries at December 31, 2018 and 2017, related to OTC and OTC-cleared derivative contracts with contingent collateral or termination features that may be triggered upon a ratings downgrade. Derivatives contracts generally require additional collateral to be posted or terminations to be triggered when the predefined threshold rating is breached. A downgrade by a single rating agency that does not result in a rating lower than a preexisting corresponding rating provided by another major rating agency will generally not result in additional collateral (except in certain instances in which additional initial margin may be required upon a ratings downgrade), nor in termination payments requirements. The liquidity impact in the table is calculated based upon a downgrade below the lowest current rating of the rating agencies referred to in the derivative contract.

Liquidity impact of downgrade triggers on OTC and OTC-cleared derivatives

	2018		2017	
December 31, (in millions)	Single-notch downgrade	Two-notch downgrade	Single-notch downgrade	Two-notch downgrade
Amount of additional collateral to be posted upon downgrade[a]	**$ 76**	**$ 940**	$ 79	$ 1,982
Amount required to settle contracts with termination triggers upon downgrade[b]	**172**	**764**	320	649

(a) Includes the additional collateral to be posted for initial margin.
(b) Amounts represent fair values of derivative payables, and do not reflect collateral posted.

Derivatives executed in contemplation of a sale of the underlying financial asset

In certain instances JPMorgan Chase Bank, N.A. enters into transactions in which it transfers financial assets but maintains the economic exposure to the transferred assets by entering into a derivative with the same counterparty in contemplation of the initial transfer. JPMorgan Chase Bank, N.A. generally accounts for such transfers as collateralized financing transactions as described in Note 12, but in limited circumstances they may qualify to be accounted for as a sale and a derivative under U.S. GAAP. The amount of such transfers accounted for as a sale where the associated derivative was outstanding at December 31, 2018 was not material, and there were no such transfers at December 31, 2017.

Impact of derivatives on the Consolidated statements of income

The following tables provide information related to gains and losses recorded on derivatives based on their hedge accounting designation or purpose. Refer to Note 20 for information regarding our derivative activities with affiliates.

Fair value hedge gains and losses

The following tables present derivative instruments, by contract type, used in fair value hedge accounting relationships, as well as pre-tax gains/(losses) recorded on such derivatives and the related hedged items for the years ended December 31, 2018 and 2017, respectively. JPMorgan Chase Bank, N.A. includes gains/(losses) on the hedging derivative in the same line item in the Consolidated statements of income as the related hedged item.

	Gains/(losses) recorded in income			Income statement impact of excluded components[f]		OCI impact
Year ended December 31, 2018 (in millions)	Derivatives	Hedged items	Income statement impact	Amortization approach	Changes in fair value	Derivatives - Gains/(losses) recorded in OCI[g]
Contract type						
Interest rate[a][b]	**$ 516**	**$ (624)**	**$ (108)**	**$ –**	**$ (105)**	**$ –**
Foreign exchange[c]	**1,937**	**(1,461)**	**476**	**(35)**	**476**	**1**
Commodity[d]	**(21)**	**11**	**(10)**	**–**	**(10)**	**–**
Total	**$ 2,432**	**$ (2,074)**	**$ 358**	**$ (35)**	**$ 361**	**$ 1**

	Gains/(losses) recorded in income			Income statement impact due to:	
Year ended December 31, 2017 (in millions)	Derivatives	Hedged items	Income statement impact	Hedge ineffectiveness[e]	Excluded components[f]
Contract type					
Interest rate[a][b]	$ 52	$ (253)	$ (201)	$ 2	$ (203)
Foreign exchange[c]	(3,159)	3,523	364	–	364
Commodity[d]	(85)	96	11	–	11
Total	$ (3,192)	$ 3,366	$ 174	$ 2	$ 172

(a) Primarily consists of hedges of the benchmark (e.g., London Interbank Offered Rate ("LIBOR")) interest rate risk of fixed-rate AFS securities. Gains and losses were recorded in net interest income.
(b) Excludes the amortization expense associated with the inception hedge accounting adjustment applied to the hedged item. This expense is recorded in net interest income and substantially offsets the income statement impact of the excluded components. Also excludes the accrual of interest on interest rate swaps and the related hedged items.
(c) Primarily consists of hedges of the foreign currency risk of AFS securities for changes in spot foreign currency rates. Gains and losses related to the derivatives and the hedged items due to changes in foreign currency rates and the income statement impact of excluded components were recorded primarily in principal transactions revenue and net interest income.
(d) Consists of overall fair value hedges of physical commodities inventories that are generally carried at the lower of cost or net realizable value (net realizable value approximates fair value). Gains and losses were recorded in principal transactions revenue.
(e) Hedge ineffectiveness is the amount by which the gain or loss on the designated derivative instrument does not exactly offset the gain or loss on the hedged item attributable to the hedged risk.
(f) The assessment of hedge effectiveness excludes certain components of the changes in fair values of the derivatives and hedged items such as forward points on foreign exchange forward contracts, time values and cross-currency basis spreads. Under the new hedge accounting guidance, the initial amount of the excluded components may be amortized into income over the life of the derivative, or changes in fair value may be recognized in current period earnings.
(g) Represents the change in value of amounts excluded from the assessment of effectiveness under the amortization approach, predominantly cross-currency basis spreads. The amount excluded at inception of the hedge is recognized in earnings over the life of the derivative.

As of December 31, 2018, the following amounts were recorded on the Consolidated balance sheets related to certain cumulative fair value hedge basis adjustments that are expected to reverse through the income statement in future periods as an adjustment to yield.

December 31, 2018 (in millions)	Carrying amount of the hedged items[(a)(b)]	Cumulative amount of fair value hedging adjustments included in the carrying amount of hedged items:		
		Active hedging relationships	Discontinued hedging relationships[(d)]	Total
Assets				
Investment securities - AFS	$ 55,207 [(c)]	$ (1,105)	$ 381	$ (724)
Liabilities				
Long-term debt	$ 2,021	$ 160	$ (12)	$ 148

(a) Excludes physical commodities with a carrying value of $500 million to which JPMorgan Chase Bank, N.A. applies fair value hedge accounting. As a result of the application of hedge accounting, these inventories are carried at fair value, thus recognizing unrealized gains and losses in current periods. Given JPMorgan Chase Bank, N.A. exits these positions at fair value, there is no incremental impact to net income in future periods.

(b) Excludes hedged items where only foreign currency risk is the designated hedged risk, as basis adjustments related to foreign currency hedges will not reverse through the income statement in future periods. The carrying amount excluded for available-for-sale securities is $14.6 billion.

(c) Carrying amount represents the amortized cost.

(d) Represents hedged items no longer designated in qualifying fair value hedging relationships for which an associated basis adjustment exists at the balance sheet date.

Cash flow hedge gains and losses

The following tables present derivative instruments, by contract type, used in cash flow hedge accounting relationships, and the pre-tax gains/(losses) recorded on such derivatives, for the years ended December 31, 2018 and 2017, respectively. JPMorgan Chase Bank, N.A. includes the gain/(loss) on the hedging derivative in the same line item in the Consolidated statements of income as the change in cash flows on the related hedged item.

	Derivatives gains/(losses) recorded in income and other comprehensive income/(loss)		
Year ended December 31, 2018 (in millions)	Amounts reclassified from AOCI to income	Amounts recorded in OCI	Total change in OCI for period
Contract type			
Interest rate[(a)]	**$ 43**	**$ (42)**	**$ (85)**
Foreign exchange[(b)]	**(26)**	**(201)**	**(175)**
Total	**$ 17**	**$ (243)**	**$ (260)**

	Derivatives gains/(losses) recorded in income and other comprehensive income/(loss)		
Year ended December 31, 2017 (in millions)	Amounts reclassified from AOCI to income	Amounts recorded in OCI[(c)]	Total change in OCI for period
Contract type			
Interest rate[(a)]	$ (17)	$ 12	$ 29
Foreign exchange[(b)]	(117)	135	252
Total	$ (134)	$ 147	$ 281

(a) Primarily consists of benchmark interest rate hedges of LIBOR-indexed floating-rate assets and floating-rate liabilities. Gains and losses were recorded in net interest income.
(b) Primarily consists of hedges of the foreign currency risk of non-U.S. dollar-denominated revenue and expense. The income statement classification of gains and losses follows the hedged item – primarily noninterest revenue and compensation expense.
(c) Represents the effective portion of changes in value of the related hedging derivative. Hedge ineffectiveness is the amount by which the cumulative gain or loss on the designated derivative instrument exceeds the present value of the cumulative expected change in cash flows on the hedged item attributable to the hedged risk. JPMorgan Chase Bank, N.A. did not recognize any ineffectiveness on cash flow hedges during 2017.

JPMorgan Chase Bank, N.A. did not experience any forecasted transactions that failed to occur for the years ended 2018 and 2017.

Over the next 12 months, JPMorgan Chase Bank, N.A. expects that approximately $(74) million (after-tax) of net losses recorded in AOCI at December 31, 2018, related to cash flow hedges will be recognized in income. For cash flow hedges that have been terminated, the maximum length of time over which the derivative results recorded in AOCI will be recognized in earnings is approximately six years, corresponding to the timing of the originally hedged forecasted cash flows. For open cash flow hedges, the maximum length of time over which forecasted transactions are hedged is approximately six years. JPMorgan Chase Bank, N.A.'s longer-dated forecasted transactions relate to core lending and borrowing activities.

Net investment hedge gains and losses

The following table presents hedging instruments, by contract type, that were used in net investment hedge accounting relationships, and the pre-tax gains/(losses) recorded on such instruments for the years ended December 31, 2018 and 2017.

Year ended December 31, (in millions)	**2018** Amounts recorded in income[(a)(b)]	**2018** Amounts recorded in OCI	2017 Amounts recorded in income[(a)(b)]	2017 Amounts recorded in OCI[(c)]
Foreign exchange derivatives	**$ (19)**	**$ 941**	$ (172)	$ (847)

(a) Certain components of hedging derivatives are permitted to be excluded from the assessment of hedge effectiveness, such as forward points on foreign exchange forward contracts. JPMorgan Chase Bank, N.A. elects to record changes in fair value of these amounts directly in other income.
(b) Excludes amounts reclassified from AOCI to income on the sale or liquidation of hedged entities. For additional information, refer to Note 21.
(c) Represents the effective portion of changes in value of the related hedging derivative. JPMorgan Chase Bank, N.A. did not recognize any ineffectiveness on net investment hedges directly in income during 2017.

Gains and losses on derivatives used for specified risk management purposes

The following table presents pre-tax gains/(losses) recorded on a limited number of derivatives, not designated in hedge accounting relationships, that are used to manage risks associated with certain specified assets and liabilities, including certain risks arising from the mortgage pipeline, warehouse loans, MSRs, wholesale lending exposures, and foreign currency denominated assets and liabilities.

Year ended December 31, (in millions)	Derivatives gains/(losses) recorded in income **2018**	2017
Contract type		
Interest rate[(a)]	**$ 79**	$ 331
Credit[(b)]	**(21)**	(74)
Foreign exchange[(c)]	**152**	(98)
Total	**$ 210**	$ 159

(a) Primarily represents interest rate derivatives used to hedge the interest rate risk inherent in the mortgage pipeline, warehouse loans and MSRs, as well as written commitments to originate warehouse loans. Gains and losses were recorded predominantly in mortgage fees and related income.
(b) Relates to credit derivatives used to mitigate credit risk associated with lending exposures in JPMorgan Chase Bank, N.A.'s wholesale businesses. These derivatives do not include credit derivatives used to mitigate counterparty credit risk arising from derivative receivables, which is included in gains and losses on derivatives related to market-making activities and other derivatives. Gains and losses were recorded in principal transactions revenue.
(c) Primarily relates to derivatives used to mitigate foreign exchange risk of specified foreign currency-denominated assets and liabilities. Gains and losses were recorded in principal transactions revenue.

Gains and losses on derivatives related to market-making activities and other derivatives

JPMorgan Chase Bank, N.A. makes markets in derivatives in order to meet the needs of customers and uses derivatives to manage certain risks associated with net open risk positions from its market-making activities, including the counterparty credit risk arising from derivative receivables. All derivatives not included in the hedge accounting or specified risk management categories above are included in this category. Gains and losses on these derivatives are primarily recorded in principal transactions revenue. Refer to Note 7 for information on principal transactions revenue.

Credit derivatives

Credit derivatives are financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity) and which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Credit derivatives expose the protection purchaser to the creditworthiness of the protection seller, as the protection seller is required to make payments under the contract when the reference entity experiences a credit event, such as a bankruptcy, a failure to pay its obligation or a restructuring. The seller of credit protection receives a premium for providing protection but has the risk that the underlying instrument referenced in the contract will be subject to a credit event.

JPMorgan Chase Bank, N.A. is both a purchaser and seller of protection in the credit derivatives market and uses these derivatives for two primary purposes. First, in its capacity as a market-maker, JPMorgan Chase Bank, N.A. actively manages a portfolio of credit derivatives by purchasing and selling credit protection, predominantly on corporate debt obligations, to meet the needs of customers. Second, as an end-user, JPMorgan Chase Bank, N.A. uses credit derivatives to manage credit risk associated with lending exposures (loans and unfunded commitments) and derivatives counterparty exposures in JPMorgan Chase Bank, N.A.'s wholesale businesses, and to manage the credit risk arising from certain financial instruments in JPMorgan Chase Bank, N.A.'s market-making businesses. Following is a summary of various types of credit derivatives.

Credit default swaps

Credit derivatives may reference the credit of either a single reference entity ("single-name") or a broad-based index. JPMorgan Chase Bank, N.A. purchases and sells protection on both single- name and index-reference obligations. Single-name CDS and index CDS contracts are either OTC or OTC-cleared derivative contracts. Single-name CDS are used to manage the default risk of a single reference entity, while index CDS contracts are used to manage the credit risk associated with the broader credit markets or credit market segments. Like the S&P 500 and other market indices, a CDS index consists of a portfolio of CDS across many reference entities. New series of CDS indices are periodically established with a new underlying portfolio of reference entities to reflect changes in the credit markets. If one of the reference entities in the index experiences a credit event, then the reference entity that defaulted is removed from the index. CDS can also be referenced against specific portfolios of reference names or against customized exposure levels based on specific client demands: for example, to provide protection against the first $1 million of realized credit losses in a $10 million portfolio of exposure. Such structures are commonly known as tranche CDS.

For both single-name CDS contracts and index CDS contracts, upon the occurrence of a credit event, under the terms of a CDS contract neither party to the CDS contract has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value of the reference obligation at settlement of the credit derivative contract, also known as the recovery value. The protection purchaser does not need to hold the debt instrument of the underlying reference entity in order to receive amounts due under the CDS contract when a credit event occurs.

Credit-related notes
A credit-related note is a funded credit derivative where the issuer of the credit-related note purchases from the note investor credit protection on a reference entity or an index. Under the contract, the investor pays the issuer the par value of the note at the inception of the transaction, and in return, the issuer pays periodic payments to the investor, based on the credit risk of the referenced entity. The issuer also repays the investor the par value of the note at maturity unless the reference entity (or one of the entities that makes up a reference index) experiences a specified credit event. If a credit event occurs, the issuer is not obligated to repay the par value of the note, but rather, the issuer pays the investor the difference between the par value of the note and the fair value of the defaulted reference obligation at the time of settlement. Neither party to the credit-related note has recourse to the defaulting reference entity.

The following tables present a summary of the notional amounts of credit derivatives and credit-related notes JPMorgan Chase Bank, N.A. sold and purchased as of December 31, 2018 and 2017. Upon a credit event, JPMorgan Chase Bank, N.A. as a seller of protection would typically pay out only a percentage of the full notional amount of net protection sold, as the amount actually required to be paid on the contracts takes into account the recovery value of the reference obligation at the time of settlement. JPMorgan Chase Bank, N.A. manages the credit risk on contracts to sell protection by purchasing protection with identical or similar underlying reference entities. Other purchased protection referenced in the following tables includes credit derivatives bought on related, but not identical, reference positions (including indices, portfolio coverage and other reference points) as well as protection purchased through credit-related notes.

JPMorgan Chase Bank, N.A. does not use notional amounts of credit derivatives as the primary measure of risk management for such derivatives, because the notional amount does not take into account the probability of the occurrence of a credit event, the recovery value of the reference obligation, or related cash instruments and economic hedges, each of which reduces, in JPMorgan Chase Bank, N.A.'s view, the risks associated with such derivatives.

Total credit derivatives and credit-related notes

	Maximum payout/Notional amount			
December 31, 2018 (in millions)	Protection sold	Protection purchased with identical underlyings[(b)]	Net protection (sold)/ purchased[(c)]	Other protection purchased[(d)]
Credit derivatives				
Credit default swaps	**$ (680,487)**	**$ 689,761**	**$ 9,274**	**$ 3,712**
Other credit derivatives[(a)]	**(44,110)**	**46,087**	**1,977**	**8,488**
Total credit derivatives	**(724,597)**	**735,848**	**11,251**	**12,200**
Credit-related notes	**–**	**–**	**–**	**8,338**
Total	**$ (724,597)**	**$ 735,848**	**$ 11,251**	**$ 20,538**

	Maximum payout/Notional amount			
December 31, 2017 (in millions)	Protection sold	Protection purchased with identical underlyings[(b)]	Net protection (sold)/ purchased[(c)]	Other protection purchased[(d)]
Credit derivatives				
Credit default swaps	$ (676,017)	$ 686,171	$ 10,154	$ 4,948
Other credit derivatives[(a)]	(59,001)	60,595	1,594	11,747
Total credit derivatives	(735,018)	746,766	11,748	16,695
Credit-related notes	(18)	–	(18)	7,906
Total	$ (735,036)	$ 746,766	$ 11,730	$ 24,601

(a) Other credit derivatives largely consists of credit swap options.
(b) Represents the total notional amount of protection purchased where the underlying reference instrument is identical to the reference instrument on protection sold; the notional amount of protection purchased for each individual identical underlying reference instrument may be greater or lower than the notional amount of protection sold.
(c) Does not take into account the fair value of the reference obligation at the time of settlement, which would generally reduce the amount the seller of protection pays to the buyer of protection in determining settlement value.
(d) Represents protection purchased by JPMorgan Chase Bank, N.A. on referenced instruments (single-name, portfolio or index) where JPMorgan Chase Bank, N.A. has not sold any protection on the identical reference instrument.

The following tables summarize the notional amounts by the ratings, maturity profile, and total fair value, of credit derivatives and credit-related notes as of December 31, 2018 and 2017, where JPMorgan Chase Bank, N.A. is the seller of protection. The maturity profile is based on the remaining contractual maturity of the credit derivative contracts. The ratings profile is based on the rating of the reference entity on which the credit derivative contract is based. The ratings and maturity profile of credit derivatives and credit-related notes where JPMorgan Chase Bank, N.A. is the purchaser of protection are comparable to the profile reflected below.

Protection sold – credit derivatives and credit-related notes ratings[(a)]/maturity profile

December 31, 2018 (in millions)	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables[(b)]	Fair value of payables[(b)]	Net fair value
Risk rating of reference entity							
Investment-grade	**$ (118,135)**	**$ (402,501)**	**$ (32,585)**	**$ (553,221)**	**$ 5,750**	**$ (2,390)**	**$ 3,360**
Noninvestment-grade	**(45,897)**	**(119,316)**	**(6,163)**	**(171,376)**	**4,718**	**(4,820)**	**(102)**
Total	**$ (164,032)**	**$ (521,817)**	**$ (38,748)**	**$ (724,597)**	**$ 10,468**	**$ (7,210)**	**$ 3,258**

December 31, 2017 (in millions)	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables[(b)]	Fair value of payables[(b)]	Net fair value
Risk rating of reference entity							
Investment-grade	$ (163,593)	$ (320,201)	$ (30,463)	$ (514,257)	$ 8,516	$ (858)	$ 7,658
Noninvestment-grade	(73,687)	(134,156)	(12,936)	(220,779)	7,391	(4,638)	2,753
Total	$ (237,280)	$ (454,357)	$ (43,399)	$ (735,036)	$ 15,907	$ (5,496)	$ 10,411

(a) The ratings scale is primarily based on external credit ratings defined by S&P and Moody's.
(b) Amounts are shown on a gross basis, before the benefit of legally enforceable master netting agreements and cash collateral received by JPMorgan Chase Bank, N.A.

Note 7 – Noninterest revenue and noninterest expense

JPMorgan Chase Bank, N.A. records noninterest revenue from certain contracts with customers under ASC 606, *Revenue from Contracts with Customers*, in investment banking fees, deposit-related fees, asset management, administration, and commissions, and components of card income. Contracts in the scope of ASC 606 are often terminable on demand and JPMorgan Chase Bank, N.A. has no remaining obligation to deliver future services. For arrangements with a fixed term, JPMorgan Chase Bank, N.A. may commit to deliver services in the future. Revenue associated with these remaining performance obligations typically depends on the occurrence of future events or underlying asset values, and is not recognized until the outcome of those events or values are known.

The adoption of the revenue recognition guidance on January 1, 2018, required gross presentation of certain costs previously offset against revenue, predominantly associated with certain distribution costs (previously offset against asset management, administration and commissions), with the remainder associated with certain underwriting costs (previously offset against investment banking fees). Adoption of the guidance did not result in any material changes in the timing of revenue recognition. JPMorgan Chase Bank, N.A. did not apply any practical expedients. For additional information, refer to Note 1.

Investment banking fees

This revenue category includes debt and equity underwriting and advisory fees. As an underwriter, JPMorgan Chase Bank, N.A. helps clients raise capital via public offering and private placement of various types of debt and equity instruments. Underwriting fees are primarily based on the issuance price and quantity of the underlying instruments, and are recognized as revenue typically upon execution of the client’s transaction. JPMorgan Chase Bank, N.A. also manages and syndicates loan arrangements. Credit arrangement and syndication fees, included within debt underwriting fees, are recorded as revenue after satisfying certain retention, timing and yield criteria.

JPMorgan Chase Bank, N.A. also provides advisory services, by assisting its clients with mergers and acquisitions, divestitures, restructuring and other complex transactions. Advisory fees are recognized as revenue typically upon execution of the client’s transaction.

Year ended December 31, (in millions)	**2018**	2017
Underwriting		
Equity	**$ 488**	$ 540
Debt	**1,993**	2,136
Total underwriting	**2,481**	2,676
Advisory	**887**	743
Total investment banking fees	**$ 3,368**	$ 3,419

Principal transactions

Principal transactions revenue is driven by many factors, including the bid-offer spread, which is the difference between the price at which JPMorgan Chase Bank, N.A. is willing to buy a financial or other instrument and the price at which JPMorgan Chase Bank, N.A. is willing to sell that instrument. It also consists of the realized (as a result of the sale of instruments, closing out or termination of transactions, or interim cash payments) and unrealized (as a result of changes in valuation) gains and losses on financial and other instruments (including those accounted for under the fair value option) primarily used in client-driven market-making activities and on private equity investments. In connection with its client-driven market-making activities, JPMorgan Chase Bank, N.A. transacts in debt and equity instruments, derivatives and commodities (including physical commodities inventories and financial instruments that reference commodities).

Principal transactions revenue also includes certain realized and unrealized gains and losses related to hedge accounting and specified risk-management activities, including: (a) certain derivatives designated in qualifying hedge accounting relationships (primarily fair value hedges of commodity and foreign exchange risk), (b) certain derivatives used for specific risk management purposes, primarily to mitigate credit risk and foreign exchange risk, and (c) other derivatives. For further information on the income statement classification of gains and losses from derivatives activities, refer to Note 6.

In the financial commodity markets, JPMorgan Chase Bank, N.A. transacts in OTC derivatives (e.g., swaps, forwards, options) and ETD that reference a wide range of underlying commodities. In the physical commodity markets, JPMorgan Chase Bank, N.A. primarily purchases and sells precious metals.

The following table presents all realized and unrealized gains and losses recorded in principal transactions revenue. This table excludes interest income and interest expense on trading assets and liabilities, which are an integral part of the overall performance of JPMorgan Chase Bank, N.A.'s client-driven market-making activities. Refer to Note 8 for further information on interest income and interest expense. Trading revenue is presented primarily by instrument type. JPMorgan Chase Bank, N.A.'s client-driven market-making businesses generally utilize a variety of instrument types in connection with their market-making and related risk-management activities; accordingly, the trading revenue presented in the table below is not representative of the total revenue of any individual line of business.

Year ended December 31, (in millions)	2018	2017
Trading revenue by instrument type		
Interest rate	**$ 2,779**	$ 3,200
Credit	**910**	653
Foreign exchange	**3,618**	2,829
Equity	**3,916**	2,784
Commodity	**600**	415
Total trading revenue	**11,823**	9,881
Private equity gains	**(9)**	2
Principal transactions	**$ 11,814**	$ 9,883

Lending- and deposit-related fees

Lending-related fees include fees earned from loan commitments, standby letters of credit, financial guarantees, and other loan-servicing activities. Deposit-related fees include fees earned in lieu of compensating balances, and fees earned from performing cash management activities and other deposit account services. Lending- and deposit-related fees in this revenue category are recognized over the period in which the related service is provided.

Year ended December 31, (in millions)	2018	2017
Lending-related fees	**$ 1,122**	$ 1,118
Deposit-related fees	**4,935**	4,823
Total lending- and deposit-related fees	**$ 6,057**	$ 5,941

Asset management, administration and commissions

This revenue category includes fees from investment management and related services, custody, brokerage services and other products. JPMorgan Chase Bank, N.A. manages assets on behalf of its clients, including investors in JPMorgan Chase Bank, N.A.-sponsored funds and owners of separately managed investment accounts. Management fees are typically based on the value of assets under management and are collected and recognized at the end of each period over which the management services are provided and the value of the managed assets is known. JPMorgan Chase Bank, N.A. also receives performance-based management fees, which are earned based on exceeding certain benchmarks or other performance targets and are accrued and recognized when the probability of reversal is remote, typically at the end of the related billing period. JPMorgan Chase Bank, N.A. has contractual arrangements with third parties to provide distribution and other services in connection with its asset management activities. Amounts paid to third-party service providers are recorded in professional and outside services expense.

Year ended December 31, (in millions)	2018	2017
Asset management fees		
Investment management fees[(a)]	**$ 2,049**	$ 2,039
All other asset management fees[(b)]	**53**	54
Total asset management fees	**2,102**	2,093
Total administration fees[(c)]	**2,177**	2,026
Commissions and other fees		
Brokerage commissions[(d)]	**1,284**	1,115
All other commissions and fees[(e)]	**5,466**	5,124
Total commissions and fees	**6,750**	6,239
Total asset management, administration and commissions	**$ 11,029**	$ 10,358

(a) Represents fees earned from managing assets on behalf of JPMorgan Chase Bank, N.A.'s clients, including investors in JPMorgan Chase Bank, N.A.-sponsored funds and owners of separately managed investment accounts.
(b) JPMorgan Chase Bank, N.A. receives other asset management fees for services that are ancillary to investment management services, including commissions earned on sales or distribution of mutual funds to clients. These fees are recorded as revenue at the time the service is rendered or, in the case of certain distribution fees based on the underlying fund's asset value and/or investor redemption, recorded over time as the investor remains in the fund or upon investor redemption.
(c) JPMorgan Chase Bank, N.A. receives administrative fees predominantly from custody, securities lending, fund services and securities clearance services it provides. These fees are recorded as revenue over the period in which the related service is provided.
(d) JPMorgan Chase Bank, N.A. acts as a broker, by facilitating its clients' purchases and sales of securities and other financial instruments. Brokerage commissions are collected and recognized as revenue upon occurrence of the client transaction. JPMorgan Chase Bank, N.A. reports certain costs paid to third-party clearing houses and exchanges net against commission revenue.
(e) Includes fees earned by JPMorgan Chase Bank, N.A. for shared services provided to related party affiliates of $3.4 billion and $3.2 billion for the years ended December 31, 2018 and 2017, respectively.

In addition, included in all other commissions and fees are fees earned by JPMorgan Chase Bank, N.A. for providing operational support and services to JPMorgan Chase and its subsidiaries. Refer to Note 20 for further information on related party transactions.

Mortgage fees and related income

This revenue category primarily reflects the consumer & community banking business's home lending net production and net mortgage servicing revenue.

Net production revenue includes fees and income recognized as earned on mortgage loans originated with the intent to sell; the impact of risk management activities associated with the mortgage pipeline and warehouse loans; and changes in the fair value of any residual interests held from mortgage securitizations. Net production revenue also includes gains and losses on sales of mortgage loans, lower of cost or fair value adjustments on mortgage loans held-for-sale, changes in fair value on mortgage loans originated with the intent to sell and measured at fair value under the fair value option, as well as losses recognized as incurred related to the repurchase of previously sold loans.

Net mortgage servicing revenue includes operating revenue earned from servicing third-party mortgage loans which is recognized over the period in which the service is provided, changes in the fair value of MSRs and the impact of risk management activities associated with MSRs.

For further discussion of risk management activities and MSRs, refer to Note 16.

Net interest income from mortgage loans is recorded in interest income.

Card income

This revenue category includes interchange income from credit and debit cards and fees earned from processing card transactions for merchants, both of which are recognized when purchases are made by a cardholder. Card income also includes account origination costs and annual fees, which are deferred and recognized on a straight-line basis over a 12-month period.

Certain credit card products offer the cardholder the ability to earn points based on account activity, which the cardholder can choose to redeem for cash and non-cash rewards. The cost to JPMorgan Chase Bank, N.A. related to these proprietary rewards programs varies based on multiple factors including the terms and conditions of the rewards programs, cardholder activity, cardholder reward redemption rates and cardholder reward selections. JPMorgan Chase Bank, N.A. maintains a liability for its obligations under its rewards programs and reports the current-period cost as a reduction of card income.

Credit card revenue sharing agreements
JPMorgan Chase Bank, N.A. has contractual agreements with numerous co-brand partners that grant JPMorgan Chase Bank, N.A. exclusive rights to issue co-branded credit card products and market them to the customers of such partners. These partners endorse the co-brand credit card programs and provide their customer or member lists to JPMorgan Chase Bank, N.A. The partners may also conduct marketing activities and provide rewards redeemable under their own loyalty programs that JPMorgan Chase Bank, N.A. will grant to co-brand credit cardholders based on account activity. The terms of these agreements generally range from five to ten years.

JPMorgan Chase Bank, N.A. typically makes payments to the co-brand credit card partners based on the cost of partners' marketing activities and loyalty program rewards provided to credit cardholders, new account originations and sales volumes. Payments to partners based on marketing efforts undertaken by the partners are expensed by JPMorgan Chase Bank, N.A. as incurred and reported as marketing expense. Payments for partner loyalty rewards are reported as a reduction of card income when incurred. Payments to partners based on new credit card account originations are accounted for as direct loan origination costs and are deferred and recognized as a reduction of card income on a straight-line basis over a 12-month period. Payments to partners based on sales volumes are reported as a reduction of card income when the related interchange income is earned.

The following table presents the components of card income:

Year ended December 31, (in millions)	2018	2017
Interchange and merchant processing income	**$ 18,808**	$ 17,080
Reward costs and partner payments	**(13,074)** [(b)]	(10,820)
Other card income[(a)]	**(745)**	(1,827)
Total card income	**$ 4,989**	$ 4,433

(a) Predominantly represents annual fees and new account origination costs, which are deferred and recognized on a straight-line basis over a 12-month period and are outside the scope of the revenue recognition guidance, ASC 606, *Revenue from Contracts with Customers*.

(b) Includes an adjustment to the credit card rewards liability of approximately $330 million, recorded during the first half of 2018.

Other income

Other income on JPMorgan Chase Bank, N.A.'s Consolidated statements of income included the following:

Year ended December 31, (in millions)	2018	2017
Operating lease income	**$ 4,529**	$ 3,605

Operating lease income is recognized on a straight-line basis over the lease term.

Noninterest expense

Other expense

Other expense on JPMorgan Chase Bank, N.A.'s Consolidated statements of income included the following:

Year ended December 31, (in millions)	2018	2017
Legal expense/(benefit)	**$ 75**	$ (135)
Federal Deposit Insurance Corporation ("FDIC")-related expense	**1,239**	1,492

Note 8 – Interest income and Interest expense

Interest income and interest expense are recorded in the Consolidated statements of income and classified based on the nature of the underlying asset or liability.

The following table presents the components of interest income and interest expense:

Year ended December 31, (in millions)	2018	2017
Interest income		
Loans[a]	**$47,558**	$40,948
Taxable securities	**5,645**	5,520
Non-taxable securities[b]	**1,498**	1,718
Total investment securities	**7,143**	7,238
Trading assets	**5,091**	4,700
Federal funds sold and securities purchased under resale agreements	**2,241**	1,249
Securities borrowed	**195**	67
Deposits with banks	**5,909**	4,237
All other interest-earning assets	**822**	438
Total interest income	**68,959**	58,877
Interest expense		
Interest-bearing deposits	**7,311**	3,822
Federal funds purchased and securities loaned or sold under repurchase agreements	**1,210**	518
Trading liabilities - debt, short-term and all other interest-bearing liabilities	**1,653**	1,366
Long-term debt	**2,178**	1,697
Beneficial interests issued by consolidated VIEs	**450**	500
Total interest expense	**12,802**	7,903
Net interest income	**56,157**	50,974
Provision for credit losses	**4,872**	5,298
Net interest income after provision for credit losses	**$51,285**	$45,676

(a) Includes the amortization/accretion of unearned income (e.g., purchase premiums/discounts, net deferred fees/costs, etc.).
(b) Represents securities that are tax-exempt for U.S. federal income tax purposes.

Interest income and interest expense includes the current-period interest accruals for financial instruments measured at fair value, except for derivatives and financial instruments containing embedded derivatives that would be separately accounted for in accordance with U.S. GAAP, absent the fair value option election; for those instruments, all changes in fair value including any interest elements, are reported in principal transactions revenue. For financial instruments that are not measured at fair value, the related interest is included within interest income or interest expense, as applicable. For further information on accounting for interest income and interest expense related to loans, investment securities, securities financing (i.e. securities purchased or sold under resale or repurchase agreements; securities borrowed; and securities loaned) and long-term debt, refer to Notes 13, 11, 12 and 19, respectively.

Note 9 – Pension and other postretirement employee benefit plans

JPMorgan Chase Bank, N.A. has various defined benefit pension plans and other postretirement employee benefit ("OPEB") plans that provide benefits to its employees. On March 21, 2018 JPMorgan Chase & Co. transferred its qualified U.S. defined benefit pension plan to JPMorgan Chase Bank, N.A. The transfer was accomplished via a non-cash capital contribution and was comprised of a net pension asset of $3.2 billion, accumulated other comprehensive income of $1.6 billion (net of taxes), and a deferred tax liability of $760 million. JPMorgan Chase & Co. transferred cash equal to the value of the deferred tax liability to JPMorgan Chase Bank, N.A. U.S. employees are provided pension benefits through this qualified noncontributory U.S. defined benefit pension plan. Prior to the transfer, JPMorgan Chase Bank, N.A.'s U.S. defined benefit pension expense was determined based upon employee participation in the JPMorgan Chase plan and effected through an intercompany charge from JPMorgan Chase, which was cash settled monthly. JPMorgan Chase Bank, N.A. was charged $204 million in 2017, for U.S. qualified defined benefit pension plan expense.

The principal defined benefit pension plan in the U.S. is a qualified noncontributory plan that provides benefits to substantially all U.S. employees of JPMorgan Chase. In connection with changes to the U.S. Retirement Savings Program during the fourth quarter of 2018, JPMorgan Chase Bank N.A. announced that it will freeze the U.S. defined benefit pension plan. Commencing on January 1, 2020 (and January 1, 2019 for new hires), pay credits will be directed to the U.S. defined contribution plan. Interest credits will continue to accrue. As a result, a curtailment was triggered and a remeasurement of the U.S. defined benefit pension obligation and plan assets occurred as of November 30, 2018. The plan design change resulted in an increase to pension expense of $21 million representing the immediate recognition of the prior service cost, but did not have a material impact on the U.S. defined benefit pension plan or JPMorgan Chase Bank N.A.'s Consolidated Financial Statements.

JPMorgan Chase Bank, N.A. also has defined benefit pension plans that are offered in certain non-U.S. locations based on factors such as eligible compensation, age and/or years of service. It is JPMorgan Chase Bank, N.A.'s policy to fund the pension plans in amounts sufficient to meet the requirements under applicable laws. JPMorgan Chase Bank, N.A. does not anticipate at this time any contribution to the U.S. defined benefit pension plan in 2019. The 2019 contributions to the non-U.S. defined benefit pension plans are expected to be $45 million of which $30 million are contractually required.

JPMorgan Chase Bank, N.A. offers postretirement medical and life insurance benefits to certain U.S. retirees and postretirement medical benefits to qualifying U.S. employees through JPMorgan Chase plans. JPMorgan Chase

Bank, N.A.'s U.S. postretirement medical benefit expense is determined based upon employee participation in the JPMorgan Chase plans and effected through an intercompany charge from JPMorgan Chase, which is cash settled monthly. JPMorgan Chase Bank, N.A. was charged $1 million for each of the years 2018 and 2017, for U.S. OPEB plan expense. Consolidated disclosures of information about the OPEB plans of JPMorgan Chase, including the funded status of the plans, components of benefit cost and weighted-average actuarial assumptions are included in Note 8 on pages 202-208 of JPMorgan Chase's 2018 Form 10-K.

JPMorgan Chase Bank, N.A. also offers certain qualifying employees in the U.S. the ability to participate in a number of nonqualified noncontributory defined benefit pension plans that are unfunded. These plans provide supplemental defined pension benefits to certain employees.

JPMorgan Chase Bank, N.A. also provides a qualified defined contribution plan in the U.S. and maintains other similar arrangements in certain non-U.S. locations.

Pension and OPEB accounting generally requires that the difference between plan assets at fair value and the benefit obligation be measured and recorded on the balance sheet. Plans that are overfunded (excess of plan assets over benefit obligation) are recorded in other assets and plans that are underfunded (excess benefit obligation over plan assets) are recorded within other liabilities. Gains or losses resulting from changes in the benefit obligation and the value of plan assets are recorded in other comprehensive income ("OCI") and recognized as part of the net periodic benefit cost over subsequent periods as discussed in the Gains and losses section of this Note. Additionally, income statement items related to pension and OPEB plans (other than benefits earned during the period) are aggregated and reported net within other expense.

The following table presents the changes in benefit obligations, plan assets, the net funded status, and the pretax pension amounts recorded in AOCI on the Consolidated balance sheets for JPMorgan Chase Bank, N.A.'s significant defined benefit pension plans, and the weighted-average actuarial annualized assumptions for the projected and accumulated postretirement benefit obligations.

As of or for the year ended December 31, (in millions)	Defined benefit pension plans	
	2018	2017
Change in benefit obligation		
Benefit obligation, beginning of year	**$ (3,857)**	$ (3,490)
Transfer from JPMorgan Chase	**(12,486)**	–
Benefits earned during the year	**(352)**	(29)
Interest cost on benefit obligations	**(551)**	(83)
Plan amendments	**(29)**	–
Plan curtailment	**122**	–
Employee contributions	**(7)**	(7)
Net gain/(loss)[(a)]	**924**	(127)
Benefits paid	**861**	163
Plan settlements	**15**	30
Foreign exchange impact and other	**(22)**	(314)
Benefit obligation, end of year[(b)]	**$ (15,382)**	$ (3,857)
Change in plan assets		
Fair value of plan assets, beginning of year	**$ 3,921**	$ 3,431
Transfer from JPMorgan Chase	**15,702**	–
Actual return on plan assets	**(568)**	294
JPMorgan Chase Bank, N.A. contributions	**63**	52
Employee contributions	**7**	7
Benefits paid	**(861)**	(163)
Plan settlements	**(15)**	(30)
Foreign exchange impact and other	**(197)**	330
Fair value of plan assets, end of year[(b)(c)(d)]	**$ 18,052**	$ 3,921
Net funded/(unfunded) status[(e)(f)]	**$ 2,670**	$ 64
Accumulated benefit obligation, end of year	**$ (15,382)**	$ (3,857)
Pretax pension amounts recorded in AOCI		
Net gain/(loss)	**$ (3,102)**	$ (550)
Prior service credit/cost	**(23)**	6
Accumulated other comprehensive income/(loss), pretax, end of year	**$ (3,125)**	$ (544)
Weighted-average actuarial assumptions used to determine benefit obligations		
Discount rate[(g)]	**0.60 - 4.30%**	0.60 - 3.70%
Rate of compensation increase[(g)]	**2.25 - 3.00**	2.25 - 3.00
Interest crediting rate[(g)]	**1.81 - 4.90**	1.81 - 4.90

(a) At December 31, 2018 and 2017, the gain/(loss) was primarily attributed to the change in the discount rate.
(b) At December 31, 2018 and 2017, included non-U.S. benefit obligation of $(3.3) billion and $(3.8) billion, and plan assets of $3.5 billion and $3.9 billion respectively, predominantly in the UK.
(c) At December 31, 2018, approximately $302 million of U.S. defined benefit pension plan assets included participation rights under participating annuity contracts.
(d) At December 31, 2018, defined benefit pension plan amounts that were not measured at fair value included $340 million of accrued receivables, and $503 million of accrued liabilities, for U.S. plans.
(e) Represents plans with an aggregate overfunded balance of $3.1 billion and $293 million at December 31, 2018 and 2017, respectively, and plans with an aggregate underfunded balance of $390 million and $229 million at December 31, 2018 and 2017, respectively.
(f) For pension plans with a projected benefit obligation exceeding plan assets, the projected benefit obligation and fair value of plan assets was $1.2 billion and $762 million at December 31, 2018, respectively and $1.0 billion and $811 million at December 31, 2017, respectively. For pension plans with an accumulated benefit obligation exceeding

plan assets, the accumulated benefit obligation and fair value of plan assets was $1.1 billion and $762 million at December 31, 2018, respectively, and $1.0 billion and $811 million at December 31, 2017, respectively.

(g) For the U.S. defined benefit pension plans, the discount rate assumption is 4.30% and 3.70% for 2018 and 2017, respectively, and the interest crediting rate is 4.90% for both 2018 and 2017, respectively. The rate of compensation increase is 2.30% for 2018.

Gains and losses

For JPMorgan Chase Bank, N.A.'s defined benefit pension plans, fair value is used to determine the expected return on plan assets. Amortization of net gains and losses is included in annual net periodic benefit cost if, as of the beginning of the year, the net gain or loss exceeds 10%of the greater of the PBO or the fair value of the plan assets. Any excess is amortized over the average future service period of defined benefit pension plan participants, which for the U.S. defined benefit pension plan is currently eight years and for the non-U.S. defined benefit pension plans is the period appropriate for the affected plan. In addition, prior service costs are amortized over the average remaining service period of active employees expected to receive benefits under the plan when the prior service cost is first recognized. Due to the curtailment of the principal U.S. defined benefit pension plan in 2018, all related prior service cost was recognized in the annual net periodic benefit cost.

The following table presents the components of net periodic benefit costs reported in the Consolidated statements of income for JPMorgan Chase Bank, N.A.'s significant defined benefit pension and defined contribution plans, and in other comprehensive income for the significant defined benefit pension plans, and the weighted-average annualized actuarial assumptions for the net periodic benefit cost.

Year ended December 31, (in millions)	Defined benefit pension plans 2018	2017
Components of net periodic benefit cost		
Benefits earned during the year	**$ 352**	$ 29
Interest cost on benefit obligations	**551**	83
Expected return on plan assets	**(980)**	(136)
Amortization:		
Net (gain)/loss	**99**	34
Prior service (credit)/cost	**(23)**	(2)
Curtailment (gain)/loss	**21**	–
Settlement (gain)/loss	**2**	2
Net periodic defined benefit cost[(a)]	**22** (c)	10
Other defined benefit pension plans[(b)]	**8**	15
Total defined benefit plans	**30**	25
Total defined contribution plans	**741**	680
Total pension and OPEB cost included in noninterest expense	**$ 771**	$ 705
Changes in plan assets and benefit obligations recognized in other comprehensive income		
Transfer from JPMorgan Chase	**$ 2,123**	$ –
Prior service (credit)/cost arising during the year	**29**	–
Net (gain)/loss arising during the year	**503**	(33)
Amortization of net loss	**(99)**	(34)
Amortization of prior service (cost)/credit	**23**	2
Curtailment gain/(loss)	**(21)**	–
Settlement gain/(loss)	**(2)**	(2)
Foreign exchange impact and other	**25**	52
Total recognized in other comprehensive income	**$ 2,581**	$ (15)
Total recognized in net periodic benefit cost and other comprehensive income	**$ 2,603**	$ (5)
Weighted-average assumptions used to determine net periodic benefit costs		
Discount rate[(d)]	**0.60 - 4.50%**	0.60 - 4.30%
Expected long-term rate of return on plan assets[(d)]	**0.70 - 5.50**	0.70 - 4.30
Rate of compensation increase[(d)]	**2.25 - 3.00**	2.25 - 3.00
Interest crediting rate[(d)]	**1.81 - 4.90**	1.81 - 4.90

(a) Effective January 1, 2018, benefits earned during the year are reported in compensation expense; all other components of net periodic defined benefit costs are reported within other expense in the Consolidated statements of income.
(b) Includes various defined benefit pension plans which are individually immaterial.
(c) Includes $(43) million that was charged by JPMorgan Chase Bank, N.A. to JPMorgan Chase and its non-bank subsidiaries for their share of the U.S. qualified defined benefit pension plan expense.
(d) The 2018 rate assumptions for the U.S. defined benefit pension plans are at the upper end of the range, except for the rate of compensation increase, which is 2.30%.

Plan assumptions

JPMorgan Chase Bank, N.A.'s expected long-term rate of return for defined benefit pension plan assets is a blended weighted average, by asset allocation of the projected long-term returns for the various asset classes, taking into consideration local market conditions and the specific allocation of plan assets. Returns on asset classes are developed using a forward-looking approach and are not strictly based on historical returns. Consideration is also given to current market conditions and the short-term portfolio mix of each plan.

The discount rate used in determining the benefit obligation under the U.S. defined benefit pension plan was provided by JPMorgan Chase Bank, N.A.'s actuaries. This rate was selected by reference to the yields on portfolios of bonds with maturity dates and coupons that closely match each of the plan's projected cash flows. The discount rate for the U.K. defined benefit pension plan represents a rate of appropriate duration from the analysis of yield curves provided by JPMorgan Chase Bank, N.A.'s actuaries.

At December 31, 2018, JPMorgan Chase Bank, N.A. increased the discount rates used to determine its benefit obligations for the U.S. defined benefit pension in light of current market interest rates, which will decrease expense by approximately $22 million in 2019. The 2019 expected long-term rate of return on U.S. defined benefit pension plan assets is 5.50%. As of December 31, 2018, the interest crediting rate assumption was 4.90%.

The following table represents the effect of a 25-basis point decline in the two listed rates below on estimated 2019 defined benefit pension and OPEB plan expense, as well as the effect on the postretirement benefit obligations.

(in millions)	Defined benefit pension plan expense	Benefit obligation
Expected long-term rate of return	$ 44	NA
Discount rate	$ 51	$ 478

Investment strategy and asset allocation

The assets of JPMorgan Chase Bank, N.A.'s defined benefit pension plans are held in various trusts and are invested in well-diversified portfolios of equity and fixed income securities, cash and cash equivalents, and alternative investments.

The investment policies for the assets of JPMorgan Chase Bank, N.A.'s defined benefit pension plans are to optimize the risk-return relationship as appropriate to the needs and goals of each plan using a global portfolio of various asset classes diversified by market segment, economic sector, and issuer. Assets are managed by a combination of internal and external investment managers. JPMorgan Chase Bank, N.A. regularly reviews the asset allocations and asset managers, as well as other factors that impact the portfolios, which are rebalanced when deemed necessary.

Investments held by the plans include financial instruments which are exposed to various risks such as interest rate, market and credit risks. Exposure to a concentration of credit risk is mitigated by the broad diversification of both U.S. and non-U.S. investment instruments. Additionally, the investments in each of the collective investment funds and/or registered investment companies are further diversified into various financial instruments. As of December 31, 2018, assets held by JPMorgan Chase Bank, N.A.'s defined benefit pension plans do not include JPMorgan Chase common stock, except through indirect exposures through investments in third-party stock-index funds. The plans hold investments in funds that are sponsored or managed by affiliates of JPMorgan Chase in the amount of $3.7 billion and $1.5 billion, as of December 31, 2018 and 2017, respectively.

The following table presents the weighted-average asset allocation of the fair values of total plan assets at December 31 for the years indicated, as well as the respective approved asset allocation ranges by asset class.

December 31,	Asset Allocation	% of plan assets 2018[c]	2017[d]
Asset class			
Debt securities[a]	27-100%	**48%**	60%
Equity securities	10-45	**37**	38
Real Estate	0-10	**2**	1
Alternatives[b]	0-35	**13**	1
Total	100%	**100%**	100%

(a) Debt securities primarily include cash and cash equivalents, corporate debt, U.S. federal, state, local and non-U.S. government, and mortgage-backed securities.
(b) Alternatives primarily include limited partnerships.
(c) Represents the U.S. defined benefit pension plan only, as that is the most significant plan.
(d) Represents the non-U.S. plans only, as the funded U.S defined benefit pension plan was transferred in 2018.

Fair value measurement of the plans' assets and liabilities

For information on fair value measurements, including descriptions of level 1, 2, and 3 of the fair value hierarchy and the valuation methods employed by JPMorgan Chase Bank, N.A., refer to Note 3.

Pension plan assets and liabilities measured at fair value

	Defined benefit pension plans							
	2018				2017[f]			
December 31, (in millions)	Level 1	Level 2	Level 3	Total fair value	Level 1	Level 2	Level 3	Total fair value
Cash and cash equivalents	**$ 343**	**$ 1**	**$ –**	**$ 344**	$ 118	$ 1	$ –	$ 119
Equity securities	**5,342**	**162**	**2**	**5,506**	1,047	183	–	1,230
Mutual funds	**–**	**–**	**–**	**–**	87	–	–	87
Collective investment funds[a]	**161**	**–**	**–**	**161**	169	–	–	169
Limited partnerships[b]	**40**	**–**	**–**	**40**	–	–	–	–
Corporate debt securities[c]	**–**	**3,540**	**3**	**3,543**	–	775	–	775
U.S. federal, state, local and non-U.S. government debt securities	**1,191**	**743**	**–**	**1,934**	235	696	–	931
Mortgage-backed securities	**82**	**272**	**3**	**357**	5	8	–	13
Derivative receivables	**–**	**143**	**–**	**143**	–	179	–	179
Other[d]	**885**	**80**	**302**	**1,267**	155	60	–	215
Total assets measured at fair value[e]	**$ 8,044**	**$ 4,941**	**$ 310**	**$ 13,295**	$ 1,816	$ 1,902	$ –	$ 3,718
Derivative payables	**$ –**	**$ (96)**	**$ –**	**$ (96)**	$ –	$ (131)	$ –	$ (131)
Total liabilities measured at fair value	**$ –**	**$ (96)**	**$ –**	**$ (96)**	$ –	$ (131)	$ –	$ (131)

(a) At December 31, 2018 and 2017, collective investment funds primarily included a mix of short-term investment funds, U.S. and non-U.S. equity investments (including index) and real estate funds.
(b) Unfunded commitments to purchase limited partnership investments for the plans were $521 million in 2018.
(c) Corporate debt securities include debt securities of U.S. and non-U.S. corporations.
(d) Other consists primarily of mutual funds, money market funds and participating and non-participating annuity contracts. Mutual funds and money market funds are primarily classified within level 1 of the fair value hierarchy given they are valued using market observable prices. Participating and non-participating annuity contracts are classified within level 3 of the fair value hierarchy due to a lack of market mechanisms for transferring each policy and surrender restrictions.
(e) At December 31, 2018, excludes $5.0 billion of certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient, which are not required to be classified in the fair value hierarchy, $340 million of defined benefit pension plan receivables for investments sold and dividends and interest receivables, $479 million of defined benefit pension plan payables for investments purchased, and $24 million of other liabilities. At December 31, 2017, excludes $334 million of certain non-U.S. defined benefit pension plan investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient, which are not required to be classified in the fair value hierarchy.
(f) Represents the non-U.S. plans only, as the U.S defined benefit pension plan was transferred in 2018.

Changes in level 3 fair value measurements using significant unobservable inputs

(in millions)	Fair value, Beginning balance	Actual return on plan assets: Realized gains/(losses)	Actual return on plan assets: Unrealized gains/(losses)	Purchases, sales and settlements, net	Transfers in and/or out of level 3 [(b)]	Fair value, Ending balance
Year ended December 31, 2018						
U.S. defined benefit pension plan						
Annuity contracts and other [(a)]	**$ —**	**$ —**	**$ —**	**$ (1)**	**$ 311**	**$ 310**

(a) Substantially all are participating and non-participating annuity contracts.
(b) Represents level 3 assets transferred in by JPMorgan Chase.

At December 31, 2017, there were no level 3 assets related to the non-U.S. plans.

Estimated future benefit payments

The following table presents benefit payments expected to be paid, which include the effect of expected future service, for the years indicated.

Year ended December 31, (in millions)	Defined benefit pension plans
2019	$ 927
2020	921
2021	910
2022	909
2023	909
Years 2024–2028	4,487

Note 10 – Employee share-based incentives

Employee share-based awards

JPMorgan Chase Bank, N.A.'s employees receive annual incentive compensation based on their performance, the performance of their business and JPMorgan Chase's consolidated operating results. JPMorgan Chase Bank, N.A.'s employees participate, to the extent they meet minimum eligibility requirements, in various share-based incentive plans sponsored by JPMorgan Chase. For additional information regarding JPMorgan Chase's employee share-based incentives, refer to Note 9 on pages 209-210 of the 2018 Form 10-K.

In 2018 and 2017, JPMorgan Chase granted long-term share-based awards to certain employees under its Long-Term Incentive Plan ("LTIP"), as amended and restated effective May 19, 2015, and further amended and restated effective May 15, 2018. Under the terms of the LTIP, as of December 31, 2018, 86 million shares of JPMorgan Chase's common stock were available for issuance through May 2022. The LTIP is the only active plan under which JPMorgan Chase is currently granting share-based incentive awards. In the following discussion, the LTIP, plus prior JPMorgan Chase plans and plans assumed as the result of acquisitions, are referred to collectively as the "LTI Plans," and such plans constitute JPMorgan Chase's share-based incentive plans.

Restricted stock units ("RSUs") are awarded at no cost to the recipient upon their grant. Generally, RSUs are granted annually and vest at a rate of 50% after two years and 50% after three years and are converted into shares of common stock as of the vesting date. In addition, RSUs typically include full-career eligibility provisions, which allow employees to continue to vest upon voluntary termination based on age or service-related requirements, subject to post-employment and other restrictions. All RSU awards are subject to forfeiture until vested and contain clawback provisions that may result in cancellation under certain specified circumstances. Generally, RSUs entitle the recipient to receive cash payments equivalent to any dividends paid on the underlying common stock during the period the RSUs are outstanding.

In January 2018 and 2017, JPMorgan Chase's Board of Directors approved the grant of performance share units ("PSUs") to members of JPMorgan Chase's Operating Committee under the variable compensation program for performance years 2017 and 2016, respectively. PSUs are subject to JPMorgan Chase's achievement of specified performance criteria over a three-year period. The number of awards that vest can range from zero to 150% of the grant amount. The awards vest and are converted into shares of common stock in the quarter after the end of the performance period, which is generally three years. In addition, dividends are notionally reinvested in JPMorgan Chase's common stock and will be delivered only in respect of any earned shares.

Once the PSUs have vested, the shares of common stock that are delivered, after applicable tax withholding, must be held for an additional two-year period, typically for a total combined vesting and holding period of five years from the grant date.

Under the LTI Plans, stock options and stock appreciation rights ("SARs") have generally been granted with an exercise price equal to the fair value of JPMorgan Chase's common stock on the grant date. JPMorgan Chase periodically grants employee stock options to individual employees. There were no material grants of stock options or SARs in 2018 and 2017. SARs generally expire ten years after the grant date.

JPMorgan Chase Bank, N.A. separately recognizes compensation expense for each tranche of each award, net of estimated forfeitures, as if it were a separate award with its own vesting date. Generally, for each tranche granted, compensation expense is recognized on a straight-line basis from the grant date until the vesting date of the respective tranche, provided that the employees will not become full-career eligible during the vesting period. For awards with full-career eligibility provisions and awards granted with no future substantive service requirement, JPMorgan Chase Bank, N.A. accrues the estimated value of awards expected to be awarded to employees as of the grant date without giving consideration to the impact of post-employment restrictions. For each tranche granted to employees who will become full-career eligible during the vesting period, compensation expense is recognized on a straight-line basis from the grant date until the earlier of the employee's full-career eligibility date or the vesting date of the respective tranche.

RSUs, PSUs, employee stock options and SARs activity

Generally, compensation expense for RSUs and PSUs is measured based on the number of units granted multiplied by the stock price at the grant date, and for employee stock options and SARs, is measured at the grant date using the Black-Scholes valuation model. Compensation expense for these awards is recognized in net income as described previously. The following table summarizes JPMorgan Chase Bank, N.A.'s RSUs, PSUs, employee stock options and SARs activity for 2018.

Year ended December 31, 2018 (in thousands, except weighted-average data, and where otherwise stated)	RSUs/PSUs		Options/SARs			
	Number of units	Weighted-average grant date fair value	Number of awards	Weighted-average exercise price	Weighted-average remaining contractual life (in years)	Aggregate intrinsic value
Outstanding, January 1	51,423	$ 66.51	14,363	$ 40.86		
Granted	15,181	109.83	46	113.62		
Exercised or vested	(22,788)	59.63	(3,881)	40.05		
Forfeited	(1,348)	84.83	(1)	112.25		
Canceled	NA	NA	(11)	44.37		
Transferred	23	66.51	58	40.86		
Outstanding, December 31	42,491	$ 85.01	10,574	$ 41.49	2.5	$ 596,046
Exercisable, December 31	NA	NA	10,560	41.39	2.5	596,046

The total fair value of RSUs that vested during the years ended December 31, 2018 and 2017, was $2.5 billion and $2.0 billion, respectively. The total intrinsic value of options exercised during the years ended December 31, 2018 and 2017, was $282 million and $554 million, respectively.

Compensation expense

JPMorgan Chase Bank, N.A. recognized the following compensation expense related to its various employee share-based incentive plans in its Consolidated statements of income.

Year ended December 31, (in millions)	**2018**	2017
Cost of prior grants of RSUs, PSUs and SARs that are amortized over their applicable vesting periods	**$ 904**	$ 802
Accrual of estimated costs of share-based awards to be granted in future periods including those to full-career eligible employees	**778**	688
Total compensation expense related to employee share-based incentive plans	**$ 1,682**	$ 1,490

There are no separate plans solely for the employees of JPMorgan Chase Bank, N.A. and, therefore, the share-based compensation expense for JPMorgan Chase Bank, N.A. is determined based upon employee participation in the JPMorgan Chase plans and effected through a charge from JPMorgan Chase, which is cash settled.

At December 31, 2018, approximately $522 million (pretax) of compensation expense related to unvested awards had not yet been charged to net income. That cost is expected to be amortized into compensation expense over a weighted-average period of 1.7 years. JPMorgan Chase Bank, N.A. does not capitalize any compensation expense related to share-based compensation awards to employees.

Tax benefits

Effective January 1, 2016, JPMorgan Chase adopted new accounting guidance related to employee share-based payments. As a result of the adoption of this new guidance, JPMorgan Chase Bank, N.A. is recognizing its share of excess tax benefits (including tax benefits from dividends or dividend equivalents) on share-based payment awards within income tax expense in the Consolidated statements of income. Income tax benefits related to share-based incentive arrangements recognized in JPMorgan Chase Bank, N.A.'s Consolidated statements of income for the years ended December 31, 2018 and 2017, were $753 million and $739 million, respectively.

Note 11 – Investment securities

Investment securities consist of debt securities that are classified as AFS or HTM. Debt securities classified as trading assets are discussed in Note 3.

Predominantly all of JPMorgan Chase Bank, N.A.'s AFS and HTM securities are held by the corporate function in connection with its asset-liability management activities. At December 31, 2018, the investment securities portfolio consisted of debt securities with an average credit rating of AA+ (based upon external ratings where available, and where not available, based primarily upon internal ratings which correspond to ratings as defined by S&P and Moody's). AFS securities are carried at fair value on the Consolidated balance sheets. Unrealized gains and losses, after any applicable hedge accounting adjustments, are reported as net increases or decreases to AOCI. The specific identification method is used to determine realized gains and losses on AFS securities, which are included in securities gains/(losses) on the Consolidated statements of income. HTM debt securities, which JPMorgan Chase Bank, N.A. has the intent and ability to hold until maturity, are carried at amortized cost on the Consolidated balance sheets.

For both AFS and HTM debt securities, purchase discounts or premiums are generally amortized into interest income on a level-yield basis over the contractual life of the security. However, as a result of the adoption of the premium amortization accounting guidance in the first quarter of 2018, premiums on purchased callable debt securities must be amortized to the earliest call date for debt securities with call features that are explicit, noncontingent and callable at fixed prices and on preset dates. The guidance primarily impacts obligations of U.S. states and municipalities held in JPMorgan Chase Bank, N.A.'s investment securities portfolio. For additional information, refer to Note 21.

As permitted by the new hedge accounting guidance, JPMorgan Chase Bank, N.A. also elected to transfer U.S. government agency mortgage-backed securities ("MBS"), commercial MBS, and obligations of U.S. states and municipalities with a carrying value of $22.4 billion from HTM to AFS in the first quarter of 2018. The transfer of these investment securities resulted in the recognition of a net pretax unrealized gain of $221 million within AOCI. This transfer was a noncash transaction. For additional information, refer to Notes 1, 6 and 21.

The amortized costs and estimated fair values of the investment securities portfolio were as follows for the dates indicated.

December 31, (in millions)	2018 Amortized cost	2018 Gross unrealized gains	2018 Gross unrealized losses	2018 Fair value	2017 Amortized cost	2017 Gross unrealized gains	2017 Gross unrealized losses	2017 Fair value
Available-for-sale securities								
Mortgage-backed securities:								
U.S. government agencies[(a)]	**$ 69,026**	**$ 594**	**$ 974**	**$ 68,646**	$ 69,879	$ 736	$ 335	$ 70,280
Residential:								
U.S.	**5,877**	**79**	**31**	**5,925**	8,193	185	14	8,364
Non-U.S.	**2,529**	**72**	**6**	**2,595**	2,882	122	1	3,003
Commercial	**6,689**	**43**	**147**	**6,585**	4,791	94	5	4,880
Total mortgage-backed securities	**84,121**	**788**	**1,158**	**83,751**	85,745	1,137	355	86,527
U.S. Treasury and government agencies	**55,771**	**366**	**78**	**56,059**	22,510	266	31	22,745
Obligations of U.S. states and municipalities	**34,709**	**1,523**	**80**	**36,152**	28,444	1,764	33	30,175
Certificates of deposit	**75**	**—**	**—**	**75**	59	—	—	59
Non-U.S. government debt securities	**23,771**	**351**	**20**	**24,102**	26,900	426	32	27,294
Corporate debt securities	**1,904**	**23**	**9**	**1,918**	2,657	101	1	2,757
Asset-backed securities:								
Collateralized loan obligations	**19,612**	**1**	**176**	**19,437**	20,928	69	1	20,996
Other	**7,189**	**51**	**22**	**7,218**	8,725	72	24	8,773
Total available-for-sale debt securities	**227,152**	**3,103**	**1,543**	**228,712**	195,968	3,835	477	199,326
Available-for-sale equity securities[(b)]	**—**	**—**	**—**	**—**	38	—	—	38
Total available-for-sale securities	**$ 227,152**	**$ 3,103**	**$ 1,543**	**$ 228,712**	$ 196,006	$ 3,835	$ 477	$ 199,364
Held-to-maturity securities								
Mortgage-backed securities:								
U.S. government agencies[(c)]	**26,610**	**134**	**200**	**26,544**	27,577	558	40	28,095
Commercial	**—**	**—**	**—**	**—**	5,783	1	74	5,710
Total mortgage-backed securities	**26,610**	**134**	**200**	**26,544**	33,360	559	114	33,805
Obligations of U.S. states and municipalities	**4,824**	**105**	**15**	**4,914**	14,373	554	80	14,847
Total held-to-maturity securities	**31,434**	**239**	**215**	**31,458**	47,733	1,113	194	48,652
Total investment securities	**$ 258,586**	**$ 3,342**	**$ 1,758**	**$ 260,170**	$ 243,739	$ 4,948	$ 671	$ 248,016

(a) Includes total U.S. government-sponsored enterprise obligations with fair values of $50.7 billion and $45.8 billion for the years ended December 31, 2018 and 2017, respectively.

(b) Effective January 1, 2018, JPMorgan Chase Bank, N.A. adopted the recognition and measurement guidance. Equity securities that were previously reported as AFS securities were reclassified to other assets upon adoption.

(c) Included total U.S. government-sponsored enterprise obligations with amortized cost of $20.9 billion and $22.0 billion at December 31, 2018 and 2017, respectively.

Investment securities impairment

The following tables present the fair value and gross unrealized losses for investment securities by aging category at December 31, 2018 and 2017.

	Investment securities with gross unrealized losses					
	Less than 12 months		12 months or more			
December 31, 2018 (in millions)	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Total fair value	Total gross unrealized losses
Available-for-sale securities						
Mortgage-backed securities:						
U.S. government agencies	$ 17,656	$ 318	$ 22,728	$ 656	$ 40,384	$ 974
Residential:						
U.S.	623	4	1,445	27	2,068	31
Non-U.S.	907	5	165	1	1,072	6
Commercial	960	6	3,172	141	4,132	147
Total mortgage-backed securities	20,146	333	27,510	825	47,656	1,158
U.S. Treasury and government agencies	4,792	7	2,391	71	7,183	78
Obligations of U.S. states and municipalities	1,808	15	2,477	65	4,285	80
Certificates of deposit	75	–	–	–	75	–
Non-U.S. government debt securities	3,123	5	1,937	15	5,060	20
Corporate debt securities	478	8	37	1	515	9
Asset-backed securities:						
Collateralized loan obligations	18,681	176	–	–	18,681	176
Other	1,208	6	2,354	16	3,562	22
Total available-for-sale securities	50,311	550	36,706	993	87,017	1,543
Held-to-maturity securities						
Mortgage-backed securities:						
U.S. government agencies	4,385	23	7,082	177	11,467	200
Commercial	–	–	–	–	–	–
Total mortgage-backed securities	4,385	23	7,082	177	11,467	200
Obligations of U.S. states and municipalities	12	–	1,114	15	1,126	15
Total held-to-maturity securities	4,397	23	8,196	192	12,593	215
Total investment securities with gross unrealized losses	$ 54,708	$ 573	$ 44,902	$ 1,185	$ 99,610	$ 1,758

December 31, 2017 (in millions)	Investment securities with gross unrealized losses					
	Less than 12 months		12 months or more			
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Total fair value	Total gross unrealized losses
Available-for-sale securities						
Mortgage-backed securities:						
U.S. government agencies	$ 36,037	$ 139	$ 7,711	$ 196	$ 43,748	$ 335
Residential:						
U.S.	1,112	5	596	9	1,708	14
Non-U.S.	–	–	266	1	266	1
Commercial	528	4	335	1	863	5
Total mortgage-backed securities	37,677	148	8,908	207	46,585	355
U.S. Treasury and government agencies	1,834	11	373	20	2,207	31
Obligations of U.S. states and municipalities	931	7	1,652	26	2,583	33
Certificates of deposit	–	–	–	–	–	–
Non-U.S. government debt securities	6,500	15	811	17	7,311	32
Corporate debt securities	–	–	52	1	52	1
Asset-backed securities:						
Collateralized loan obligations	–	–	276	1	276	1
Other	3,521	20	720	4	4,241	24
Total available-for-sale securities	50,463	201	12,792	276	63,255	477
Held-to-maturity securities						
Mortgage-backed securities:						
U.S. government agencies	4,070	38	205	2	4,275	40
Commercial	3,706	41	1,882	33	5,588	74
Total mortgage-backed securities	7,776	79	2,087	35	9,863	114
Obligations of U.S. states and municipalities	584	9	2,131	71	2,715	80
Total held-to-maturity securities	8,360	88	4,218	106	12,578	194
Total investment securities with gross unrealized losses	$ 58,823	$ 289	$ 17,010	$ 382	$ 75,833	$ 671

Other-than-temporary impairment

AFS and HTM debt securities in unrealized loss positions are analyzed as part of JPMorgan Chase Bank, N.A.'s ongoing assessment of OTTI. JPMorgan Chase Bank, N.A. considers a decline in fair value to be other-than-temporary when JPMorgan Chase Bank, N.A. does not expect to recover the entire amortized cost basis of the security.

For AFS debt securities, JPMorgan Chase Bank, N.A. recognizes OTTI losses in earnings if JPMorgan Chase Bank, N.A. has the intent to sell the debt security, or if it is more likely than not that JPMorgan Chase Bank, N.A. will be required to sell the debt security before recovery of its amortized cost basis. In these circumstances the impairment loss is equal to the full difference between the amortized cost basis and the fair value of the securities.

For debt securities in an unrealized loss position that JPMorgan Chase Bank, N.A. has the intent and ability to hold, the securities are evaluated to determine if a credit loss exists. In the event of a credit loss, only the amount of impairment associated with the credit loss is recognized in income. Amounts relating to factors other than credit losses are recorded in OCI.

Factors considered in evaluating potential OTTI include adverse conditions specifically related to the industry, geographic area or financial condition of the issuer or underlying collateral of a security; payment structure of the security; changes to the rating of the security by a rating agency; the volatility of the fair value changes; and JPMorgan Chase Bank, N.A.'s intent and ability to hold the security until recovery.

JPMorgan Chase Bank, N.A.'s cash flow evaluations take into account the factors noted above and expectations of relevant market and economic data as of the end of the reporting period. When assessing securities issued in a securitization for OTTI, JPMorgan Chase Bank, N.A. estimates cash flows considering underlying loan-level data and structural features of the securitization, such as subordination, excess spread, overcollateralization or other forms of credit enhancement, and compares the losses projected for the underlying collateral ("pool losses") against the level of credit enhancement in the securitization structure to determine whether these features are sufficient to absorb the pool losses, or whether a credit loss exists. JPMorgan Chase Bank, N.A. also performs other analyses to support its cash flow projections, such as first-loss analyses or stress scenarios.

For beneficial interests in securitizations that are rated below "AA" at their acquisition, or that can be contractually prepaid or otherwise settled in such a way that JPMorgan Chase Bank, N.A. would not recover substantially all of its recorded investment, JPMorgan Chase Bank, N.A. considers an impairment to be other-than-temporary when there is an adverse change in expected cash flows.

As a result of the adoption of the recognition and measurement guidance January 1, 2018, equity securities are no longer permitted to be classified as AFS. For additional information, refer to Note 1. Additionally, JPMorgan Chase Bank, N.A. did not recognize any OTTI for AFS equity securities for the year ended December 31, 2017.

For the year ended December 31, 2018, JPMorgan Chase Bank, N.A. recognized $22 million of unrealized losses as OTTI on securities it intended to sell and subsequently sold during the year. JPMorgan Chase Bank, N.A. does not intend to sell any of the remaining investment securities with an unrealized loss in AOCI as of December 31, 2018, and it is not likely that JPMorgan Chase Bank, N.A. will be required to sell these securities before recovery of their amortized cost basis. Further, JPMorgan Chase Bank, N.A. did not recognize any credit-related OTTI losses during the year ended December 31, 2018. Accordingly, JPMorgan Chase Bank, N.A. believes that the investment securities with an unrealized loss in AOCI as of December 31, 2018, are not other-than-temporarily impaired.

Investment securities gains and losses

The following table presents realized gains and losses and OTTI from AFS securities that were recognized in income.

Year ended December 31, (in millions)	**2018**	2017
Realized gains	**$ 211**	$ 1,007
Realized losses	**(606)**	(1,073)
OTTI losses	**–**	(7)
Net investment securities losses	**$ (395)**	$ (73)
OTTI losses		
Credit-related losses recognized in income	**$ –**	$ –
Investment securities JPMorgan Chase Bank, N.A. intends to sell[(a)]	**–**	(7)
Total OTTI losses recognized in income	**$ –**	$ (7)

(a) Excludes realized losses on securities sold of $22 million and $6 million for the years ended December 31, 2018 and 2017, respectively, that had been previously reported as an OTTI loss due to the intention to sell the securities.

Changes in the credit loss component of credit-impaired debt securities

The cumulative credit loss component, including any changes therein, of OTTI losses that have been recognized in income related to AFS securities was not material as of and during the years ended December 31, 2018 and 2017.

Contractual maturities and yields

The following table presents the amortized cost and estimated fair value at December 31, 2018, of JPMorgan Chase Bank, N.A.'s investment securities portfolio by contractual maturity.

By remaining maturity December 31, 2018 (in millions)	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years[(c)]	Total
Available-for-sale securities					
Mortgage-backed securities[(a)]					
Amortized cost	$ 519	$ 77	$ 7,534	$ 75,991	$ 84,121
Fair value	520	77	7,576	75,578	83,751
Average yield[(b)]	2.02%	3.50%	3.48%	3.52%	3.51%
U.S. Treasury and government agencies					
Amortized cost	$ 22,439	$ 17,945	$ 9,618	$ 5,769	$ 55,771
Fair value	22,444	18,090	9,588	5,937	56,059
Average yield[(b)]	2.42%	2.90%	2.60%	3.05%	2.67%
Obligations of U.S. states and municipalities					
Amortized cost	$ 177	$ 510	$ 2,414	$ 31,608	$ 34,709
Fair value	176	518	2,499	32,959	36,152
Average yield[(b)]	1.94%	3.93%	5.17%	4.98%	4.96%
Certificates of deposit					
Amortized cost	$ 75	$ —	$ —	$ —	$ 75
Fair value	75	—	—	—	75
Average yield[(b)]	0.49%	—%	—%	—%	0.49%
Non-U.S. government debt securities					
Amortized cost	$ 5,604	$ 13,117	$ 5,050	$ —	$ 23,771
Fair value	5,605	13,315	5,182	—	24,102
Average yield[(b)]	3.25%	1.95%	1.33%	—%	2.13%
Corporate debt securities					
Amortized cost	$ 22	$ 950	$ 792	$ 140	$ 1,904
Fair value	22	964	792	140	1,918
Average yield[(b)]	4.05%	4.64%	4.56%	4.74%	4.60%
Asset-backed securities					
Amortized cost	$ —	$ 3,222	$ 4,615	$ 18,964	$ 26,801
Fair value	—	3,208	4,591	18,856	26,655
Average yield[(b)]	—%	2.85%	3.12%	3.19%	3.14%
Total available-for-sale securities					
Amortized cost	$ 28,836	$ 35,821	$ 30,023	$ 132,472	$ 227,152
Fair value	28,842	36,172	30,228	133,470	228,712
Average yield[(b)]	2.57%	2.61%	2.95%	3.80%	3.34%
Held-to-maturity securities					
Mortgage-backed securities[(a)]					
Amortized Cost	$ —	$ —	$ 3,125	$ 23,485	$ 26,610
Fair value	—	—	3,141	23,403	26,544
Average yield[(b)]	—%	—%	3.53%	3.34%	3.36%
Obligations of U.S. states and municipalities					
Amortized cost	$ —	$ —	$ 20	$ 4,804	$ 4,824
Fair value	—	—	20	4,894	4,914
Average yield[(b)]	—%	—%	3.93%	4.12%	4.12%
Total held-to-maturity securities					
Amortized cost	$ —	$ —	$ 3,145	$ 28,289	$ 31,434
Fair value	—	—	3,161	28,297	31,458
Average yield[(b)]	—%	—%	3.53%	3.47%	3.48%

(a) As of December 31, 2018, mortgage-backed securities issued by Fannie Mae exceeded 10% of JPMorgan Chase Bank, N.A.'s total stockholder's equity; both the amortized cost and fair value of such securities was $52.3 billion.

(b) Average yield is computed using the effective yield of each security owned at the end of the period, weighted based on the amortized cost of each security. The effective yield considers the contractual coupon, amortization of premiums and accretion of discounts, and the effect of related hedging derivatives. Taxable-equivalent amounts are used where applicable. The effective yield excludes unscheduled principal prepayments; and accordingly, actual maturities of securities may differ from their contractual or expected maturities as certain securities may be prepaid.

(c) Substantially all of JPMorgan Chase Bank, N.A.'s U.S. residential MBS and collateralized mortgage obligations are due in 10 years or more, based on contractual maturity. The estimated weighted-average life, which reflects anticipated future prepayments, is approximately 7 years for agency residential MBS, 3 years for agency residential collateralized mortgage obligations and 2 years for nonagency residential collateralized mortgage obligations.

Note 12 – Securities financing activities

JPMorgan Chase Bank, N.A. enters into resale, repurchase, securities borrowed and securities loaned agreements (collectively, "securities financing agreements") primarily to finance JPMorgan Chase Bank, N.A.'s inventory positions, acquire securities to cover short sales, accommodate customers' financing needs, settle other securities obligations and to deploy JPMorgan Chase Bank, N.A.'s excess cash.

Securities financing agreements are treated as collateralized financings on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets. Resale and repurchase agreements are generally carried at the amounts at which the securities will be subsequently sold or repurchased. Securities borrowed and securities loaned agreements are generally carried at the amount of cash collateral advanced or received. Where appropriate under applicable accounting guidance, securities financing agreements with the same counterparty are reported on a net basis. For further discussion of the offsetting of assets and liabilities, refer to Note 1. Fees received and paid in connection with securities financing agreements are recorded over the life of the agreement in interest income and interest expense on the Consolidated statements of income.

JPMorgan Chase Bank, N.A. has elected the fair value option for certain securities financing agreements. For further information regarding the fair value option, refer to Note 4. The securities financing agreements for which the fair value option has been elected are reported within securities purchased under resale agreements, securities loaned or sold under repurchase agreements, and securities borrowed on the Consolidated balance sheets. Generally, for agreements carried at fair value, current-period interest accruals are recorded within interest income and interest expense, with changes in fair value reported in principal transactions revenue. However, for financial instruments containing embedded derivatives that would be separately accounted for in accordance with accounting guidance for hybrid instruments, all changes in fair value, including any interest elements, are reported in principal transactions revenue.

Securities financing agreements expose JPMorgan Chase Bank, N.A. primarily to credit and liquidity risk. To manage these risks, JPMorgan Chase Bank, N.A. monitors the value of the underlying securities (predominantly high-quality securities collateral, including government-issued debt and agency MBS) that it has received from or provided to its counterparties compared to the value of cash proceeds and exchanged collateral, and either requests additional collateral or returns securities or collateral when appropriate. Margin levels are initially established based upon the counterparty, the type of underlying securities, and the permissible collateral, and are monitored on an ongoing basis.

In resale and securities borrowed agreements, JPMorgan Chase Bank, N.A. is exposed to credit risk to the extent that the value of the securities received is less than initial cash principal advanced and any collateral amounts exchanged. In repurchase and securities loaned agreements, credit risk exposure arises to the extent that the value of underlying securities advanced exceeds the value of the initial cash principal received, and any collateral amounts exchanged.

Additionally, JPMorgan Chase Bank, N.A. typically enters into master netting agreements and other similar arrangements with its counterparties, which provide for the right to liquidate the underlying securities and any collateral amounts exchanged in the event of a counterparty default. It is also JPMorgan Chase Bank, N.A.'s policy to take possession, where possible, of the securities underlying resale and securities borrowed agreements. For further information regarding assets pledged and collateral received in securities financing agreements, refer to Note 26.

As a result of JPMorgan Chase Bank, N.A.'s credit risk mitigation practices with respect to resale and securities borrowed agreements as described above, JPMorgan Chase Bank, N.A. did not hold any reserves for credit impairment with respect to these agreements as December 31, 2018 and 2017.

The table below summarizes the gross and net amounts of JPMorgan Chase Bank, N.A.'s securities financing agreements, as of December 31, 2018 and 2017. When JPMorgan Chase Bank, N.A. has obtained an appropriate legal opinion with respect to the master netting agreement with a counterparty and where other relevant netting criteria under U.S. GAAP are met, JPMorgan Chase Bank, N.A. nets, on the Consolidated balance sheets, the balances outstanding under its securities financing agreements with the same counterparty. In addition, JPMorgan Chase Bank, N.A. exchanges securities and/or cash collateral with its counterparties; this collateral also reduces the economic exposure with the counterparty. Such collateral, along with securities financing balances that do not meet all these relevant netting criteria under U.S. GAAP, is presented as "Amounts not nettable on the Consolidated balance sheets," and reduces the "Net amounts" presented below, if JPMorgan Chase Bank, N.A. has an appropriate legal opinion with respect to the master netting agreement with the counterparty. Where a legal opinion has not been either sought or obtained, the securities financing balances are presented gross in the "Net amounts" below, and related collateral does not reduce the amounts presented.

	2018				
December 31, (in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets[b]	Amounts not nettable on the Consolidated balance sheets[c]	Net amounts[d]
Assets					
Securities purchased under resale agreements	**$ 637,731**	**$ (362,340)**	**$ 275,391**	**$ (264,225)**	**$ 11,166**
Securities borrowed	**46,785**	**(1,450)**	**45,335**	**(40,845)**	**4,490**
Liabilities					
Securities sold under repurchase agreements	**$ 457,084**	**$ (362,340)**	**$ 94,744**	**$ (92,498)**	**$ 2,246**
Securities loaned and other[a]	**19,405**	**(1,450)**	**17,955**	**(17,530)**	**425**

	2017				
December 31, (in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets[b]	Amounts not nettable on the Consolidated balance sheets[c]	Net amounts[d]
Assets					
Securities purchased under resale agreements	$ 346,606	$ (191,712)	$ 154,894	$ (146,035)	$ 8,859
Securities borrowed	40,349	(1,340)	39,009	(36,386)	2,623
Liabilities					
Securities sold under repurchase agreements	$ 275,452	$ (191,712)	$ 83,740	$ (80,769)	$ 2,971
Securities loaned and other[a]	17,534	(1,340)	16,194	(16,017)	177

(a) Includes securities-for-securities lending agreements of $5.8 billion and $7.5 billion at December 31, 2018 and 2017, respectively, accounted for at fair value, where JPMorgan Chase Bank, N.A. is acting as lender. These amounts are presented within accounts payable and other liabilities in the Consolidated balance sheets.

(b) Includes securities financing agreements accounted for at fair value. At December 31, 2018 and 2017, included securities purchased under resale agreements of $4.4 billion and $2.9 billion, respectively; securities sold under repurchase agreements of $5.2 billion and $3.4 billion, respectively; and securities borrowed of $5.1 billion and $3.0 billion, respectively. There were no securities loaned accounted for at fair value in either period.

(c) In some cases, collateral exchanged with a counterparty exceeds the net asset or liability balance with that counterparty. In such cases, the amounts reported in this column are limited to the related net asset or liability with that counterparty.

(d) Includes securities financing agreements that provide collateral rights, but where an appropriate legal opinion with respect to the master netting agreement has not been either sought or obtained. At December 31, 2018 and 2017, included $7.4 billion and $6.9 billion, respectively, of securities purchased under resale agreements; $4.0 billion and $1.6 billion, respectively, of securities borrowed; $1.1 billion and $441 million, respectively, of securities sold under repurchase agreements; and $66 million and $2 million, respectively, of securities loaned and other.

The tables below present as of December 31, 2018, and 2017 the types of financial assets pledged in securities financing agreements and the remaining contractual maturity of the securities financing agreements.

	Gross liability balance			
	2018		2017	
December 31, (in millions)	Securities sold under repurchase agreements	Securities loaned and other	Securities sold under repurchase agreements	Securities loaned and other
Mortgage-backed securities:				
U.S. government agencies	**$ 2,129**	**$ –**	$ 3,046	$ –
Residential - nonagency	**–**	**–**	832	–
Commercial - nonagency	**2**	**–**	46	–
U.S. Treasury and government agencies	**288,240**	**5,449**	88,982	7,010
Non-U.S. government debt	**157,252**	**4,563**	172,197	2,585
Corporate debt securities	**8,883**	**455**	9,910	411
Asset-backed securities	**228**	**–**	439	1
Equity securities	**350**	**8,938**	–	7,527
Total	**$ 457,084**	**$ 19,405**	$ 275,452	$ 17,534

	Remaining contractual maturity of the agreements				
2018 (in millions)	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	**$ 116,327**	**$ 208,310**	**$ 85,876**	**$ 46,571**	**$ 457,084**
Total securities loaned and other	**16,414**	**635**	**9**	**2,347**	**19,405**

	Remaining contractual maturity of the agreements				
2017 (in millions)	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	$ 54,259	$ 156,726	$ 43,892	$ 20,575	$ 275,452
Total securities loaned and other	15,683	166	–	1,685	17,534

Transfers not qualifying for sale accounting

At December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. held $2.1 billion and $1.5 billion, respectively, of financial assets for which the rights have been transferred to third parties; however, the transfers did not qualify as a sale in accordance with U.S. GAAP. These transfers have been recognized as collateralized financing transactions. The transferred assets are recorded in trading assets and loans, and the corresponding liabilities are recorded predominantly in short-term borrowings on the Consolidated balance sheets.

Note 13 – Loans

Loan accounting framework

The accounting for a loan depends on management's strategy for the loan, and on whether the loan was credit-impaired at the date of acquisition. JPMorgan Chase Bank, N.A. accounts for loans based on the following categories:

- Originated or purchased loans held-for-investment (i.e., "retained"), other than PCI loans
- Loans held-for-sale
- Loans at fair value
- PCI loans held-for-investment

The following provides a detailed accounting discussion of these loan categories:

Loans held-for-investment (other than PCI loans)
Originated or purchased loans held-for-investment, other than PCI loans, are recorded at the principal amount outstanding, net of the following: charge-offs; interest applied to principal (for loans accounted for on the cost recovery method); unamortized discounts and premiums; and net deferred loan fees or costs. Credit card loans also include billed finance charges and fees net of an allowance for uncollectible amounts.

Interest income
Interest income on performing loans held-for-investment, other than PCI loans, is accrued and recognized as interest income at the contractual rate of interest. Purchase price discounts or premiums, as well as net deferred loan fees or costs, are amortized into interest income over the contractual life of the loan as an adjustment of yield.

Nonaccrual loans
Nonaccrual loans are those on which the accrual of interest has been suspended. Loans (other than credit card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status and considered nonperforming when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest has been in default for a period of 90 days or more, unless the loan is both well-secured and in the process of collection. A loan is determined to be past due when the minimum payment is not received from the borrower by the contractually specified due date or for certain loans (e.g., residential real estate loans), when a monthly payment is due and unpaid for 30 days or more. Finally, collateral-dependent loans are typically maintained on nonaccrual status.

On the date a loan is placed on nonaccrual status, all interest accrued but not collected is reversed against interest income. In addition, the amortization of deferred amounts is suspended. Interest income on nonaccrual loans may be recognized as cash interest payments are received (i.e., on a cash basis) if the recorded loan balance is deemed fully collectible; however, if there is doubt regarding the ultimate collectibility of the recorded loan balance, all interest cash receipts are applied to reduce the carrying value of the loan (the cost recovery method). For consumer loans, application of this policy typically results in JPMorgan Chase Bank, N.A. recognizing interest income on nonaccrual consumer loans on a cash basis.

A loan may be returned to accrual status when repayment is reasonably assured and there has been demonstrated performance under the terms of the loan or, if applicable, the terms of the restructured loan.

As permitted by regulatory guidance, credit card loans are generally exempt from being placed on nonaccrual status; accordingly, interest and fees related to credit card loans continue to accrue until the loan is charged off or paid in full. JPMorgan Chase Bank, N.A. separately establishes an allowance, which reduces loans and is charged to interest income, for the estimated uncollectible portion of accrued and billed interest and fee income on credit card loans.

Allowance for loan losses
The allowance for loan losses represents the estimated probable credit losses inherent in the held-for-investment loan portfolio at the balance sheet date and is recognized on the balance sheet as a contra asset, which brings the recorded investment to the net carrying value. Changes in the allowance for loan losses are recorded in the provision for credit losses on JPMorgan Chase Bank, N.A.'s Consolidated statements of income. Refer to Note 14 for further information on JPMorgan Chase Bank, N.A.'s accounting policies for the allowance for loan losses.

Charge-offs
Consumer loans, other than risk-rated business banking and auto loans, and PCI loans, are generally charged off or charged down to the net realizable value of the underlying collateral (i.e., fair value less costs to sell), with an offset to the allowance for loan losses, upon reaching specified stages of delinquency in accordance with standards established by the Federal Financial Institutions Examination Council ("FFIEC"). Residential real estate loans and non-modified credit card loans are generally charged off no later than 180 days past due. Scored auto and modified credit card loans are charged off no later than 120 days past due.

Certain consumer loans will be charged off or charged down to their net realizable value earlier than the FFIEC charge-off standards in certain circumstances as follows:

- Loans modified in a troubled debt restructuring ("TDR") that are determined to be collateral-dependent.
- Loans to borrowers who have experienced an event that suggests a loss is either known or highly certain are subject to accelerated charge-off standards (e.g., residential real estate and auto loans are charged off within 60 days of receiving notification of a bankruptcy filing).

- Auto loans upon repossession of the automobile.

Other than in certain limited circumstances, JPMorgan Chase Bank, N.A. typically does not recognize charge-offs on government-guaranteed loans.

Wholesale loans, risk-rated business banking loans and risk-rated auto loans are charged off when it is highly certain that a loss has been realized, including situations where a loan is determined to be both impaired and collateral-dependent. The determination of whether to recognize a charge-off includes many factors, including the prioritization of JPMorgan Chase Bank, N.A.'s claim in bankruptcy, expectations of the workout/restructuring of the loan and valuation of the borrower's equity or the loan collateral.

When a loan is charged down to the estimated net realizable value, the determination of the fair value of the collateral depends on the type of collateral (e.g., securities, real estate). In cases where the collateral is in the form of liquid securities, the fair value is based on quoted market prices or broker quotes. For illiquid securities or other financial assets, the fair value of the collateral is estimated using a discounted cash flow model.

For residential real estate loans, collateral values are based upon external valuation sources. When it becomes likely that a borrower is either unable or unwilling to pay, JPMorgan Chase Bank, N.A. utilizes a broker's price opinion, appraisal and/or an automated valuation model of the home based on an exterior-only valuation ("exterior opinions"), which is then updated at least every twelve months, or more frequently depending on various market factors. As soon as practicable after JPMorgan Chase Bank, N.A. receives the property in satisfaction of a debt (e.g., by taking legal title or physical possession), JPMorgan Chase Bank, N.A. generally obtains an appraisal based on an inspection that includes the interior of the home ("interior appraisals"). Exterior opinions and interior appraisals are discounted based upon JPMorgan Chase Bank, N.A.'s experience with actual liquidation values as compared with the estimated values provided by exterior opinions and interior appraisals, considering state-specific factors.

For commercial real estate loans, collateral values are generally based on appraisals from internal and external valuation sources. Collateral values are typically updated every six to twelve months, either by obtaining a new appraisal or by performing an internal analysis, in accordance with JPMorgan Chase Bank, N.A.'s policies. JPMorgan Chase Bank, N.A. also considers both borrower- and market-specific factors, which may result in obtaining appraisal updates or broker price opinions at more frequent intervals.

Loans held-for-sale
Held-for-sale loans are measured at the lower of cost or fair value, with valuation changes recorded in noninterest revenue. For consumer loans, the valuation is performed on a portfolio basis. For wholesale loans, the valuation is performed on an individual loan basis.

Interest income on loans held-for-sale is accrued and recognized based on the contractual rate of interest.

Loan origination fees or costs and purchase price discounts or premiums are deferred in a contra loan account until the related loan is sold. The deferred fees or costs and discounts or premiums are an adjustment to the basis of the loan and therefore are included in the periodic determination of the lower of cost or fair value adjustments and/or the gain or loss recognized at the time of sale.

Held-for-sale loans are subject to the nonaccrual policies described above.

Because held-for-sale loans are recognized at the lower of cost or fair value, JPMorgan Chase Bank, N.A.'s allowance for loan losses and charge-off policies do not apply to these loans.

Loans at fair value
Loans used in a market-making strategy or risk managed on a fair value basis are measured at fair value, with changes in fair value recorded in noninterest revenue.

Interest income on these loans is accrued and recognized based on the contractual rate of interest. Changes in fair value are recognized in noninterest revenue. Loan origination fees are recognized upfront in noninterest revenue. Loan origination costs are recognized in the associated expense category as incurred.

Because these loans are recognized at fair value, JPMorgan Chase Bank, N.A.'s allowance for loan losses and charge-off policies do not apply to these loans. However, loans at fair value are subject to the nonaccrual policies described above.

Refer to Note 4 for further information on JPMorgan Chase Bank, N.A.'s elections of fair value accounting under the fair value option. Refer to Note 3 and Note 4 for further information on loans carried at fair value and classified as trading assets.

PCI loans
PCI loans held-for-investment are initially measured at fair value. PCI loans have evidence of credit deterioration since the loan's origination date and therefore it is probable, at acquisition, that all contractually required payments will not be collected. Because PCI loans are initially measured at fair value, which includes an estimate of future credit losses, no allowance for loan losses related to PCI loans is recorded at the acquisition date. Refer to page 83 of this Note for information on accounting for PCI loans subsequent to their acquisition.

Loan classification changes

Loans in the held-for-investment portfolio that management decides to sell are transferred to the held-for-sale portfolio at the lower of cost or fair value on the date of transfer. Credit-related losses are charged against the allowance for loan losses; non-credit related losses such as those due to changes in interest rates or foreign currency exchange rates are recognized in noninterest revenue.

In the event that management decides to retain a loan in the held-for-sale portfolio, the loan is transferred to the held-for-investment portfolio at the lower of cost or fair value on the date of transfer. These loans are subsequently assessed for impairment based on JPMorgan Chase Bank, N.A.'s allowance methodology. For a further discussion of the methodologies used in establishing JPMorgan Chase Bank, N.A.'s allowance for loan losses, refer to Note 14.

Loan modifications

JPMorgan Chase Bank, N.A. seeks to modify certain loans in conjunction with its loss-mitigation activities. Through the modification, JPMorgan Chase Bank, N.A. grants one or more concessions to a borrower who is experiencing financial difficulty in order to minimize JPMorgan Chase Bank, N.A.'s economic loss and avoid foreclosure or repossession of the collateral, and to ultimately maximize payments received by JPMorgan Chase Bank, N.A. from the borrower. The concessions granted vary by program and by borrower-specific characteristics, and may include interest rate reductions, term extensions, payment deferrals, principal forgiveness, or the acceptance of equity or other assets in lieu of payments.

Such modifications are accounted for and reported as TDRs. A loan that has been modified in a TDR is generally considered to be impaired until it matures, is repaid, or is otherwise liquidated, regardless of whether the borrower performs under the modified terms. In certain limited cases, the effective interest rate applicable to the modified loan is at or above the current market rate at the time of the restructuring. In such circumstances, and assuming that the loan subsequently performs under its modified terms and JPMorgan Chase Bank, N.A. expects to collect all contractual principal and interest cash flows, the loan is disclosed as impaired and as a TDR only during the year of the modification; in subsequent years, the loan is not disclosed as an impaired loan or as a TDR so long as repayment of the restructured loan under its modified terms is reasonably assured.

Loans, except for credit card loans, modified in a TDR are generally placed on nonaccrual status, although in many cases such loans were already on nonaccrual status prior to modification. These loans may be returned to performing status (the accrual of interest is resumed) if the following criteria are met: (i) the borrower has performed under the modified terms for a minimum of six months and/or six payments, and (ii) JPMorgan Chase Bank, N.A. has an expectation that repayment of the modified loan is reasonably assured based on, for example, the borrower's debt capacity and level of future earnings, collateral values, LTV ratios, and other current market considerations. In certain limited and well-defined circumstances in which the loan is current at the modification date, such loans are not placed on nonaccrual status at the time of modification.

Because loans modified in TDRs are considered to be impaired, these loans are measured for impairment using JPMorgan Chase Bank, N.A.'s established asset-specific allowance methodology, which considers the expected re-default rates for the modified loans. A loan modified in a TDR generally remains subject to the asset-specific allowance methodology throughout its remaining life, regardless of whether the loan is performing and has been returned to accrual status and/or the loan has been removed from the impaired loans disclosures (i.e., loans restructured at market rates). For further discussion of the methodology used to estimate JPMorgan Chase Bank, N.A.'s asset-specific allowance, refer to Note 14.

Foreclosed property

JPMorgan Chase Bank, N.A. acquires property from borrowers through loan restructurings, workouts, and foreclosures. Property acquired may include real property (e.g., residential real estate, land, and buildings) and commercial and personal property (e.g., automobiles, aircraft, railcars, and ships).

JPMorgan Chase Bank, N.A. recognizes foreclosed property upon receiving assets in satisfaction of a loan (e.g., by taking legal title or physical possession). For loans collateralized by real property, JPMorgan Chase Bank, N.A. generally recognizes the asset received at foreclosure sale or upon the execution of a deed in lieu of foreclosure transaction with the borrower. Foreclosed assets are reported in other assets on the Consolidated balance sheets and initially recognized at fair value less costs to sell. Each quarter the fair value of the acquired property is reviewed and adjusted, if necessary, to the lower of cost or fair value. Subsequent adjustments to fair value are charged/credited to noninterest revenue. Operating expense, such as real estate taxes and maintenance, are charged to other expense.

Loan portfolio

JPMorgan Chase Bank, N.A.'s loan portfolio is divided into three portfolio segments, which are the same segments used by JPMorgan Chase Bank, N.A. to determine the allowance for loan losses: Consumer, excluding credit card; Credit card; and Wholesale. Within each portfolio segment JPMorgan Chase Bank, N.A. monitors and assesses the credit risk in the following classes of loans, based on the risk characteristics of each loan class.

Consumer, excluding credit card[a]	Credit card	Wholesale[f]
Residential real estate – excluding PCI • Residential mortgage[b] • Home equity[c] Other consumer loans[d] • Auto • Consumer & Business Banking[e] Residential real estate – PCI • Home equity • Prime mortgage • Subprime mortgage • Option ARMs	• Credit card loans	• Commercial and industrial • Real estate • Financial institutions • Governments & Agencies • Other[g]

(a) Includes loans held in the consumer & community banking business, prime mortgage and home equity loans held in the asset & wealth management business and prime mortgage loans held in the corporate function.
(b) Predominantly includes prime (including option ARMs) and subprime loans.
(c) Includes senior and junior lien home equity loans.
(d) Includes certain business banking and auto dealer risk-rated loans that apply the wholesale methodology for determining the allowance for loan losses; these loans are managed by the consumer & community banking business, and therefore, for consistency in presentation, are included with the other consumer loan classes.
(e) Predominantly includes business banking loans.
(f) Includes loans held in the corporate & investment banking, commercial banking and asset & wealth management businesses and in the corporate function. Excludes prime mortgage and home equity loans held in the asset & wealth management businesses and prime mortgage loans held in the corporate function. Classes are internally defined and may not align with regulatory definitions.
(g) Includes loans to: individuals and individual entities (predominantly consists of wealth management clients within the asset & wealth management business and includes exposure to personal investment companies and personal and testamentary trusts), SPEs and Private education and civic organizations. For more information on SPEs, refer to Note 15.

The following tables summarize JPMorgan Chase Bank, N.A.'s loan balances by portfolio segment.

December 31, 2018 (in millions)	Consumer, excluding credit card	Credit card[a]	Wholesale	Total
Retained	**$ 373,609**	**$ 156,616**	**$ 437,769**	**$ 967,994** [b]
Held-for-sale	**95**	**16**	**11,877**	**11,988**
At fair value	**–**	**–**	**3,151**	**3,151**
Total	**$ 373,704**	**$ 156,632**	**$ 452,797**	**$ 983,133**

December 31, 2017 (in millions)	Consumer, excluding credit card	Credit card[a]	Wholesale	Total
Retained	$ 372,517	$ 149,387	$ 401,879	$ 923,783 [b]
Held-for-sale	128	124	3,099	3,351
At fair value	–	–	2,508	2,508
Total	$ 372,645	$ 149,511	$ 407,486	$ 929,642

(a) Includes accrued interest and fees net of an allowance for the uncollectible portion of accrued interest and fee income.
(b) Loans (other than PCI loans and those for which the fair value option has been elected) are presented net of unamortized discounts and premiums and net deferred loan fees or costs. These amounts were not material as of December 31, 2018 and 2017.

The following tables provide information about the carrying value of retained loans purchased, sold and reclassified to held-for-sale during the periods indicated. Reclassifications of loans to held-for sale are non-cash transactions. JPMorgan Chase Bank, N.A. manages its exposure to credit risk on an ongoing basis. Selling loans is one way that JPMorgan Chase Bank, N.A. reduces its credit exposures. Loans that were reclassified to held-for-sale and sold in a subsequent period are excluded from the sales line of this table.

Year ended December 31, (in millions)	2018 Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	**$ 2,543** [(a)(b)]	**$ –**	**$ 2,354**	**$ 4,897**
Sales	**9,984**	**–**	**16,757**	**26,741**
Retained loans reclassified to held-for-sale	**36**	**–**	**2,276**	**2,312**

Year ended December 31, (in millions)	2017 Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	$ 3,461 [(a)(b)]	$ –	$ 1,799	$ 5,260
Sales	3,405	–	11,063	14,468
Retained loans reclassified to held-for-sale	6,340 [(c)]	–	1,229	7,569

(a) Purchases predominantly represent JPMorgan Chase Bank, N.A.'s voluntary repurchase of certain delinquent loans from loan pools as permitted by Government National Mortgage Association ("Ginnie Mae") guidelines. JPMorgan Chase Bank, N.A. typically elects to repurchase these delinquent loans as it continues to service them and/or manage the foreclosure process in accordance with applicable requirements of Ginnie Mae, the Federal Housing Administration ("FHA"), Rural Housing Service ("RHS") and/or the U.S. Department of Veterans Affairs ("VA").

(b) Excludes purchases of retained loans sourced through the correspondent origination channel and underwritten in accordance with JPMorgan Chase Bank, N.A.'s standards. Such purchases were $18.6 billion and $23.5 billion for the years ended December 31, 2018 and 2017, respectively.

(c) Includes the JPMorgan Chase Bank, N.A.'s student loan portfolio which was sold in 2017.

Gains and losses on sales of loans

Gains and losses on sales of loans (including adjustments to record loans held-for-sale at the lower of cost or fair value) recognized in other income were not material to JPMorgan Chase Bank, N.A. for the years ended December 31, 2018 and 2017. In addition, the sale of loans may also result in write downs, recoveries or changes in the allowance recognized in the provision for credit losses.

Consumer, excluding credit card, loan portfolio

Consumer loans, excluding credit card loans, consist primarily of residential mortgages, home equity loans and lines of credit, auto loans and consumer and business banking loans, with a focus on serving the prime consumer credit market. The portfolio also includes home equity loans secured by junior liens, prime mortgage loans with an interest-only payment period, and certain payment-option loans that may result in negative amortization.

The following table provides information about retained consumer loans, excluding credit card, by class. In 2017, JPMorgan Chase Bank, N.A sold its student loan portfolio.

December 31, (in millions)	2018	2017
Residential real estate – excluding PCI		
Residential mortgage	**$ 231,054**	$ 216,468
Home equity	**28,336**	33,442
Other consumer loans		
Auto	**63,573**	66,242
Consumer & business banking	**26,612**	25,789
Residential real estate – PCI		
Home equity	**8,963**	10,799
Prime mortgage	**4,690**	6,479
Subprime mortgage	**1,945**	2,609
Option ARMs	**8,436**	10,689
Total retained loans	**$ 373,609**	$ 372,517

Delinquency rates are a primary credit quality indicator for consumer loans. Loans that are more than 30 days past due provide an early warning of borrowers who may be experiencing financial difficulties and/or who may be unable or unwilling to repay the loan. As the loan continues to age, it becomes more clear whether the borrower is likely either unable or unwilling to pay. In the case of residential real estate loans, late-stage delinquencies (greater than 150 days past due) are a strong indicator of loans that will ultimately result in a foreclosure or similar liquidation transaction. In addition to delinquency rates, other credit quality indicators for consumer loans vary based on the class of loan, as follows:

- For residential real estate loans, including both non-PCI and PCI portfolios, the current estimated LTV ratio, or the combined LTV ratio in the case of junior lien loans, is an indicator of the potential loss severity in the event of default. Additionally, LTV or combined LTV ratios can provide insight into a borrower's continued willingness to pay, as the delinquency rate of high-LTV loans tends to be greater than that for loans where the borrower has equity in the collateral. The geographic distribution of the loan collateral also provides insight as to the credit quality of the portfolio, as factors such as the regional economy, home price changes and specific events such as natural disasters, will affect credit quality. The borrower's current or "refreshed" FICO score is a secondary credit-quality indicator for certain loans, as FICO scores are an indication of the borrower's credit payment history. Thus, a loan to a borrower with a low FICO score (less than 660) is considered to be of higher risk than a loan to a borrower with a higher FICO score. Further, a loan to a borrower with a high LTV ratio and a low FICO score is at greater risk of default than a loan to a borrower that has both a high LTV ratio and a high FICO score.
- For scored auto and scored business banking loans, geographic distribution is an indicator of the credit performance of the portfolio. Similar to residential real estate loans, geographic distribution provides insights into the portfolio performance based on regional economic activity and events.
- Risk-rated business banking and auto loans are similar to wholesale loans in that the primary credit quality indicators are the risk rating that is assigned to the loan and whether the loans are considered to be criticized and/or nonaccrual. Risk ratings are reviewed on a regular and ongoing basis by Credit Risk Management and are adjusted as necessary for updated information about borrowers' ability to fulfill their obligations. For further information about risk-rated wholesale loan credit quality indicators, refer to page 88 of this Note.

Residential real estate – excluding PCI loans

The following table provides information by class for retained residential real estate – excluding PCI loans.

Residential real estate – excluding PCI loans

December 31, (in millions, except ratios)	Residential mortgage		Home equity		Total residential real estate – excluding PCI	
	2018	2017	**2018**	2017	**2018**	2017
Loan delinquency[(a)]						
Current	**$ 225,880**	$ 208,692	**$ 27,607**	$ 32,383	**$ 253,487**	$ 241,075
30–149 days past due	**2,760**	4,230	**453**	671	**3,213**	4,901
150 or more days past due	**2,414**	3,546	**276**	388	**2,690**	3,934
Total retained loans	**$ 231,054**	$ 216,468	**$ 28,336**	$ 33,442	**$ 259,390**	$ 249,910
% of 30+ days past due to total retained loans[(b)]	**0.48%**	0.77%	**2.57%**	3.17%	**0.71%**	1.09%
90 or more days past due and government guaranteed[(c)]	**$ 2,539**	$ 4,170	**$ –**	$ –	**$ 2,539**	$ 4,170
Nonaccrual loans	**1,763**	2,172	**1,323**	1,610	**3,086**	3,782
Current estimated LTV ratios[(d)(e)]						
Greater than 125% and refreshed FICO scores:						
Equal to or greater than 660	**$ 25**	$ 37	**$ 6**	$ 10	**$ 31**	$ 47
Less than 660	**13**	19	**1**	3	**14**	22
101% to 125% and refreshed FICO scores:						
Equal to or greater than 660	**37**	36	**111**	296	**148**	332
Less than 660	**53**	88	**37**	95	**90**	183
80% to 100% and refreshed FICO scores:						
Equal to or greater than 660	**3,977**	4,369	**985**	1,675	**4,962**	6,044
Less than 660	**281**	483	**326**	569	**607**	1,052
Less than 80% and refreshed FICO scores:						
Equal to or greater than 660	**212,499**	194,752	**22,630**	25,255	**235,129**	220,007
Less than 660	**6,453**	6,945	**3,355**	3,850	**9,808**	10,795
No FICO/LTV available	**810**	1,257	**885**	1,689	**1,695**	2,946
U.S. government-guaranteed	**6,906**	8,482	**–**	–	**6,906**	8,482
Total retained loans	**$ 231,054**	$ 216,468	**$ 28,336**	$ 33,442	**$ 259,390**	$ 249,910
Geographic region[(f)]						
California	**$ 74,758**	$ 68,855	**$ 5,694**	$ 6,580	**$ 80,452**	$ 75,435
New York	**28,845**	27,470	**5,768**	6,864	**34,613**	34,334
Illinois	**15,249**	14,501	**2,130**	2,520	**17,379**	17,021
Texas	**13,768**	12,507	**1,819**	2,021	**15,587**	14,528
Florida	**10,703**	9,596	**1,575**	1,847	**12,278**	11,443
Washington	**8,304**	6,962	**869**	1,026	**9,173**	7,988
New Jersey	**7,301**	7,142	**1,641**	1,957	**8,942**	9,099
Colorado	**8,140**	7,335	**521**	631	**8,661**	7,966
Massachusetts	**6,574**	6,323	**236**	295	**6,810**	6,618
Arizona	**4,433**	4,109	**1,158**	1,438	**5,591**	5,547
All other[(g)]	**52,979**	51,668	**6,925**	8,263	**59,904**	59,931
Total retained loans	**$ 231,054**	$ 216,468	**$ 28,336**	$ 33,442	**$ 259,390**	$ 249,910

(a) Individual delinquency classifications include mortgage loans insured by U.S. government agencies as follows: current included $2.8 billion and $2.4 billion; 30–149 days past due included $2.1 billion and $3.2 billion; and 150 or more days past due included $2.0 billion and $2.9 billion at December 31, 2018 and 2017, respectively.

(b) At December 31, 2018 and 2017, residential mortgage loans excluded mortgage loans insured by U.S. government agencies of $4.1 billion and $6.1 billion, respectively, that are 30 or more days past due. These amounts have been excluded based upon the government guarantee.

(c) These balances, which are 90 days or more past due, were excluded from nonaccrual loans as the loans are guaranteed by U.S. government agencies. Typically, the principal balance of the loans is insured and interest is guaranteed at a specified reimbursement rate subject to meeting agreed-upon servicing guidelines. At December 31, 2018, and 2017, these balances included $997 million and $1.5 billion, respectively, of loans that are no longer accruing interest based on the agreed-upon servicing guidelines. For the remaining balance, interest is being accrued at the guaranteed reimbursement rate. There were no loans that were not guaranteed by U.S. government agencies that are 90 or more days past due and still accruing interest at December 31, 2018 and 2017.

(d) Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. These property values do not represent actual appraised loan level collateral values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates. Current estimated combined LTV for junior lien home equity loans considers all available lien positions, as well as unused lines, related to the property.

(e) Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by JPMorgan Chase Bank, N.A. on at least a quarterly basis.

(f) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2018.

(g) At December 31, 2018 and 2017, included mortgage loans insured by U.S. government agencies of $6.9 billion and $8.5 billion, respectively. These amounts have been excluded from the geographic regions presented based upon the government guarantee.

Approximately 37% of the home equity portfolio are senior lien loans; the remaining balance are junior lien HELOANs or HELOCs. The following table provides JPMorgan Chase Bank, N.A.'s delinquency statistics for junior lien home equity loans and lines as of December 31, 2018 and 2017.

	Total loans		Total 30+ day delinquency rate	
December 31, (in millions, except ratios)	**2018**	2017	**2018**	2017
HELOCs:[(a)]				
Within the revolving period[(b)]	**$ 5,606**	$ 6,360	**0.25%**	0.50%
Beyond the revolving period	**11,283**	13,527	**2.80**	3.56
HELOANs	**1,030**	1,371	**2.82**	3.50
Total	**$ 17,919**	$ 21,258	**2.00%**	2.64%

(a) These HELOCs are predominantly revolving loans for a 10-year period, after which time the HELOC converts to a loan with a 20-year amortization period, but also include HELOCs that allow interest-only payments beyond the revolving period.
(b) JPMorgan Chase Bank, N.A. manages the risk of HELOCs during their revolving period by closing or reducing the undrawn line to the extent permitted by law when borrowers are experiencing financial difficulty.

HELOCs beyond the revolving period and HELOANs have higher delinquency rates than HELOCs within the revolving period. That is primarily because the fully-amortizing payment that is generally required for those products is higher than the minimum payment options available for HELOCs within the revolving period. The higher delinquency rates associated with amortizing HELOCs and HELOANs are factored into JPMorgan Chase Bank, N.A.'s allowance for loan losses.

Impaired loans

The table below provides information about JPMorgan Chase Bank, N.A.'s residential real estate impaired loans, excluding PCI loans. These loans are considered to be impaired as they have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 14.

December 31, (in millions)	Residential mortgage		Home equity		Total residential real estate – excluding PCI	
	2018	2017	**2018**	2017	**2018**	2017
Impaired loans						
With an allowance	**$ 3,376**	$ 4,402	**$ 1,142**	$ 1,236	**$ 4,518**	$ 5,638
Without an allowance[(a)]	**1,182**	1,211	**870**	882	**2,052**	2,093
Total impaired loans[(b)(c)]	**$ 4,558**	$ 5,613	**$ 2,012**	$ 2,118	**$ 6,570**	$ 7,731
Allowance for loan losses related to impaired loans	**$ 88**	$ 62	**$ 45**	$ 111	**$ 133**	$ 173
Unpaid principal balance of impaired loans[(d)]	**6,198**	7,732	**3,466**	3,701	**9,664**	11,433
Impaired loans on nonaccrual status[(e)]	**1,457**	1,741	**955**	1,031	**2,412**	2,772

(a) Represents collateral-dependent residential real estate loans that are charged off to the fair value of the underlying collateral less costs to sell. JPMorgan Chase Bank, N.A. reports, in accordance with regulatory guidance, residential real estate loans that have been discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower ("Chapter 7 loans") as collateral-dependent nonaccrual TDRs, regardless of their delinquency status. At December 31, 2018, Chapter 7 residential real estate loans included approximately 13% of residential mortgages and approximately 9% of home equity that were 30 days or more past due.
(b) At December 31, 2018 and 2017, $4.1 billion and $3.8 billion, respectively, of loans modified subsequent to repurchase from Ginnie Mae in accordance with the standards of the appropriate government agency (i.e., FHA, VA, RHS) are not included in the table above. When such loans perform subsequent to modification in accordance with Ginnie Mae guidelines, they are generally sold back into Ginnie Mae loan pools. Modified loans that do not re-perform become subject to foreclosure.
(c) Predominantly all residential real estate impaired loans, excluding PCI loans, are in the U.S.
(d) Represents the contractual amount of principal owed at December 31, 2018 and 2017. The unpaid principal balance differs from the impaired loan balances due to various factors including charge-offs, net deferred loan fees or costs, and unamortized discounts or premiums on purchased loans.
(e) As of December 31, 2018 and 2017, nonaccrual loans included $2.0 billion and $2.2 billion, respectively, of TDRs for which the borrowers were less than 90 days past due. For additional information about loans modified in a TDR that are on nonaccrual status, refer to the Loan accounting framework on pages 71–73 of this Note.

The following table presents average impaired loans and the related interest income reported by JPMorgan Chase Bank, N.A.

Year ended December 31, (in millions)	Average impaired loans		Interest income on impaired loans[(a)]		Interest income on impaired loans on a cash basis[(a)]	
	2018	2017	**2018**	2017	**2018**	2017
Residential mortgage	**$ 5,075**	$ 5,789	**$ 257**	$ 287	**$ 75**	$ 75
Home equity	**2,077**	2,189	**131**	127	**84**	80
Total residential real estate – excluding PCI	**$ 7,152**	$ 7,978	**$ 388**	$ 414	**$ 159**	$ 155

(a) Generally, interest income on loans modified in TDRs is recognized on a cash basis until the borrower has made a minimum of six payments under the new terms, unless the loan is deemed to be collateral-dependent.

Loan modifications

Modifications of residential real estate loans, excluding PCI loans, are generally accounted for and reported as TDRs. There were no additional commitments to lend to borrowers whose residential real estate loans, excluding PCI loans, have been modified in TDRs.

The following table presents new TDRs reported by JPMorgan Chase Bank, N.A.

Year ended December 31, (in millions)	**2018**	2017
Residential mortgage	**$ 400**	$ 373
Home equity	**286**	321
Total residential real estate – excluding PCI	**$ 686**	$ 694

Nature and extent of modifications

The U.S. Treasury's Making Home Affordable programs, as well as JPMorgan Chase Bank, N.A.'s proprietary modification programs, generally provide various concessions to financially troubled borrowers including, but not limited to, interest rate reductions, term or payment extensions and deferral of principal and/or interest payments that would otherwise have been required under the terms of the original agreement.

The following table provides information about how residential real estate loans, excluding PCI loans, were modified under JPMorgan Chase Bank, N.A.'s loss mitigation programs described above during the periods presented. This table excludes Chapter 7 loans where the sole concession granted is the discharge of debt.

Year ended December 31,	Residential mortgage		Home equity		Total residential real estate – excluding PCI	
	2018	2017	**2018**	2017	**2018**	2017
Number of loans approved for a trial modification	**2,558**	1,281	**2,316**	2,321	**4,874**	3,602
Number of loans permanently modified	**2,900**	2,624	**4,946**	5,624	**7,846**	8,248
Concession granted:[(a)]						
Interest rate reduction	**40%**	63%	**62%**	59%	**54%**	60%
Term or payment extension	**55**	72	**66**	69	**62**	70
Principal and/or interest deferred	**44**	15	**20**	10	**29**	12
Principal forgiveness	**8**	16	**7**	13	**7**	14
Other[(b)]	**38**	33	**58**	31	**51**	32

(a) Represents concessions granted in permanent modifications as a percentage of the number of loans permanently modified. The sum of the percentages exceeds 100% because predominantly all of the modifications include more than one type of concession. Concessions offered on trial modifications are generally consistent with those granted on permanent modifications.

(b) Includes variable interest rate to fixed interest rate modifications for the years ended December 31, 2018 and 2017. Also includes forbearances that meet the definition of a TDR for the year ended December 31, 2018. Forbearances suspend or reduce monthly payments for a specific period of time to address a temporary hardship.

Financial effects of modifications and redefaults

The following table provides information about the financial effects of the various concessions granted in modifications of residential real estate loans, excluding PCI, under the loss mitigation programs described above and about redefaults of certain loans modified in TDRs for the periods presented. The following table presents only the financial effects of permanent modifications and does not include temporary concessions offered through trial modifications. This table also excludes Chapter 7 loans where the sole concession granted is the discharge of debt.

Year ended December 31, (in millions, except weighted-average data)	Residential mortgage		Home equity		Total residential real estate – excluding PCI	
	2018	2017	**2018**	2017	**2018**	2017
Weighted-average interest rate of loans with interest rate reductions – before TDR	**5.65%**	5.15%	**5.39%**	4.95%	**5.50%**	5.06%
Weighted-average interest rate of loans with interest rate reductions – after TDR	**3.80**	2.99	**3.46**	2.64	**3.60**	2.83
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – before TDR	**23**	24	**19**	21	**21**	23
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – after TDR	**38**	38	**39**	39	**38**	38
Charge-offs recognized upon permanent modification	**$ 1**	$ 2	**$ 1**	$ 1	**$ 2**	$ 3
Principal deferred	**21**	12	**9**	10	**30**	22
Principal forgiven	**10**	20	**7**	13	**17**	33
Balance of loans that redefaulted within one year of permanent modification(a)	**$ 97**	$ 124	**$ 63**	$ 56	**$ 160**	$ 180

(a) Represents loans permanently modified in TDRs that experienced a payment default in the periods presented, and for which the payment default occurred within one year of the modification. The dollar amounts presented represent the balance of such loans at the end of the reporting period in which such loans defaulted. For residential real estate loans modified in TDRs, payment default is deemed to occur when the loan becomes two contractual payments past due. In the event that a modified loan redefaults, it is probable that the loan will ultimately be liquidated through foreclosure or another similar type of liquidation transaction. Redefaults of loans modified within the last 12 months may not be representative of ultimate redefault levels.

At December 31, 2018, the weighted-average estimated remaining lives of residential real estate loans, excluding PCI loans, permanently modified in TDRs were 9 years for residential mortgage and 8 years for home equity. The estimated remaining lives of these loans reflect estimated prepayments, both voluntary and involuntary (i.e., foreclosures and other forced liquidations).

Active and suspended foreclosure

At December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. had non-PCI residential real estate loans, excluding those insured by U.S. government agencies, with a carrying value of $652 million and $787 million, respectively, that were not included in REO, but were in the process of active or suspended foreclosure.

Other consumer loans

The table below provides information for other consumer retained loan classes, including auto and business banking loans.

December 31, (in millions, except ratios)	Auto		Consumer & business banking		Total other consumer	
	2018	2017	**2018**	2017	**2018**	2017
Loan delinquency						
Current	**$ 62,984**	$ 65,651	**$ 26,249**	$ 25,454	**$ 89,233**	$ 91,105
30–119 days past due	**589**	584	**252**	213	**841**	797
120 or more days past due	**—**	7	**111**	122	**111**	129
Total retained loans	**$ 63,573**	$ 66,242	**$ 26,612**	$ 25,789	**$ 90,185**	$ 92,031
% of 30+ days past due to total retained loans	**0.93%**	0.89%	**1.36%**	1.30%	**1.06%**	1.01%
Nonaccrual loans[a]	**128**	141	**245**	283	**373**	424
Geographic region[b]						
California	**$ 8,330**	$ 8,445	**$ 5,520**	$ 5,032	**$ 13,850**	$ 13,477
Texas	**6,531**	7,013	**2,993**	2,916	**9,524**	9,929
New York	**3,863**	4,023	**4,381**	4,195	**8,244**	8,218
Illinois	**3,716**	3,916	**2,046**	2,017	**5,762**	5,933
Florida	**3,256**	3,350	**1,502**	1,424	**4,758**	4,774
Arizona	**2,084**	2,221	**1,491**	1,383	**3,575**	3,604
Ohio	**1,973**	2,105	**1,305**	1,380	**3,278**	3,485
New Jersey	**1,981**	2,044	**723**	721	**2,704**	2,765
Michigan	**1,357**	1,418	**1,329**	1,357	**2,686**	2,775
Louisiana	**1,587**	1,656	**860**	849	**2,447**	2,505
All other	**28,895**	30,051	**4,462**	4,515	**33,357**	34,566
Total retained loans	**$ 63,573**	$ 66,242	**$ 26,612**	$ 25,789	**$ 90,185**	$ 92,031
Loans by risk ratings[c]						
Noncriticized	**$ 15,749**	$ 15,604	**$ 18,743**	$ 17,938	**$ 34,492**	$ 33,542
Criticized performing	**273**	93	**751**	791	**1,024**	884
Criticized nonaccrual	**—**	9	**191**	213	**191**	222

(a) There were no loans that were 90 or more days past due and still accruing interest at December 31, 2018 and December 31, 2017.
(b) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2018.
(c) For risk-rated business banking and auto loans, the primary credit quality indicator is the risk rating of the loan, including whether the loans are considered to be criticized and/or nonaccrual.

Other consumer impaired loans and loan modifications

The following table provides information about JPMorgan Chase Bank, N.A.'s other consumer impaired loans, including risk-rated business banking and auto loans that have been placed on nonaccrual status, and loans that have been modified in TDRs.

December 31, (in millions)	2018	2017
Impaired loans		
With an allowance	$ 222	$ 272
Without an allowance[(a)]	29	26
Total impaired loans[(b)(c)]	$ 251	$ 298
Allowance for loan losses related to impaired loans	$ 63	$ 73
Unpaid principal balance of impaired loans[(d)]	355	402
Impaired loans on nonaccrual status	229	268

(a) When discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the loan, the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged off and/or there have been interest payments received and applied to the loan balance.
(b) Predominantly all other consumer impaired loans are in the U.S.
(c) Other consumer average impaired loans were $275 million and $427 million for the years ended December 31, 2018 and 2017, respectively. The related interest income on impaired loans, including those on a cash basis, was not material for the years ended December 31, 2018 and 2017.
(d) Represents the contractual amount of principal owed at December 31, 2018 and 2017. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs, interest payments received and applied to the principal balance, net deferred loan fees or costs and unamortized discounts or premiums on purchased loans.

Loan modifications

Certain other consumer loan modifications are considered to be TDRs as they provide various concessions to borrowers who are experiencing financial difficulty. All of these TDRs are reported as impaired loans. At December 31, 2018 and 2017, other consumer loans modified in TDRs were $79 million and $102 million, respectively. The impact of these modifications, as well as new TDRs, were not material to JPMorgan Chase Bank, N.A. for the years ended December 31, 2018 and 2017. Additional commitments to lend to borrowers whose loans have been modified in TDRs as of December 31, 2018 and 2017 were not material. TDRs on nonaccrual status were $57 million and $72 million at December 31, 2018 and 2017, respectively.

Purchased credit-impaired loans

PCI loans are initially recorded at fair value at acquisition. PCI loans acquired in the same fiscal quarter may be aggregated into one or more pools, provided that the loans have common risk characteristics. A pool is then accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows. All of JPMorgan Chase Bank, N.A.'s residential real estate PCI loans were acquired in the same fiscal quarter and aggregated into pools of loans with common risk characteristics.

On a quarterly basis, JPMorgan Chase Bank, N.A. estimates the total cash flows (both principal and interest) expected to be collected over the remaining life of each pool. These estimates incorporate assumptions regarding default rates, loss severities, the amounts and timing of prepayments and other factors that reflect then-current market conditions. Probable decreases in expected cash flows (i.e., increased credit losses) trigger the recognition of impairment, which is then measured as the present value of the expected principal loss plus any related forgone interest cash flows, discounted at the pool's effective interest rate. Impairments are recognized through the provision for credit losses and an increase in the allowance for loan losses. Probable and significant increases in expected cash flows (e.g., decreased credit losses, the net benefit of modifications) would first reverse any previously recorded allowance for loan losses with any remaining increases recognized prospectively as a yield adjustment over the remaining estimated lives of the underlying loans. The impacts of (i) prepayments, (ii) changes in variable interest rates, and (iii) any other changes in the timing of expected cash flows are generally recognized prospectively as adjustments to interest income.

JPMorgan Chase Bank, N.A. continues to modify certain PCI loans. The impact of these modifications is incorporated into JPMorgan Chase Bank, N.A.'s quarterly assessment of whether a probable and significant change in expected cash flows has occurred, and the loans continue to be accounted for and reported as PCI loans. In evaluating the effect of modifications on expected cash flows, JPMorgan Chase Bank, N.A. incorporates the effect of any forgone interest and also considers the potential for redefault. JPMorgan Chase Bank, N.A. develops product-specific probability of default estimates, which are used to compute expected credit losses. In developing these probabilities of default, JPMorgan Chase Bank, N.A. considers the relationship between the credit quality characteristics of the underlying loans and certain assumptions about home prices and unemployment based upon industry-wide data. JPMorgan Chase Bank, N.A. also considers its own historical loss experience to-date based on actual redefaulted modified PCI loans.

The excess of cash flows expected to be collected over the carrying value of the underlying loans is referred to as the accretable yield. This amount is not reported on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets but is accreted into interest income at a level rate of return over the remaining estimated lives of the underlying pools of loans.

Since the timing and amounts of expected cash flows for JPMorgan Chase Bank, N.A.'s PCI consumer loan pools are reasonably estimable, interest is being accreted and the loan pools are being reported as performing loans. No interest would be accreted and the PCI loan pools would be reported as nonaccrual loans if the timing and/or amounts of expected cash flows on the loan pools were determined not to be reasonably estimable.

The liquidation of PCI loans, which may include sales of loans, receipt of payment in full from the borrower, or foreclosure, results in removal of the loans from the underlying PCI pool. When the amount of the liquidation proceeds (e.g., cash, real estate), if any, is less than the unpaid principal balance of the loan, the difference is first applied against the PCI pool's nonaccretable difference for principal losses (i.e., the lifetime credit loss estimate established as a purchase accounting adjustment at the acquisition date). When the nonaccretable difference for a particular loan pool has been fully depleted, any excess of the unpaid principal balance of the loan over the liquidation proceeds is written off against the PCI pool's allowance for loan losses. Write-offs of PCI loans also include other adjustments, primarily related to principal forgiveness modifications. Because JPMorgan Chase Bank, N.A.'s PCI loans are accounted for at a pool level, JPMorgan Chase Bank, N.A. does not recognize charge-offs of PCI loans when they reach specified stages of delinquency (i.e., unlike non-PCI consumer loans, these loans are not charged off based on FFIEC standards).

The PCI portfolio affects JPMorgan Chase Bank, N.A.'s results of operations primarily through: (i) contribution to net interest margin; (ii) expense related to defaults and servicing resulting from the liquidation of the loans; and (iii) any provision for loan losses. JPMorgan Chase Bank, N.A.'s residential real estate PCI loans were funded based on the interest rate characteristics of the loans. For example, variable-rate loans were funded with variable-rate liabilities and fixed-rate loans were funded with fixed-rate liabilities with a similar maturity profile. A net spread will be earned on the declining balance of the portfolio, which is estimated as of December 31, 2018, to have a remaining weighted-average life of 7 years.

Residential real estate – PCI loans

The table below provides information about JPMorgan Chase Bank, N.A.'s consumer, excluding credit card, PCI loans.

December 31, (in millions, except ratios)	Home equity		Prime mortgage		Subprime mortgage		Option ARMs		Total PCI	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Carrying value[(a)]	**$ 8,963**	$10,799	**$ 4,690**	$ 6,479	**$ 1,945**	$ 2,609	**$ 8,436**	$10,689	**$24,034**	$30,576
Loan delinquency (based on unpaid principal balance)										
Current	**$ 8,624**	$10,272	**$ 4,226**	$ 5,839	**$ 2,033**	$ 2,640	**$ 7,592**	$ 9,662	**$22,475**	$28,413
30–149 days past due	**278**	356	**259**	336	**286**	381	**398**	547	**1,221**	1,620
150 or more days past due	**242**	392	**223**	327	**123**	176	**457**	689	**1,045**	1,584
Total loans	**$ 9,144**	$11,020	**$ 4,708**	$ 6,502	**$ 2,442**	$ 3,197	**$ 8,447**	$10,898	**$24,741**	$31,617
% of 30+ days past due to total loans	**5.69%**	6.79%	**10.24%**	10.20%	**16.75%**	17.42%	**10.12%**	11.34%	**9.16%**	10.13%
Current estimated LTV ratios (based on unpaid principal balance)[(b)(c)]										
Greater than 125% and refreshed FICO scores:										
Equal to or greater than 660	**$ 17**	$ 33	**$ 1**	$ 4	**$ —**	$ 2	**$ 3**	$ 6	**$ 21**	$ 45
Less than 660	**13**	21	**7**	16	**9**	20	**7**	9	**36**	66
101% to 125% and refreshed FICO scores:										
Equal to or greater than 660	**135**	274	**6**	16	**4**	20	**17**	43	**162**	353
Less than 660	**65**	132	**22**	42	**35**	75	**33**	71	**155**	320
80% to 100% and refreshed FICO scores:										
Equal to or greater than 660	**805**	1,195	**75**	221	**54**	119	**119**	316	**1,053**	1,851
Less than 660	**388**	559	**112**	230	**161**	309	**190**	371	**851**	1,469
Lower than 80% and refreshed FICO scores:										
Equal to or greater than 660	**5,548**	6,134	**2,689**	3,551	**739**	895	**5,111**	6,113	**14,087**	16,693
Less than 660	**1,908**	2,095	**1,568**	2,103	**1,327**	1,608	**2,622**	3,499	**7,425**	9,305
No FICO/LTV available	**265**	577	**228**	319	**113**	149	**345**	470	**951**	1,515
Total unpaid principal balance	**$ 9,144**	$11,020	**$ 4,708**	$ 6,502	**$ 2,442**	$ 3,197	**$ 8,447**	$10,898	**$24,741**	$31,617
Geographic region (based on unpaid principal balance)[(d)]										
California	**$ 5,420**	$ 6,555	**$ 2,578**	$ 3,716	**$ 593**	$ 797	**$ 4,798**	$ 6,225	**$13,389**	$17,293
Florida	**976**	1,137	**332**	428	**234**	296	**713**	878	**2,255**	2,739
New York	**525**	607	**365**	457	**268**	330	**502**	628	**1,660**	2,022
Washington	**419**	532	**98**	135	**44**	61	**177**	238	**738**	966
Illinois	**233**	273	**154**	200	**123**	161	**199**	249	**709**	883
New Jersey	**210**	242	**134**	178	**88**	110	**258**	336	**690**	866
Massachusetts	**65**	79	**113**	149	**73**	98	**240**	307	**491**	633
Maryland	**48**	57	**95**	129	**96**	132	**178**	232	**417**	550
Virginia	**54**	66	**91**	123	**37**	51	**211**	280	**393**	520
Arizona	**165**	203	**69**	106	**43**	60	**112**	156	**389**	525
All other	**1,029**	1,269	**679**	881	**843**	1,101	**1,059**	1,369	**3,610**	4,620
Total unpaid principal balance	**$ 9,144**	$11,020	**$ 4,708**	$ 6,502	**$ 2,442**	$ 3,197	**$ 8,447**	$10,898	**$24,741**	$31,617

(a) Carrying value includes the effect of fair value adjustments that were applied to the consumer PCI portfolio at the date of acquisition.
(b) Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. These property values do not represent actual appraised loan level collateral values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates. Current estimated combined LTV for junior lien home equity loans considers all available lien positions, as well as unused lines, related to the property.
(c) Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by JPMorgan Chase Bank, N.A. on at least a quarterly basis.
(d) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2018.

Approximately 26% of the PCI home equity portfolio are senior lien loans; the remaining balance are junior lien HELOANs or HELOCs. The following table provides delinquency statistics for PCI junior lien home equity loans and lines of credit based on the unpaid principal balance as of December 31, 2018 and 2017.

December 31, (in millions, except ratios)	Total loans		Total 30+ day delinquency rate	
	2018	2017	**2018**	2017
HELOCs:[(a)(b)]	**$ 6,531**	$ 7,926	**4.00%**	4.62%
HELOANs	**280**	360	**3.57**	5.28
Total	**$ 6,811**	$ 8,286	**3.98%**	4.65%

(a) In general, these HELOCs are revolving loans for a 10-year period, after which time the HELOC converts to an interest-only loan with a balloon payment at the end of the loan's term. Substantially all HELOCs are beyond the revolving period.
(b) Includes loans modified into fixed rate amortizing loans.

The table below presents the accretable yield activity for JPMorgan Chase Bank, N.A.'s PCI consumer loans for the years ended December 31, 2018 and 2017, and represents JPMorgan Chase Bank, N.A.'s estimate of gross interest income expected to be earned over the remaining life of the PCI loan portfolios. The table excludes the cost to fund the PCI portfolios, and therefore the accretable yield does not represent net interest income expected to be earned on these portfolios.

Year ended December 31, (in millions, except ratios)	Total PCI	
	2018	2017
Beginning balance	**$ 11,159**	$ 11,768
Accretion into interest income	**(1,249)**	(1,396)
Changes in interest rates on variable-rate loans	**(109)**	503
Other changes in expected cash flows[(a)]	**(1,379)**	284
Balance at December 31	**$ 8,422**	$ 11,159
Accretable yield percentage	**4.92%**	4.53%

(a) Other changes in expected cash flows may vary from period to period as JPMorgan Chase Bank, N.A. continues to refine its cash flow model, for example cash flows expected to be collected due to the impact of modifications and changes in prepayment assumptions.

Active and suspended foreclosure

At December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. had PCI residential real estate loans with an unpaid principal balance of $964 million and $1.3 billion, respectively, that were not included in REO, but were in the process of active or suspended foreclosure.

Credit card loan portfolio

The credit card portfolio includes credit card loans originated and purchased by JPMorgan Chase Bank, N.A. Delinquency rates are the primary credit quality indicator for credit card loans as they provide an early warning that borrowers may be experiencing difficulties (30 days past due); information on those borrowers that have been delinquent for a longer period of time (90 days past due) is also considered. In addition to delinquency rates, the geographic distribution of the loans provides insight as to the credit quality of the portfolio based on the regional economy.

While the borrower's credit score is another general indicator of credit quality, JPMorgan Chase Bank, N.A. does not view credit scores as a primary indicator of credit quality because the borrower's credit score tends to be a lagging indicator. The distribution of such scores provides a general indicator of credit quality trends within the portfolio; however, the score does not capture all factors that would be predictive of future credit performance. Refreshed FICO score information, which is obtained at least quarterly, for a statistically significant random sample of the credit card portfolio is indicated in the following table. FICO is considered to be the industry benchmark for credit scores.

JPMorgan Chase Bank, N.A. generally originates new card accounts to prime consumer borrowers. However, certain cardholders' FICO scores may decrease over time, depending on the performance of the cardholder and changes in credit score calculation.

The table below provides information about JPMorgan Chase Bank, N.A.'s credit card loans.

As of or for the year ended December 31, (in millions, except ratios)	2018	2017
Net charge-offs	**$ 4,518**	$ 4,123
% of net charge-offs to retained loans	**3.10%**	2.95%
Loan delinquency		
Current and less than 30 days past due and still accruing	**$ 153,746**	$ 146,704
30–89 days past due and still accruing	**1,426**	1,305
90 or more days past due and still accruing	**1,444**	1,378
Total retained credit card loans	**$ 156,616**	$ 149,387
Loan delinquency ratios		
% of 30+ days past due to total retained loans	**1.83%**	1.80%
% of 90+ days past due to total retained loans	**0.92**	0.92
Credit card loans by geographic region[(a)]		
California	**$ 23,757**	$ 22,245
Texas	**15,085**	14,200
New York	**13,601**	13,021
Florida	**9,770**	9,138
Illinois	**8,938**	8,585
New Jersey	**6,739**	6,506
Ohio	**5,094**	4,997
Pennsylvania	**4,996**	4,883
Colorado	**4,309**	4,006
Michigan	**3,912**	3,826
All other	**60,415**	57,980
Total retained credit card loans	**$ 156,616**	$ 149,387
Percentage of portfolio based on carrying value with estimated refreshed FICO scores		
Equal to or greater than 660	**84.2%**	84.0%
Less than 660	**15.0**	14.6
No FICO available	**0.8**	1.4

(a) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2018.

Credit card impaired loans and loan modifications

The table below provides information about JPMorgan Chase Bank, N.A.'s impaired credit card loans. All of these loans are considered to be impaired as they have been modified in TDRs.

December 31, (in millions)	2018	2017
Impaired credit card loans with an allowance[(a)(b)(c)]	**$ 1,319**	$ 1,215
Allowance for loan losses related to impaired credit card loans	**440**	383

(a) The carrying value and the unpaid principal balance are the same for credit card impaired loans.
(b) There were no impaired loans without an allowance.
(c) Predominantly all impaired credit card loans are in the U.S.

The following table presents average balances of impaired credit card loans and interest income recognized on those loans.

Year ended December 31, (in millions)	2018	2017
Average impaired credit card loans	**$ 1,260**	$ 1,214
Interest income on impaired credit card loans	**65**	59

Loan modifications

JPMorgan Chase Bank, N.A. may offer one of a number of loan modification programs to credit card borrowers who are experiencing financial difficulty. Most of the credit card loans have been modified under long-term programs for borrowers who are experiencing financial difficulties. These modifications involve placing the customer on a fixed payment plan, generally for 60 months, and typically include reducing the interest rate on the credit card. Substantially all modifications are considered to be TDRs.

If the cardholder does not comply with the modified payment terms, then the credit card loan continues to age and will ultimately be charged-off in accordance with JPMorgan Chase Bank, N.A.'s standard charge-off policy. In most cases, JPMorgan Chase Bank, N.A. does not reinstate the borrower's line of credit.

New enrollments in these loan modification programs for the years ended December 31, 2018 and 2017, were $866 million and $756 million, respectively. For all periods disclosed, new enrollments were less than 1% of total retained credit card loans.

Financial effects of modifications and redefaults

The following table provides information about the financial effects of the concessions granted on credit card loans modified in TDRs and redefaults for the periods presented.

Year ended December 31, (in millions, except weighted-average data)	2018	2017
Weighted-average interest rate of loans – before TDR	**17.98%**	16.58%
Weighted-average interest rate of loans – after TDR	**5.16**	4.88
Loans that redefaulted within one year of modification[(a)]	**$ 116**	$ 93

(a) Represents loans modified in TDRs that experienced a payment default in the periods presented, and for which the payment default occurred within one year of the modification. The amounts presented represent the balance of such loans as of the end of the interim period in which they defaulted.

For credit card loans modified in TDRs, payment default is deemed to have occurred when the borrower misses two consecutive contractual payments. A substantial portion of these loans are expected to be charged-off in accordance with JPMorgan Chase Bank, N.A.'s standard charge-off policy. Based on historical experience, the estimated weighted-average default rate for modified credit card loans was expected to be 33.38% and 31.54% as of December 31, 2018 and 2017, respectively.

Wholesale loan portfolio

Wholesale loans include loans made to a variety of clients, ranging from large corporate and institutional clients to high-net-worth individuals.

The primary credit quality indicator for wholesale loans is the risk rating assigned to each loan. Risk ratings are used to identify the credit quality of loans and differentiate risk within the portfolio. Risk ratings on loans consider the probability of default ("PD") and the loss given default ("LGD"). The PD is the likelihood that a loan will default. The LGD is the estimated loss on the loan that would be realized upon the default of the borrower and takes into consideration collateral and structural support for each credit facility.

Management considers several factors to determine an appropriate risk rating, including the obligor's debt capacity and financial flexibility, the level of the obligor's earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. JPMorgan Chase Bank, N.A.'s definition of criticized aligns with the banking regulatory definition of criticized exposures, which consist of special mention, substandard and doubtful categories. Risk ratings generally represent ratings profiles similar to those defined by S&P and Moody's. Investment-grade ratings range from "AAA/Aaa" to "BBB-/Baa3." Noninvestment-grade ratings are classified as noncriticized ("BB+/Ba1 and B-/B3") and criticized ("CCC+"/"Caa1 and below"), and the criticized portion is further subdivided into performing and nonaccrual loans, representing management's assessment of the collectibility of principal and interest. Criticized loans have a higher probability of default than noncriticized loans.

Risk ratings are reviewed on a regular and ongoing basis by Credit Risk Management and are adjusted as necessary for updated information affecting the obligor's ability to fulfill its obligations.

As noted above, the risk rating of a loan considers the industry in which the obligor conducts its operations. As part of the overall credit risk management framework, JPMorgan Chase Bank, N.A. focuses on the management and diversification of its industry and client exposures, with particular attention paid to industries with actual or potential credit concern. Refer to Note 5 for further detail on industry concentrations.

The table below provides information by class of receivable for the retained loans in the Wholesale portfolio segment. For additional information on industry concentrations, refer to Note 5.

As of or for the year ended December 31, (in millions, except ratios)	Commercial and industrial		Real estate		Financial institutions		Governments & Agencies		Other[d]		Total retained loans	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Loans by risk ratings												
Investment-grade	**$ 72,959**	$ 67,378	**$100,107**	$ 98,467	**$ 32,128**	$ 27,559	**$13,434**	$ 14,440	**$119,945**	$103,186	**$ 338,573**	$ 311,030
Noninvestment-grade:												
Noncriticized	**51,592**	46,499	**14,876**	14,329	**15,196**	12,880	**178**	342	**11,515**	10,019	**93,357**	84,069
Criticized performing	**3,738**	3,933	**620**	710	**147**	206	**2**	–	**182**	259	**4,689**	5,108
Criticized nonaccrual	**851**	1,296	**134**	136	**4**	2	**–**	–	**161**	238	**1,150**	1,672
Total noninvestment-grade	**56,181**	51,728	**15,630**	15,175	**15,347**	13,088	**180**	342	**11,858**	10,516	**99,196**	90,849
Total retained loans	**$129,140**	$119,106	**$115,737**	$113,642	**$ 47,475**	$ 40,647	**$13,614**	$ 14,782	**$131,803**	$113,702	**$ 437,769**	$ 401,879
% of total criticized exposure to total retained loans	**3.55%**	4.39%	**0.65 %**	0.74%	**0.32%**	0.51%	**0.01%**	–%	**0.26%**	0.44%	**1.33%**	1.69%
% of criticized nonaccrual to total retained loans	**0.66**	1.09	**0.12**	0.12	**0.01**	–	**–**	–	**0.12**	0.21	**0.26**	0.42
Loans by geographic distribution[a]												
Total non-U.S.	**$ 29,572**	$ 28,470	**$ 2,967**	$ 3,101	**$ 18,521**	$ 16,786	**$ 3,150**	$ 2,905	**$ 48,431**	$ 44,110	**$ 102,641**	$ 95,372
Total U.S.	**99,568**	90,636	**112,770**	110,541	**28,954**	23,861	**10,464**	11,877	**83,372**	69,592	**335,128**	306,507
Total retained loans	**$129,140**	$119,106	**$115,737**	$113,642	**$ 47,475**	$40,647	**$13,614**	$14,782	**$131,803**	$113,702	**$ 437,769**	$401,879
Net charge-offs/ (recoveries)	**$ 126**	$ 117	**$ (20)**	$ (4)	**$ –**	$ 6	**$ –**	$ 5	**$ 10**	$ (5)	**$ 116**	$ 119
% of net charge-offs/ (recoveries) to end-of-period retained loans	**0.10%**	0.10%	**(0.02)%**	–%	**–%**	0.01%	**–%**	0.03%	**0.01%**	–%	**0.03%**	0.03%
Loan delinquency[b]												
Current and less than 30 days past due and still accruing	**$128,012**	$117,486	**$115,533**	$113,251	**$ 47,449**	$ 40,615	**$13,593**	$ 14,770	**$130,936**	$112,565	**$ 435,523**	$ 398,687
30–89 days past due and still accruing	**109**	216	**67**	242	**12**	15	**17**	8	**703**	898	**908**	1,379
90 or more days past due and still accruing[c]	**168**	108	**3**	13	**10**	15	**4**	4	**3**	1	**188**	141
Criticized nonaccrual	**851**	1,296	**134**	136	**4**	2	**–**	–	**161**	238	**1,150**	1,672
Total retained loans	**$129,140**	$119,106	**$115,737**	$113,642	**$ 47,475**	$ 40,647	**$13,614**	$ 14,782	**$131,803**	$113,702	**$ 437,769**	$ 401,879

(a) The U.S. and non-U.S. distribution is determined based predominantly on the domicile of the borrower.
(b) The credit quality of wholesale loans is assessed primarily through ongoing review and monitoring of an obligor's ability to meet contractual obligations rather than relying on the past due status, which is generally a lagging indicator of credit quality.
(c) Represents loans that are considered well-collateralized and therefore still accruing interest.
(d) Other includes individuals and individual entities (predominantly consists of wealth management clients within the asset & wealth management business and includes exposure to personal investment companies and personal and testamentary trusts), SPEs and Private education and civic organizations. For more information on SPEs, refer to Note 15.

The following table presents additional information on the real estate class of loans within the Wholesale portfolio for the periods indicated. Exposure consists primarily of secured commercial loans, of which multifamily is the largest segment. Multifamily lending finances acquisition, leasing and construction of apartment buildings, and includes exposure to real estate investment trusts ("REITs"). Other commercial lending largely includes financing for acquisition, leasing and construction, largely for office, retail and industrial real estate, and includes exposure to REITs. Included in real estate loans is $10.5 billion and $10.8 billion as of December 31, 2018 and 2017, respectively, of construction and development exposure consisting of loans originally purposed for construction and development, general purpose loans for builders, as well as loans for land subdivision and pre-development.

December 31, (in millions, except ratios)	Multifamily		Other Commercial		Total real estate loans	
	2018	2017	**2018**	2017	**2018**	2017
Real estate retained loans	**$ 79,184**	$ 77,597	**$ 36,553**	$ 36,045	**$ 115,737**	$ 113,642
Criticized exposure	**388**	491	**366**	355	**754**	846
% of total criticized exposure to total real estate retained loans	**0.49%**	0.63%	**1.00%**	0.98%	**0.65%**	0.74%
Criticized nonaccrual	**$ 57**	$ 44	**$ 77**	$ 92	**$ 134**	$ 136
% of criticized nonaccrual loans to total real estate retained loans	**0.07%**	0.06%	**0.21%**	0.26%	**0.12%**	0.12%

Wholesale impaired retained loans and loan modifications

Wholesale impaired retained loans consist of loans that have been placed on nonaccrual status and/or that have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 14.

The table below sets forth information about JPMorgan Chase Bank, N.A.'s wholesale impaired retained loans.

December 31, (in millions)	Commercial and industrial		Real estate		Financial institutions		Governments & Agencies		Other		Total retained loans	
	2018	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017
Impaired loans												
With an allowance	**$ 807**	$ 1,111	**$ 107**	$ 79	**$ 4**	$ 93	**$ –**	$ –	**$ 152**	$ 168	**$ 1,070**	$ 1,451
Without an allowance[(a)]	**140**	227	**27**	60	**–**	–	**–**	–	**13**	70	**180**	357
Total impaired loans	**$ 947**	$ 1,338	**$ 134**	$ 139	**$ 4**	$ 93	**$ –**	$ –	**$ 165**	$ 238	**$ 1,250** [(c)]	$ 1,808 [(c)]
Allowance for loan losses related to impaired loans	**$ 252**	$ 372	**$ 25**	$ 11	**$ 1**	$ 4	**$ –**	$ –	**$ 19**	$ 43	**$ 297**	$ 430
Unpaid principal balance of impaired loans[(b)]	**1,043**	1,604	**203**	201	**4**	94	**–**	–	**473**	255	**1,723**	2,154

(a) When the discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the loan, the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged-off and/or there have been interest payments received and applied to the loan balance.
(b) Represents the contractual amount of principal owed at December 31, 2018 and 2017. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs; interest payments received and applied to the carrying value; net deferred loan fees or costs; and unamortized discount or premiums on purchased loans.
(c) Based upon the domicile of the borrower, largely consists of loans in the U.S.

The following table presents JPMorgan Chase Bank, N.A.'s average impaired retained loans for the years ended 2018 and 2017.

Year ended December 31, (in millions)	**2018**	2017
Commercial and industrial	**$ 1,027**	$ 1,256
Real estate	**133**	165
Financial institutions	**57**	48
Governments & Agencies	**–**	–
Other	**199**	241
Total[(a)]	**$ 1,416**	$ 1,710

(a) The related interest income on accruing impaired loans and interest income recognized on a cash basis were not material for the years ended December 31, 2018 and 2017.

Certain loan modifications are considered to be TDRs as they provide various concessions to borrowers who are experiencing financial difficulty. All TDRs are reported as impaired loans in the tables above. TDRs were $576 million and $614 million as of December 31, 2018 and 2017, respectively. The impact of these modifications, as well as new TDRs, were not material to JPMorgan Chase Bank, N.A. for the years ended December 31, 2018 and 2017.

Note 14 – Allowance for credit losses

JPMorgan Chase Bank, N.A.'s allowance for loan losses represents management's estimate of probable credit losses inherent in the JPMorgan Chase Bank, N.A.'s retained loan portfolio, which consists of the two consumer portfolio segments (primarily scored) and the wholesale portfolio segment (risk-rated). JPMorgan Chase Bank, N.A.'s The allowance for loan losses includes a formula-based component, an asset-specific component, and a component related to PCI loans, as described below. Management also estimates an allowance for wholesale and certain consumer lending-related commitments using methodologies similar to those used to estimate the allowance on the underlying loans.

JPMorgan Chase Bank, N.A.'s policies used to determine its allowance for credit losses are described in the following paragraphs.

Determining the appropriateness of the allowance is complex and requires judgment by management about the effect of matters that are inherently uncertain. Subsequent evaluations of the loan portfolio, in light of the factors then prevailing, may result in significant changes in the allowances for loan losses and lending-related commitments in future periods. At least quarterly, the allowance for credit losses is reviewed by the CRO, the Chief Financial Officer ("CFO") and the Controller of JPMorgan Chase. As of December 31, 2018, JPMorgan Chase Bank, N.A. deemed the allowance for credit losses to be appropriate and sufficient to absorb probable credit losses inherent in the portfolio.

Formula-based component

The formula-based component is based on a statistical calculation to provide for incurred credit losses in all consumer loans and performing risk-rated loans. All loans restructured in TDRs as well as any impaired risk-rated loans have an allowance assessed as part of the asset-specific component, while PCI loans have an allowance assessed as part of the PCI component. Refer to Note 13 for more information on TDRs, Impaired loans and PCI loans.

Formula-based component - Consumer loans and certain lending-related commitments

The formula-based allowance for credit losses for the consumer portfolio segments is calculated by applying statistical credit loss factors (estimated PD and loss severities) to the recorded investment balances or loan-equivalent amounts of pools of loan exposures with similar risk characteristics over a loss emergence period to arrive at an estimate of incurred credit losses. Estimated loss emergence periods may vary by product and may change over time; management applies judgment in estimating loss emergence periods, using available credit information and trends. In addition, management applies judgment to the statistical loss estimates for each loan portfolio category, using delinquency trends and other risk characteristics to estimate the total incurred credit losses in the portfolio. Management uses additional statistical methods and considers actual portfolio performance, including actual losses recognized on defaulted loans and collateral valuation trends, to review the appropriateness of the primary statistical loss estimate. The economic impact of potential modifications of residential real estate loans is not included in the statistical calculation because of the uncertainty regarding the type and results of such modifications.

The statistical calculation is then adjusted to take into consideration model imprecision, external factors and current economic events that have occurred but that are not yet reflected in the factors used to derive the statistical calculation; these adjustments are accomplished in part by analyzing the historical loss experience for each major product segment. However, it is difficult to predict whether historical loss experience is indicative of future loss levels. Management applies judgment in making this adjustment, taking into account uncertainties associated with current macroeconomic and political conditions, quality of underwriting standards, borrower behavior, and other relevant internal and external factors affecting the credit quality of the portfolio. In certain instances, the interrelationships between these factors create further uncertainties. The application of different inputs into the statistical calculation, and the assumptions used by management to adjust the statistical calculation, are subject to management judgment, and emphasizing one input or assumption over another, or considering other inputs or assumptions, could affect the estimate of the allowance for credit losses for the consumer credit portfolio.

Overall, the allowance for credit losses for consumer portfolios is sensitive to changes in the economic environment (e.g., unemployment rates), delinquency rates, the realizable value of collateral (e.g., housing prices), FICO scores, borrower behavior and other risk factors. While all of these factors are important determinants of overall allowance levels, changes in the various factors may not occur at the same time or at the same rate, or changes may be directionally inconsistent such that improvement in one factor may offset deterioration in another. In addition, changes in these factors would not necessarily be consistent across all geographies or product types. Finally, it is difficult to predict the extent to which changes in these factors would ultimately affect the frequency of losses, the severity of losses or both.

Formula-based component - Wholesale loans and lending-related commitments

JPMorgan Chase Bank, N.A.'s methodology for determining the allowance for loan losses and the allowance for lending-related commitments involves the early identification of credits that are deteriorating. The formula-based component of the allowance for wholesale loans and lending-related commitments is calculated by applying statistical credit loss factors (estimated PD and LGD) to the recorded investment balances or loan-equivalent over a loss emergence period to arrive at an estimate of incurred credit losses in the portfolio. Estimated loss emergence periods may vary by the funded versus unfunded status of the instrument and may change over time.

JPMorgan Chase Bank, N.A. assesses the credit quality of a borrower or counterparty and assigns a risk rating. Risk ratings are assigned at origination or acquisition, and if necessary, adjusted for changes in credit quality over the life of the exposure. In assessing the risk rating of a particular loan or lending-related commitment, among the factors considered are the obligor's debt capacity and financial flexibility, the level of the obligor's earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. These factors are based on an evaluation of historical and current information and involve subjective assessment and interpretation. Determining risk ratings involves significant judgment; emphasizing one factor over another or considering additional factors could affect the risk rating assigned by JPMorgan Chase Bank, N.A.

A PD estimate is determined based on the JPMorgan Chase Bank, N.A.'s history of defaults over more than one credit cycle.

LGD estimate is a judgment-based estimate assigned to each loan or lending-related commitment. The estimate represents the amount of economic loss if the obligor were to default. The type of obligor, quality of collateral, and the seniority of JPMorgan Chase Bank, N.A.'s lending exposure in the obligor's capital structure affect LGD.

JPMorgan Chase Bank, N.A. applies judgment in estimating PD, LGD, loss emergence period and loan-equivalent used in calculating the allowance for credit losses. Estimates of PD, LGD, loss emergence period and loan-equivalent used are subject to periodic refinement based on any changes to underlying external or JPMorgan Chase Bank, N.A.-specific historical data. Changes to the time period used for PD and LGD estimates could also affect the allowance for credit losses. The use of different inputs, estimates or methodologies could change the amount of the allowance for credit losses determined appropriate by JPMorgan Chase Bank, N.A.

In addition to the statistical credit loss estimates applied to the wholesale portfolio, management applies its judgment to adjust the statistical estimates for wholesale loans and lending-related commitments, taking into consideration model imprecision, external factors and economic events that have occurred but are not yet reflected in the loss factors. Historical experience of both LGD and PD are considered when estimating these adjustments. Factors related to concentrated and deteriorating industries also are incorporated where relevant. These estimates are based on management's view of uncertainties that relate to current macroeconomic conditions, quality of underwriting standards and other relevant internal and external factors affecting the credit quality of the current portfolio.

Asset-specific component

The asset-specific component of the allowance relates to loans considered to be impaired, which includes loans that have been modified in TDRs as well as risk-rated loans that have been placed on nonaccrual status. To determine the asset-specific component of the allowance, larger risk-rated loans (primarily loans in the wholesale portfolio segment) are evaluated individually, while smaller loans (both risk-rated and scored) are evaluated as pools using historical loss experience for the respective class of assets.

JPMorgan Chase Bank, N.A. generally measures the asset-specific allowance as the difference between the recorded investment in the loan and the present value of the cash flows expected to be collected, discounted at the loan's original effective interest rate. Subsequent changes in impairment are reported as an adjustment to the allowance for loan losses. In certain cases, the asset-specific allowance is determined using an observable market price, and the allowance is measured as the difference between the recorded investment in the loan and the loan's fair value. Collateral-dependent loans are charged down to the fair value of collateral less costs to sell. For any of these impaired loans, the amount of the asset-specific allowance required to be recorded, if any, is dependent upon the recorded investment in the loan (including prior charge-offs), and either the expected cash flows or fair value of collateral. Refer to Note 13 for more information about charge-offs and collateral-dependent loans.

The asset-specific component of the allowance for impaired loans that have been modified in TDRs (including forgone interest, principal forgiveness, as well as other concessions) incorporates the effect of the modification on the loan's expected cash flows, which considers the potential for redefault. For residential real estate loans modified in TDRs, JPMorgan Chase Bank, N.A. develops product-specific probability of default estimates, which are applied at a loan level to compute expected losses. In developing these probabilities of default, JPMorgan Chase Bank, N.A. considers the relationship between the credit quality characteristics of the underlying loans and certain assumptions about home prices and unemployment, based upon industry-wide data. JPMorgan Chase Bank, N.A. also considers its own historical loss experience to-date based on actual redefaulted modified loans. For credit card loans modified in TDRs, expected losses incorporate projected redefaults based on JPMorgan Chase Bank, N.A.'s historical experience by type of modification program. For wholesale loans modified in TDRs, expected losses incorporate management's expectation of the borrower's ability to repay under the modified terms.

Estimating the timing and amounts of future cash flows is highly judgmental as these cash flow projections rely upon estimates such as loss severities, asset valuations, default rates (including redefault rates on modified loans), the amounts and timing of interest or principal payments (including any expected prepayments) or other factors that are reflective of current and expected market conditions. These estimates are, in turn, dependent on factors such as the duration of current overall economic conditions, industry-, portfolio-, or borrower-specific factors, the expected outcome of insolvency proceedings as well as, in certain circumstances, other economic factors, including the level of future home prices. All of these estimates and assumptions require significant management judgment and certain assumptions are highly subjective.

PCI loans

In connection with the acquisition of certain PCI loans, which are accounted for as described in Note 13, the allowance for loan losses for the PCI portfolio is based on quarterly estimates of the amount of principal and interest cash flows expected to be collected over the estimated remaining lives of the loans.

These cash flow projections are based on estimates regarding default rates (including redefault rates on modified loans), loss severities, the amounts and timing of prepayments and other factors that are reflective of current and expected future market conditions. These estimates are dependent on assumptions regarding the level of future home prices, and the duration of current overall economic conditions, among other factors. These estimates and assumptions require significant management judgment and certain assumptions are highly subjective.

Allowance for credit losses and related information

The table below summarizes information about the allowances for loan losses and lending-relating commitments, and includes a breakdown of loans and lending-related commitments by impairment methodology.

(Table continued on next page)

	2018			
Year ended December 31, (in millions)	Consumer, excluding credit card	Credit card	Wholesale	Total
Allowance for loan losses				
Beginning balance at January 1,	$ 4,577	$ 4,884	$ 4,083	$ 13,544
Gross charge-offs	1,025	5,011	274	6,310
Gross recoveries	(842)	(493)	(158)	(1,493)
Net charge-offs	183	4,518	116	4,817
Write-offs of PCI loans[(a)]	187	–	–	187
Provision for loan losses	(63)	4,818	130	4,885
Other	1	–	(1)	–
Ending balance at December 31,	$ 4,145	$ 5,184	$ 4,096	$ 13,425
Allowance for loan losses by impairment methodology				
Asset-specific[(b)]	$ 196	$ 440 (c)	$ 297	$ 933
Formula-based	2,161	4,744	3,799	10,704
PCI	1,788	–	–	1,788
Total allowance for loan losses	$ 4,145	$ 5,184	$ 4,096	$ 13,425
Loans by impairment methodology				
Asset-specific	$ 6,821	$ 1,319	$ 1,250	$ 9,390
Formula-based	342,754	155,297	436,516	934,567
PCI	24,034	–	3	24,037
Total retained loans	$ 373,609	$ 156,616	$ 437,769	$ 967,994
Impaired collateral-dependent loans				
Net charge-offs	$ 24	$ –	$ 21	$ 45
Loans measured at fair value of collateral less cost to sell	2,078	–	202	2,280
Allowance for lending-related commitments				
Beginning balance at January 1,	$ 33	$ –	$ 1,035	$ 1,068
Provision for lending-related commitments	–	–	(13)	(13)
Other	–	–	(1)	(1)
Ending balance at December 31,	$ 33	$ –	$ 1,021	$ 1,054
Allowance for lending-related commitments by impairment methodology				
Asset-specific	$ –	$ –	$ 99	$ 99
Formula-based	33	–	922	955
Total allowance for lending-related commitments	$ 33	$ –	$ 1,021	$ 1,054
Lending-related commitments by impairment methodology				
Asset-specific	$ –	$ –	$ 469	$ 469
Formula-based	46,066	605,379	386,270	1,037,715
Total lending-related commitments	$ 46,066	$ 605,379	$ 386,739	$ 1,038,184

(a) Write-offs of PCI loans are recorded against the allowance for loan losses when actual losses for a pool exceed estimated losses that were recorded as purchase accounting adjustments at the time of acquisition. A write-off of a PCI loan is recognized when the underlying loan is removed from a pool.
(b) Includes risk-rated loans that have been placed on nonaccrual status and loans that have been modified in a TDR.
(c) The asset-specific credit card allowance for loan losses is related to loans that have been modified in a TDR; such allowance is calculated based on the loans' original contractual interest rates and does not consider any incremental penalty rates.

(table continued from previous page)

2017			
Consumer, excluding credit card	Credit card	Wholesale	Total
$ 5,195	$ 4,034	$ 4,478	$ 13,707
1,779	4,521	212	6,512
(634)	(398)	(93)	(1,125)
1,145	4,123	119	5,387
86	–	–	86
613	4,973	(278)	5,308
–	–	2	2
$ 4,577	$ 4,884	$ 4,083	$ 13,544
$ 246	$ 383 (c)	$ 430	$ 1,059
2,106	4,501	3,653	10,260
2,225	–	–	2,225
$ 4,577	$ 4,884	$ 4,083	$ 13,544
$ 8,029	$ 1,215	$ 1,808	$ 11,052
333,912	148,172	400,068	882,152
30,576	–	3	30,579
$ 372,517	$ 149,387	$ 401,879	$ 923,783
$ 65	$ –	$ 31	$ 96
2,131	–	233	2,364
$ 26	$ –	$ 1,052	$ 1,078
7	–	(17)	(10)
–	–	–	–
$ 33	$ –	$ 1,035	$ 1,068
$ –	$ –	$ 187	$ 187
33	–	848	881
$ 33	$ –	$ 1,035	$ 1,068
$ –	$ –	$ 731	$ 731
48,553	572,986	368,528	990,067
$ 48,553	$ 572,986	$ 369,259	$ 990,798

Note 15 – Variable interest entities

For a further description of JPMorgan Chase Bank, N.A.'s accounting policies regarding consolidation of VIEs, refer to Note 1.

The following table summarizes the most significant types of JPMorgan Chase Bank, N.A.-sponsored VIEs by each JPMorgan Chase Bank, N.A. business. JPMorgan Chase Bank, N.A. considers a "sponsored" VIE to include any entity where: (1) JPMorgan Chase Bank, N.A. is the primary beneficiary of the structure; (2) the VIE is used by JPMorgan Chase Bank, N.A. to securitize JPMorgan Chase Bank, N.A. assets; (3) the VIE issues financial instruments with the JPMorgan Chase Bank, N.A. name; or (4) the entity is a JPMorgan Chase Bank, N.A.–administered asset-backed commercial paper conduit.

JPMorgan Chase Bank, N.A. business	*Transaction Type*	*Activity*	*Consolidated Financial Statements page reference*
Consumer & community banking	Credit card securitization trusts	Securitization of originated credit card receivables	96-97
	Mortgage securitization trusts	Servicing and securitization of both originated and purchased residential mortgages	96-98
Corporate & investment banking	Mortgage and other securitization trusts	Securitization of both originated and purchased residential and commercial mortgages, and other consumer loans	96-98
	Multi-seller conduits	Assist clients in accessing the financial markets in a cost-efficient manner and structures transactions to meet investor needs	98-99
	Municipal bond vehicles	Financing of municipal bond investments	99

JPMorgan Chase Bank, N.A.'s other businesses are also involved with VIEs (both third-party and JPMorgan Chase Bank, N.A.-sponsored), but to a lesser extent, as follows:

- Commercial banking business: The commercial banking business provides financing and lending-related services to a wide spectrum of clients, including certain third-party-sponsored entities that may meet the definition of a VIE. The commercial banking business does not control the activities of these entities and does not consolidate these entities. The commercial banking business' maximum loss exposure, regardless of whether the entity is a VIE, is generally limited to loans and lending-related commitments which are reported and disclosed in the same manner as any other third-party transaction.
- Corporate function: The corporate function is involved with entities that may meet the definition of VIEs; however these entities are generally subject to specialized investment company accounting, which does not require the consolidation of investments, including VIEs. In addition, the corporate function invests in securities generally issued by third parties which may meet the definition of VIEs (e.g., issuers of asset-backed securities). In general, JPMorgan Chase Bank, N.A. does not have the power to direct the significant activities of these entities and therefore does not consolidate these entities. Refer to Note 11 for further information on JPMorgan Chase Bank, N.A.'s investment securities portfolio.

In addition, the corporate & investment banking business also invests in and provides financing and other services to VIEs sponsored by third parties. Refer to page 101 of this Note for more information on the VIEs sponsored by third parties.

Significant JPMorgan Chase Bank, N.A.-sponsored variable interest entities

Credit card securitizations

The consumer & community banking business's Card business securitizes originated credit card loans, primarily through the Chase Issuance Trust (the "Trust"). JPMorgan Chase Bank, N.A.'s continuing involvement in credit card securitizations includes servicing the receivables, retaining an undivided seller's interest in the receivables, retaining certain senior and subordinated securities and maintaining escrow accounts.

JPMorgan Chase Bank, N.A. is considered to be the primary beneficiary of these JPMorgan Chase Bank, N.A.-sponsored credit card securitization trusts based on JPMorgan Chase Bank, N.A.'s ability to direct the activities of these VIEs through its servicing responsibilities and other duties, including making decisions as to the receivables that are transferred into those trusts and as to any related modifications and workouts. Additionally, the nature and extent of JPMorgan Chase Bank, N.A.'s other continuing involvement with the trusts, as indicated above, obligates JPMorgan Chase Bank, N.A. to absorb losses and gives JPMorgan Chase Bank, N.A. the right to receive certain benefits from these VIEs that could potentially be significant.

The underlying securitized credit card receivables and other assets of the securitization trusts are available only for payment of the beneficial interests issued by the securitization trusts; they are not available to pay JPMorgan Chase Bank, N.A.'s other obligations or the claims of JPMorgan Chase Bank, N.A.

The agreements with the credit card securitization trusts require JPMorgan Chase Bank, N.A. to maintain a minimum undivided interest in the credit card trusts (generally 5%). As of December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. held undivided interests in JPMorgan Chase Bank, N.A.-sponsored credit card securitization trusts of $15.1 billion and $15.8 billion, respectively. JPMorgan Chase Bank, N.A.

maintained an average undivided interest in principal receivables owned by those trusts of approximately 37% and 26% for the years ended December 31, 2018 and 2017. JPMorgan Chase Bank, N.A. did not retain any senior securities and retained $3.0 billion and $4.5 billion of subordinated securities in certain of its credit card securitization trusts as of December 31, 2018 and 2017, respectively. JPMorgan Chase Bank, N.A.'s undivided interests in the credit card trusts and securities retained are eliminated in consolidation.

Mortgage and other securitization trusts

JPMorgan Chase Bank, N.A. securitizes (or has securitized) originated and purchased residential mortgages, commercial mortgages and other consumer loans primarily in its consumer & community banking and corporate & investment banking businesses. Depending on the particular transaction, as well as the respective business involved, JPMorgan Chase Bank, N.A. may act as the servicer of the loans and/or retain certain beneficial interests in the securitization trusts.

The following table presents the total unpaid principal amount of assets held in JPMorgan Chase Bank, N.A.-sponsored private-label securitization entities, including those in which JPMorgan Chase Bank, N.A. has continuing involvement, and those that are consolidated by JPMorgan Chase Bank, N.A. Continuing involvement includes servicing the loans, holding senior interests or subordinated interests (including amounts required to be held pursuant to credit risk retention rules), recourse or guarantee arrangements, and derivative contracts. In certain instances, JPMorgan Chase Bank, N.A.'s only continuing involvement is servicing the loans. Refer to Securitization activity on page 102 of this Note for further information regarding JPMorgan Chase Bank, N.A.'s cash flows associated with and interests retained in nonconsolidated VIEs, and pages 102-103 of this Note for information on JPMorgan Chase Bank, N.A.'s loan sales to U.S. government agencies.

	Principal amount outstanding			JPMorgan Chase Bank, N.A. interest in securitized assets in nonconsolidated VIEs[c][d]			
December 31, 2018 (in millions)	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Investment securities	Other financial assets	Total interests held by JPMorgan Chase Bank, N.A.
Securitization-related[a]							
Residential mortgage:							
Prime/Alt-A and option ARMs	**$ 47,051**	**$ 3,237**	**$ 36,731**	**$ 222**	**$ 613**	**$ –**	**$ 835**
Subprime	**11,260**	**–**	**10,605**	**–**	**–**	**–**	**–**
Commercial and other[b]	**100,905**	**–**	**24,580**	**244**	**772**	**210**	**1,226**
Total	**$ 159,216**	**$ 3,237**	**$ 71,916**	**$ 466**	**$ 1,385**	**$ 210**	**$ 2,061**

	Principal amount outstanding			JPMorgan Chase Bank, N.A. interest in securitized assets in nonconsolidated VIEs[c][d]			
December 31, 2017 (in millions)	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Investment securities	Other financial assets	Total interests held by JPMorgan Chase Bank, N.A.
Securitization-related[a]							
Residential mortgage:							
Prime/Alt-A and option ARMs	$ 48,599	$ 3,615	$ 39,370	$ 215	$ 845	$ –	$ 1,060
Subprime	12,716	–	11,978	–	–	–	–
Commercial and other[b]	92,278	63	23,604	61	1,042	157	1,260
Total	$ 153,593	$ 3,678	$ 74,952	$ 276	$ 1,887	$ 157	$ 2,320

(a) Excludes U.S. government agency securitizations, which are not JPMorgan Chase Bank, N.A.-sponsored. Refer to pages 102-103 of this Note for information on JPMorgan Chase Bank, N.A.'s loan sales to U.S. government agencies.

(b) Consists of securities backed by commercial loans (predominantly real estate) and non-mortgage-related consumer receivables purchased from third parties.

(c) Excludes the following: retained servicing (refer to Note 16 for a discussion of MSRs); securities retained from loan sales to U.S. government agencies; interest rate and foreign exchange derivatives primarily used to manage interest rate and foreign exchange risks of securitization entities (refer to Note 6 for further information on derivatives). There were no senior and subordinated securities purchased in connection with the corporate & investment banking business's secondary market-making activities at December 31, 2018 and 2017, respectively.

(d) As of December 31, 2018 and 2017, 48% and 67%, respectively, of JPMorgan Chase Bank, N.A.'s retained securitization interests, which are predominantly carried at fair value and include amounts required to be held pursuant to credit risk retention rules, were risk-rated "A" or better, on an S&P-equivalent basis. The retained interests in prime residential mortgages consisted of $826 million and $1.0 billion of investment-grade and $9 million and $23 million of noninvestment-grade retained interests at December 31, 2018 and 2017, respectively. The retained interests in commercial and other securitizations trusts consisted of $777 million and $1.0 billion of investment-grade and $448 million and $212 million of noninvestment-grade retained interests at December 31, 2018 and 2017, respectively.

Residential mortgage

JPMorgan Chase Bank, N.A. securitizes residential mortgage loans originated by the consumer & community banking business, as well as residential mortgage loans purchased from third parties by either the consumer & community banking business or the corporate & investment banking business. The consumer & community banking business generally retains servicing for all residential mortgage loans it originated or purchased, and for certain mortgage loans purchased by the corporate & investment banking business. For securitizations of loans serviced by the consumer & community banking business, JPMorgan Chase Bank, N.A. has the power to direct the significant activities of the VIE because it is responsible for decisions related to loan modifications and workouts. The consumer & community banking business may also retain an interest upon securitization.

In addition, the corporate & investment banking business engages in underwriting and trading activities involving securities issued by JPMorgan Chase Bank, N.A.-sponsored securitization trusts. As a result, the corporate & investment banking business at times retains senior and/or subordinated interests (including residual interests and amounts required to be held pursuant to credit risk retention rules) in residential mortgage securitizations at the time of securitization, and/or reacquires positions in the secondary market in the normal course of business. In certain instances, as a result of the positions retained or reacquired by the corporate & investment banking business or held by the consumer & community banking business, when considered together with the servicing arrangements entered into by the consumer & community banking business, JPMorgan Chase Bank, N.A. is deemed to be the primary beneficiary of certain securitization trusts. Refer to the table on page 100 of this Note for more information on consolidated residential mortgage securitizations.

JPMorgan Chase Bank, N.A. does not consolidate a residential mortgage securitization (JPMorgan Chase Bank, N.A.-sponsored or third-party-sponsored) when it is not the servicer (and therefore does not have the power to direct the most significant activities of the trust) or does not hold a beneficial interest in the trust that could potentially be significant to the trust. Refer to the table on page 100 of this Note for more information on the consolidated residential mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated residential mortgage securitizations.

Commercial mortgages and other consumer securitizations

The corporate & investment banking business originates and securitizes commercial mortgage loans, and engages in underwriting and trading activities involving the securities issued by securitization trusts. The corporate & investment banking business may retain unsold senior and/or subordinated interests (including amounts required to be held pursuant to credit risk retention rules) in commercial mortgage securitizations at the time of securitization but, generally, JPMorgan Chase Bank, N.A. does not service commercial loan securitizations. For commercial mortgage securitizations the power to direct the significant activities of the VIE generally is held by the servicer or investors in a specified class of securities ("controlling class"). JPMorgan Chase Bank, N.A. generally does not retain an interest in the controlling class in its sponsored commercial mortgage securitization transactions. Refer to the table on page 100 of this Note for more information on the consolidated commercial mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated securitizations.

Multi-seller conduits

Multi-seller conduit entities are separate bankruptcy remote entities that provide secured financing, collateralized by pools of receivables and other financial assets, to customers of JPMorgan Chase Bank, N.A. The conduits fund their financing facilities through the issuance of highly rated commercial paper. The primary source of repayment of the commercial paper is the cash flows from the pools of assets. In most instances, the assets are structured with deal-specific credit enhancements provided to the conduits by the customers (i.e., sellers) or other third parties. Deal-specific credit enhancements are generally structured to cover a multiple of historical losses expected on the pool of assets, and are typically in the form of overcollateralization provided by the seller. The deal-specific credit enhancements mitigate JPMorgan Chase Bank, N.A.'s potential losses on its agreements with the conduits.

To ensure timely repayment of the commercial paper, and to provide the conduits with funding to provide financing to customers in the event that the conduits do not obtain funding in the commercial paper market, each asset pool financed by the conduits has a minimum 100% deal-specific liquidity facility associated with it provided by JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. also provides the multi-seller conduit vehicles with uncommitted program-wide liquidity facilities and program-wide credit enhancement in the form of standby letters of credit. The amount of program-wide credit enhancement required is based upon commercial paper issuance and approximates 10% of the outstanding balance of commercial paper.

JPMorgan Chase Bank, N.A. consolidates its JPMorgan Chase Bank, N.A.-administered multi-seller conduits, as it has both the power to direct the significant activities of the conduits and a potentially significant economic interest in the conduits. As administrative agent and in its role in structuring transactions, JPMorgan Chase Bank, N.A. makes decisions regarding asset types and credit quality, and manages the commercial paper funding needs of the conduits. JPMorgan Chase Bank, N.A.'s interests that could potentially be significant to the VIEs include the fees received as administrative agent and liquidity and program-wide credit enhancement provider, as well as the potential exposure created by the liquidity and credit enhancement facilities provided to the conduits. Refer to page 100 of this Note for further information on consolidated VIE assets and liabilities.

In the normal course of business, JPMorgan Chase Bank, N.A. makes markets in and invests in commercial paper issued by JPMorgan Chase Bank, N.A.-administered multi-seller conduits. JPMorgan Chase Bank, N.A. held $20.1 billion and $20.4 billion of the commercial paper issued by JPMorgan Chase Bank, N.A.-administered multi-seller conduits at December 31, 2018 and 2017, respectively, which have been eliminated in consolidation. JPMorgan Chase Bank, N.A.'s investments reflect its funding needs and capacity and were not driven by market illiquidity. Other than the amounts required to be held pursuant to credit risk retention rules, JPMorgan Chase Bank, N.A. is not obligated under any agreement to purchase the commercial paper issued by JPMorgan Chase Bank, N.A.-administered multi-seller conduits.

JPMorgan Chase Bank, N.A. provides deal-specific liquidity as well as program-wide liquidity and credit enhancement to its administered multi-seller conduits, which have been eliminated in consolidation. The administered multi-seller conduits then provide certain of their clients with lending-related commitments. The unfunded commitments were $8.0 billion and $8.8 billion at December 31, 2018 and 2017, respectively, and are reported as off-balance sheet lending-related commitments. For more information on off-balance sheet lending-related commitments, refer to Note 25.

Municipal bond vehicles

Municipal bond vehicles or tender option bond ("TOB") trusts allow institutions to finance their municipal bond investments at short-term rates. In a typical TOB transaction, the trust purchases highly rated municipal bond(s) of a single issuer and funds the purchase by issuing two types of securities: (1) puttable floating-rate certificates ("floaters") and (2) inverse floating-rate residual interests ("residuals"). The floaters are typically purchased by money market funds or other short-term investors and may be tendered, with requisite notice, to the TOB trust. The residuals are retained by the investor seeking to finance its municipal bond investment. TOB transactions where the residual is held by a third-party investor are typically known as customer TOB trusts, and non-customer TOB trusts are transactions where the Residual is retained by JPMorgan Chase Bank, N.A. Customer TOB trusts are sponsored by a third party; refer to page 101 on this Note for further information. JPMorgan Chase Bank, N.A. serves as sponsor for all non-customer TOB transactions. JPMorgan Chase Bank, N.A. may provide various services to a TOB trust, including liquidity or tender option provider, and/or sponsor.

JPMorgan Chase Bank, N.A. often serves as the sole liquidity or tender option provider for the TOB trusts. The liquidity provider's obligation to perform is conditional and is limited by certain events ("Termination Events"), which include bankruptcy or failure to pay by the municipal bond issuer or credit enhancement provider, an event of taxability on the municipal bonds or the immediate downgrade of the municipal bond to below investment grade. In addition, the liquidity provider's exposure is typically further limited by the high credit quality of the underlying municipal bonds, the excess collateralization in the vehicle, or, in certain transactions, the reimbursement agreements with the Residual holders.

Holders of the floaters may "put," or tender, their floaters to the TOB trust. If the remarketing agent cannot successfully remarket the floaters to another investor, the liquidity provider either provides a loan to the TOB trust for the TOB trust's purchase of the floaters, or it directly purchases the tendered floaters.

TOB trusts are considered to be variable interest entities. JPMorgan Chase Bank, N.A. consolidates Non-Customer TOB trusts because as the Residual holder, JPMorgan Chase Bank, N.A. has the right to make decisions that significantly impact the economic performance of the municipal bond vehicle, and it has the right to receive benefits and bear losses that could potentially be significant to the municipal bond vehicle.

Consolidated VIE assets and liabilities

The following table presents information on assets and liabilities related to VIEs consolidated by JPMorgan Chase Bank, N.A. as of December 31, 2018 and 2017.

	Assets				Liabilities		
December 31, 2018 (in millions)	Trading assets	Loans	Other(b)	Total assets(c)	Beneficial interests in VIE assets(d)	Other(e)	Total liabilities
VIE program type							
JPMorgan Chase Bank, N.A.-sponsored credit card trusts	**$ —**	**$ 31,760**	**$ 491**	**$ 32,251**	**$ 13,437**	**$ 12**	**$ 13,449**
JPMorgan Chase Bank, N.A.-administered multi-seller conduits	**—**	**24,411**	**300**	**24,711**	**4,842**	**57**	**4,899**
Municipal bond vehicles	**1,779**	**—**	**4**	**1,783**	**1,749**	**3**	**1,752**
Mortgage securitization entities(a)	**—**	**3,285**	**40**	**3,325**	**281**	**160**	**441**
Other	**131**	**—**	**—**	**131**	**1**	**—**	**1**
Total	**$ 1,910**	**$ 59,456**	**$ 835**	**$ 62,201**	**$ 20,310**	**$ 232**	**$ 20,542**

	Assets				Liabilities		
December 31, 2017 (in millions)	Trading assets	Loans	Other(b)	Total assets(c)	Beneficial interests in VIE assets(d)	Other(e)	Total liabilities
VIE program type							
JPMorgan Chase Bank, N.A.-sponsored credit card trusts	$ —	$ 41,923	$ 652	$ 42,575	$ 21,278	$ 16	$ 21,294
JPMorgan Chase Bank, N.A.-administered multi-seller conduits	—	23,411	48	23,459	3,045	53	3,098
Municipal bond vehicles	1,278	—	3	1,281	1,360	2	1,362
Mortgage securitization entities(a)	—	3,661	55	3,716	314	199	513
Other	102	—	1,592	1,694	134	—	134
Total	$ 1,380	$ 68,995	$ 2,350	$ 72,725	$ 26,131	$ 270	$ 26,401

(a) Includes residential and commercial mortgage securitizations.
(b) Includes assets classified as cash and other assets on the Consolidated balance sheets.
(c) The assets of the consolidated VIEs included in the program types above are used to settle the liabilities of those entities. The assets and liabilities include third-party assets and liabilities of consolidated VIEs and exclude intercompany balances that eliminate in consolidation.
(d) The interest-bearing beneficial interest liabilities issued by consolidated VIEs are classified in the line item on the Consolidated balance sheets titled, "Beneficial interests issued by consolidated variable interest entities." The holders of these beneficial interests generally do not have recourse to the general credit of JPMorgan Chase Bank, N.A. Included in beneficial interests in VIE assets are long-term beneficial interests of $13.7 billion and $21.8 billion at December 31, 2018 and 2017, respectively. For additional information on interest-bearing long-term beneficial interests, refer to Note 19.
(e) Includes liabilities classified as accounts payable and other liabilities on the Consolidated balance sheets.

VIEs sponsored by third parties

JPMorgan Chase Bank, N.A. enters into transactions with VIEs structured by other parties. These include, for example, acting as a derivative counterparty, liquidity provider, investor, underwriter, placement agent, remarketing agent, trustee or custodian. These transactions are conducted at arm's-length, and individual credit decisions are based on the analysis of the specific VIE, taking into consideration the quality of the underlying assets. Where JPMorgan Chase Bank, N.A. does not have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance, or a variable interest that could potentially be significant, JPMorgan Chase Bank, N.A. generally does not consolidate the VIE, but it records and reports these positions on its Consolidated balance sheets in the same manner it would record and report positions in respect of any other third-party transaction.

Tax credit vehicles

JPMorgan Chase Bank, N.A. holds investments in unconsolidated tax credit vehicles, which are limited partnerships and similar entities that construct, own and operate affordable housing, alternative energy, and other projects. These entities are primarily considered VIEs. A third party is typically the general partner or managing member and has control over the significant activities of the tax credit vehicles, and accordingly JPMorgan Chase Bank, N.A. does not consolidate tax credit vehicles. JPMorgan Chase Bank, N.A. generally invests in these partnerships as a limited partner and earns a return primarily through the receipt of tax credits allocated to the projects. The maximum loss exposure, represented by equity investments and funding commitments, was $7.9 billion and $7.8 billion, of which $2.3 billion and $2.4 billion was unfunded at December 31, 2018 and 2017, respectively. In order to reduce the risk of loss, JPMorgan Chase Bank, N.A. assesses each project and withholds varying amounts of its capital investment until the project qualifies for tax credits. Refer to Note 22 for further information on affordable housing tax credits. For more information on off-balance sheet lending-related commitments, refer to Note 25.

Customer municipal bond vehicles (TOB trusts)

JPMorgan Chase Bank, N.A. may provide various services to Customer TOB trusts, including remarketing agent, liquidity or tender option provider. In certain Customer TOB transactions, JPMorgan Chase Bank, N.A. as liquidity provider, has entered into a reimbursement agreement with the Residual holder. In those transactions, upon the termination of the vehicle, JPMorgan Chase Bank, N.A. has recourse to the third-party Residual holders for any shortfall. JPMorgan Chase Bank, N.A. does not have any intent to protect Residual holders from potential losses on any of the underlying municipal bonds. JPMorgan Chase Bank, N.A. does not consolidate Customer TOB trusts, since JPMorgan Chase Bank, N.A. does not have the power to make decisions that significantly impact the economic performance of the municipal bond vehicle. JPMorgan Chase Bank, N.A. maximum exposure as a liquidity provider to Customer TOB trusts at December 31, 2018 and 2017, was $4.8 billion and $5.3 billion, respectively. The fair value of assets held by such VIEs at December 31, 2018 and 2017 was $7.7 billion and $9.0 billion, respectively. For more information on off-balance sheet lending-related commitments, refer to Note 25.

Loan securitizations

JPMorgan Chase Bank, N.A. has securitized and sold a variety of loans, including residential mortgage, credit card, and commercial mortgage. The purposes of these securitization transactions were to satisfy investor demand and to generate liquidity for JPMorgan Chase Bank, N.A.

For loan securitizations in which JPMorgan Chase Bank, N.A. is not required to consolidate the trust, JPMorgan Chase Bank, N.A. records the transfer of the loan receivable to the trust as a sale when all of the following accounting criteria for a sale are met: (1) the transferred financial assets are legally isolated from JPMorgan Chase Bank, N.A.'s creditors; (2) the transferee or beneficial interest holder can pledge or exchange the transferred financial assets; and (3) JPMorgan Chase Bank, N.A. does not maintain effective control over the transferred financial assets (e.g., JPMorgan Chase Bank, N.A. cannot repurchase the transferred assets before their maturity and it does not have the ability to unilaterally cause the holder to return the transferred assets).

For loan securitizations accounted for as a sale, JPMorgan Chase Bank, N.A. recognizes a gain or loss based on the difference between the value of proceeds received (including cash, beneficial interests, or servicing assets received) and the carrying value of the assets sold. Gains and losses on securitizations are reported in noninterest revenue.

Securitization activity

The following table provides information related to JPMorgan Chase Bank, N.A.'s securitization activities for the years ended December 31, 2018 and 2017, related to assets held in JPMorgan Chase Bank, N.A.-sponsored securitization entities that were not consolidated by JPMorgan Chase Bank, N.A., and where sale accounting was achieved at the time of the securitization.

	2018			2017		
Year ended December 31, (in millions)	Credit card	Residential mortgage[c]	Commercial and other[d]	Credit card	Residential mortgage[c]	Commercial and other[d]
Principal securitized	**$ –**	**$ 6,431**	**$ 10,159**	$ –	$ 5,532	$ 10,252
All cash flows during the period:						
Proceeds received from loan sales as cash or financial instruments[a]	**$ –**	**$ 6,449**	**$ 10,218**	$ –	$ 5,661	$ 10,337
Servicing fees collected	**–**	**319**	**2**	–	338	2
Proceeds from collections reinvested in revolving securitizations	**–**	**–**	**–**	–	–	–
Purchases of previously transferred financial assets (or the underlying collateral)[b]	**–**	**–**	**–**	–	1	–
Cash flows received on interests	**–**	**273**	**155**	–	383	632

(a) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale. The proceeds received were primarily cash.
(b) Includes cash paid by JPMorgan Chase Bank, N.A. to reacquire assets from nonconsolidated entities – for example, loan repurchases due to representation and warranties and servicer "clean-up calls".
(c) Includes prime mortgages only. Excludes certain loan securitization transactions entered into with Ginnie Mae, Fannie Mae and Freddie Mac.
(d) Includes commercial mortgage and other consumer loans.

Key assumptions used to value retained interests originated during the year are shown in the table below.

Year ended December 31,	2018	2017
Residential mortgage retained interest:		
Weighted-average life (in years)	**6.7**	3.8
Weighted-average discount rate	**4.7%**	3.0%
Commercial mortgage retained interest:		
Weighted-average life (in years)	**4.2**	5.3
Weighted-average discount rate	**3.7%**	4.7%

Loans and excess MSRs sold to U.S. government-sponsored enterprises, loans in securitization transactions pursuant to Ginnie Mae guidelines, and other third-party-sponsored securitization entities

In addition to the amounts reported in the securitization activity tables above, JPMorgan Chase Bank, N.A., in the normal course of business, sells originated and purchased mortgage loans and certain originated excess MSRs on a nonrecourse basis, predominantly to U.S. government-sponsored enterprises ("U.S. GSEs"). These loans and excess MSRs are sold primarily for the purpose of securitization by the U.S. GSEs, who provide certain guarantee provisions (e.g., credit enhancement of the loans). JPMorgan Chase Bank, N.A. also sells loans into securitization transactions pursuant to Ginnie Mae guidelines; these loans are typically insured or guaranteed by another U.S. government agency. JPMorgan Chase Bank, N.A. does not consolidate the securitization vehicles underlying these transactions as it is not the primary beneficiary. For a limited number of loan sales, JPMorgan Chase Bank, N.A. is obligated to share a portion of the credit risk associated with the sold loans with the purchaser. Refer to Note 25 for additional information about JPMorgan Chase Bank, N.A.'s loan sales and securitization-related indemnifications. Refer to Note 16 for additional information about the impact of JPMorgan Chase Bank, N.A.'s sale of certain excess MSRs.

The following table summarizes the activities related to loans sold to the U.S. GSEs, loans in securitization transactions pursuant to Ginnie Mae guidelines, and other third-party-sponsored securitization entities.

Year ended December 31, (in millions)	2018	2017
Carrying value of loans sold	$ 44,609	$ 64,542
Proceeds received from loan sales as cash	$ 9	$ 117
Proceeds from loans sales as securities[(a)]	43,671	63,542
Total proceeds received from loan sales[(b)]	$ 43,680	$ 63,659
Gains/(losses) on loan sales[(c)(d)]	$ (93)	$ 163

(a) Predominantly includes securities from U.S. GSEs and Ginnie Mae that are generally sold shortly after receipt.
(b) Excludes the value of MSRs retained upon the sale of loans.
(c) Gains/(losses) on loan sales include the value of MSRs.
(d) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale.

Options to repurchase delinquent loans

In addition to JPMorgan Chase Bank, N.A.'s obligation to repurchase certain loans due to material breaches of representations and warranties as discussed in Note 25. JPMorgan Chase Bank, N.A. also has the option to repurchase delinquent loans that it services for Ginnie Mae loan pools, as well as for other U.S. government agencies under certain arrangements. JPMorgan Chase Bank, N.A. typically elects to repurchase delinquent loans from Ginnie Mae loan pools as it continues to service them and/or manage the foreclosure process in accordance with the applicable requirements, and such loans continue to be insured or guaranteed. When JPMorgan Chase Bank, N.A.'s repurchase option becomes exercisable, such loans must be reported on the Consolidated balance sheets as a loan with a corresponding liability. For additional information, refer to Note 13.

The following table presents loans JPMorgan Chase Bank, N.A. repurchased or had an option to repurchase, real estate owned, and foreclosed government-guaranteed residential mortgage loans recognized on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets as of December 31, 2018 and 2017. Substantially all of these loans and real estate are insured or guaranteed by U.S. government agencies.

December 31, (in millions)	2018	2017
Loans repurchased or option to repurchase[(a)]	$ 7,010	$ 8,617
Real estate owned	75	95
Foreclosed government-guaranteed residential mortgage loans[(b)]	361	527

(a) Predominantly all of these amounts relate to loans that have been repurchased from Ginnie Mae loan pools.
(b) Relates to voluntary repurchases of loans, which are included in accrued interest and accounts receivable.

Loan delinquencies and liquidation losses

The table below includes information about components of nonconsolidated securitized financial assets held in JPMorgan Chase Bank, N.A.-sponsored private-label securitization entities, in which JPMorgan Chase Bank, N.A. has continuing involvement, and delinquencies as of December 31, 2018 and 2017.

	Securitized assets		90 days past due		Net liquidation losses[(a)]	
As of or for the year ended December 31, (in millions)	2018	2017	2018	2017	2018	2017
Securitized loans						
Residential mortgage:						
Prime/ Alt-A & option ARMs	$ 36,731	$ 39,370	$ 2,253	$ 3,178	$ 365	$ 479
Subprime	10,605	11,978	1,567	2,070	(374)	418
Commercial and other	24,580	23,604	26	78	—	1
Total loans securitized	$ 71,916	$ 74,952	$ 3,846	$ 5,326	$ (9)	$ 898

(a) Includes liquidation gains as a result of private label mortgage settlement payments during the first half of 2018, which were reflected as asset recoveries by trustees.

Note 16 – Goodwill and Mortgage servicing rights

Goodwill

Goodwill is recorded upon completion of a business combination as the difference between the purchase price and the fair value of the net assets acquired. Subsequent to initial recognition, goodwill is not amortized but is tested for impairment during the fourth quarter of each fiscal year, or more often if events or circumstances, such as adverse changes in the business climate, indicate there may be impairment.

The following table presents changes in the carrying amount of goodwill.

Year ended December 31, (in millions)	2018	2017
Balance at beginning of period[(a)]	$ 39,746	$ 39,527
Changes during the period from:		
Business combinations[(b)]	–	199
Other[(c)]	(36)	20
Balance at December 31,[(a)]	**$ 39,710**	$ 39,746

(a) Reflects gross goodwill balances as JPMorgan Chase Bank, N.A. has not recognized any impairment losses to date.
(b) For 2017, represents consumer & community banking business goodwill in connection with an acquisition.
(c) Includes foreign currency translation adjustments and other tax-related adjustments.

Goodwill Impairment testing

Goodwill was not impaired at December 31, 2018 and 2017.

The goodwill impairment test is performed in two steps. In the first step, the current fair value of JPMorgan Chase Bank, N.A. is compared with its carrying value. If the fair value is in excess of the carrying value, then the goodwill is considered not to be impaired. If the fair value is less than the carrying value, then a second step is performed. In the second step, the implied current fair value of the goodwill is determined by comparing the fair value of JPMorgan Chase Bank, N.A. (as determined in step one) to the fair value of the net assets of JPMorgan Chase Bank, N.A. as if it was being acquired in a business combination. The resulting implied current fair value of goodwill is then compared with the carrying value of JPMorgan Chase Bank, N.A.'s goodwill. If the carrying value of the goodwill exceeds its implied current fair value, then an impairment charge is recognized for the excess. If the carrying value of goodwill is less than its implied current fair value, then no goodwill impairment is recognized.

Declines in business performance, increases in credit losses, increases in capital requirements, as well as deterioration in economic or market conditions, adverse regulatory or legislative changes or increases in the estimated market cost of equity, could cause the estimated fair values of JPMorgan Chase Bank, N.A.'s, or its associated goodwill to decline in the future, which could result in a material impairment charge to earnings in a future period related to some portion of the associated goodwill.

Mortgage servicing rights

MSRs represent the fair value of expected future cash flows for performing servicing activities for others. The fair value considers estimated future servicing fees and ancillary revenue, offset by estimated costs to service the loans, and generally declines over time as net servicing cash flows are received, effectively amortizing the MSR asset against contractual servicing and ancillary fee income. MSRs are either purchased from third parties or recognized upon sale or securitization of mortgage loans if servicing is retained.

As permitted by U.S. GAAP, JPMorgan Chase Bank, N.A. has elected to account for its MSRs at fair value. JPMorgan Chase Bank, N.A. treats its MSRs as a single class of servicing assets based on the availability of market inputs used to measure the fair value of its MSR asset and its treatment of MSRs as one aggregate pool for risk management purposes. JPMorgan Chase Bank, N.A. estimates the fair value of MSRs using an option-adjusted spread ("OAS") model, which projects MSR cash flows over multiple interest rate scenarios in conjunction with JPMorgan Chase Bank, N.A.'s prepayment model, and then discounts these cash flows at risk-adjusted rates. The model considers portfolio characteristics, contractually specified servicing fees, prepayment assumptions, delinquency rates, costs to service, late charges and other ancillary revenue, and other economic factors. JPMorgan Chase Bank, N.A. compares fair value estimates and assumptions to observable market data where available, and also considers recent market activity and actual portfolio experience.

The fair value of MSRs is sensitive to changes in interest rates, including their effect on prepayment speeds. MSRs typically decrease in value when interest rates decline because declining interest rates tend to increase prepayments and therefore reduce the expected life of the net servicing cash flows that comprise the MSR asset. Conversely, securities (e.g., mortgage-backed securities), principal-only certificates and certain derivatives (i.e., those for which JPMorgan Chase Bank, N.A. receives fixed-rate interest payments) increase in value when interest rates decline. JPMorgan Chase Bank, N.A. uses combinations of derivatives and securities to manage the risk of changes in the fair value of MSRs. The intent is to offset any interest-rate related changes in the fair value of MSRs with changes in the fair value of the related risk management instruments.

The following table summarizes MSR activity for the years ended December 31, 2018 and 2017.

As of or for the year ended December 31, (in millions, except where otherwise noted)	2018	2017
Fair value at beginning of period	$ 6,030	$ 6,096
MSR activity:		
Originations of MSRs	931	1,103
Purchase of MSRs	315	–
Disposition of MSRs[(a)]	(636)	(140)
Net additions	610	963
Changes due to collection/realization of expected cash flows	(740)	(797)
Changes in valuation due to inputs and assumptions:		
Changes due to market interest rates and other[(b)]	300	(202)
Changes in valuation due to other inputs and assumptions:		
Projected cash flows (e.g., cost to service)	15	(102)
Discount rates	24	(19)
Prepayment model changes and other[(c)]	(109)	91
Total changes in valuation due to other inputs and assumptions	(70)	(30)
Total changes in valuation due to inputs and assumptions	230	(232)
Fair value at December 31,	$ 6,130	$ 6,030
Change in unrealized gains/(losses) included in income related to MSRs held at December 31,	$ 230	$ (232)
Contractual service fees, late fees and other ancillary fees included in income	1,778	1,886
Third-party mortgage loans serviced at December 31, (in billions)	521.0	555.0
Servicer advances, net of an allowance for uncollectible amounts, at December 31, (in billions)[(d)]	3.0	4.0

(a) Includes excess MSRs transferred to agency-sponsored trusts in exchange for stripped mortgage backed securities ("SMBS"). In each transaction, a portion of the SMBS was acquired by third parties at the transaction date; JPMorgan Chase Bank, N.A. acquired the remaining balance of those SMBS as trading securities.
(b) Represents both the impact of changes in estimated future prepayments due to changes in market interest rates, and the difference between actual and expected prepayments.
(c) Represents changes in prepayments other than those attributable to changes in market interest rates.
(d) Represents amounts JPMorgan Chase Bank, N.A. pays as the servicer (e.g., scheduled principal and interest, taxes and insurance), which will generally be reimbursed within a short period of time after the advance from future cash flows from the trust or the underlying loans. JPMorgan Chase Bank, N.A.'s credit risk associated with these servicer advances is minimal because reimbursement of the advances is typically senior to all cash payments to investors. In addition, JPMorgan Chase Bank, N.A. maintains the right to stop payment to investors if the collateral is insufficient to cover the advance. However, certain of these servicer advances may not be recoverable if they were not made in accordance with applicable rules and agreements.

The table below outlines the key economic assumptions used to determine the fair value of JPMorgan Chase Bank, N.A.'s MSRs at December 31, 2018 and 2017, and outlines the sensitivities of those fair values to immediate adverse changes in those assumptions, as defined below.

December 31, (in millions, except rates)	2018	2017
Weighted-average prepayment speed assumption (constant prepayment rate)	8.78%	9.35%
Impact on fair value of 10% adverse change	$ (205)	$ (221)
Impact on fair value of 20% adverse change	(397)	(427)
Weighted-average option adjusted spread	7.87%	8.36%
Impact on fair value of 100 basis points adverse change	$ (235)	$ (250)
Impact on fair value of 200 basis points adverse change	(452)	(481)

Changes in fair value based on variations in assumptions generally cannot be easily extrapolated, because the relationship of the change in the assumptions to the change in fair value are often highly interrelated and may not be linear. In this table, the effect that a change in a particular assumption may have on the fair value is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which would either magnify or counteract the impact of the initial change.

Note 17 – Premises and equipment

Premises and equipment, including leasehold improvements, are carried at cost less accumulated depreciation and amortization. JPMorgan Chase Bank, N.A. computes depreciation using the straight-line method over the estimated useful life of an asset. For leasehold improvements, JPMorgan Chase Bank, N.A. uses the straight-line method computed over the lesser of the remaining term of the leased facility or the estimated useful life of the leased asset.

JPMorgan Chase Bank, N.A. capitalizes certain costs associated with the acquisition or development of internal-use software. Once the software is ready for its intended use, these costs are amortized on a straight-line basis over the software's expected useful life and reviewed for impairment on an ongoing basis.

Note 18 – Deposits

At December 31, 2018 and 2017, noninterest-bearing and interest-bearing deposits were as follows.

December 31, (in millions)	2018	2017
U.S. offices		
Noninterest-bearing	**$ 372,434**	$ 396,984
Interest-bearing (included **$19,845** and $15,006 at fair value)[(a)]	**908,152**	875,547
Total deposits in U.S. offices	**1,280,586**	1,272,531
Non-U.S. offices		
Noninterest-bearing	**20,364**	16,282
Interest-bearing (included **$3,526** and $6,374 at fair value)[(a)]	**256,461**	246,738
Total deposits in non-U.S. offices	**276,825**	263,020
Total deposits	**$ 1,557,411**	$1,535,551

(a) Includes structured notes classified as deposits for which the fair value option has been elected. For further discussion, refer to Note 4.

At December 31, 2018 and 2017, time deposits in denominations of $250,000 or more were as follows.

December 31, (in millions)	2018	2017
U.S. offices	**$ 36,271**	$ 41,777
Non-U.S. offices	**42,687**	30,103
Total	**$ 78,958**	$ 71,880

At December 31, 2018, the maturities of interest-bearing time deposits were as follows.

December 31, 2018 (in millions)	U.S.	Non-U.S.	**Total**
2019	$ 32,224	$ 41,280	$ 73,504
2020	17,092	233	17,325
2021	5,258	19	5,277
2022	2,896	178	3,074
2023	1,726	382	2,108
After 5 years	3,527	2,023	5,550
Total	$ 62,723	$ 44,115	$ 106,838

Note 19 – Long-term debt

JPMorgan Chase Bank, N.A. issues long-term debt denominated in various currencies, predominantly U.S. dollars, with both fixed and variable interest rates. Included in senior and subordinated debt below are various equity-linked or other indexed instruments, which JPMorgan Chase Bank, N.A. has elected to measure at fair value. Changes in fair value are recorded in principal transactions revenue in the Consolidated statements of income, except for unrealized gains/(losses) due to DVA which are recorded in OCI. The following table is a summary of long-term debt carrying values (including unamortized premiums and discounts, issuance costs, valuation adjustments and fair value adjustments, where applicable) by remaining contractual maturity as of December 31, 2018.

By remaining maturity at December 31, (in millions, except rates)		2018				2017
		Under 1 year	1-5 years	After 5 years	**Total**	Total
Long-term debt payable to JPMorgan Chase & Co. and affiliates						
Senior debt:	Fixed rate	**$ –**	**$ –**	**$ –**	**$ –**	$ 3
	Variable rate	**164**	**20,263**	**46**	**20,473**	20,731
	Interest rates[a]	**–%**	**2.99%**	**–%**	**2.99%**	1.71%
Subordinated debt:	Variable rate	**$ –**	**$ –**	**$ 3,500**	**$ 3,500**	$ 4,650
	Interest rates[a]	**–%**	**–%**	**3.18-3.69%**	**3.18-3.69%**	2.00-2.63%
	Subtotal	**$ 164**	**$ 20,263**	**$ 3,546**	**$ 23,973**	$ 25,384
Long-term debt issued to unrelated parties						
Federal Home Loan Banks ("FHLB") advances:	Fixed rate	**$ 12**	**$ 25**	**$ 118**	**$ 155**	$ 168
	Variable rate	**11,000**	**29,300**	**4,000**	**44,300**	60,450
	Interest rates[a]	**2.58-2.95%**	**2.36-2.96%**	**2.43-2.52%**	**2.36-2.96%**	1.18-2.00%
Senior debt:	Fixed rate	**$ 1,550**	**$ 6,424**	**$ 8,444**	**$ 16,418**	$ 11,959
	Variable rate	**3,457**	**15,711**	**5,921**	**25,089**	18,799
	Interest rates[a]	**1.65-7.50%**	**2.60-7.50%**	**1.00-7.50%**	**1.00-7.50%**	0.22-7.50%
Subordinated debt:	Fixed rate	**$ –**	**$ –**	**$ 301**	**$ 301**	$ 313
	Variable rate	**–**	**–**	**–**	**–**	–
	Interest rates[a]	**–%**	**–%**	**8.25%**	**8.25%**	8.25%
	Subtotal	**$ 16,019**	**$ 51,460**	**$ 18,784**	**$ 86,263**	$ 91,689
Total long-term debt[b][c][d]		**$ 16,183**	**$ 71,723**	**$ 22,330**	**$ 110,236** [f][g]	$ 117,073
Long-term beneficial interests:						
	Fixed rate	**$ 4,648**	**$ 2,996**	**$ –**	**$ 7,644**	$ 13,579
	Variable rate	**2,324**	**3,469**	**281**	**6,074**	8,147
	Interest rates	**1.27-2.87%**	**1.49-3.01%**	**2.50-3.75%**	**1.27-3.75%**	1.10-3.75%
Total long-term beneficial interests[e]		**$ 6,972**	**$ 6,465**	**$ 281**	**$ 13,718**	$ 21,726

(a) The interest rates shown are the range of contractual rates in effect at December 31, 2018 and 2017, respectively, including non-U.S. dollar fixed- and variable-rate issuances, which excludes the effects of the associated derivative instruments used in hedge accounting relationships, if applicable. The use of these derivative instruments modifies JPMorgan Chase Bank, N.A.'s exposure to the contractual interest rates disclosed in the table above. Including the effects of the hedge accounting derivatives, the range of modified rates in effect at December 31, 2018, for total long-term debt was 1.00% to 7.50%, versus the contractual range of 1.00% to 8.25% presented in the table above. The interest rate ranges shown exclude structured notes accounted for at fair value.

(b) Included long-term debt of $47.7 billion and $63.5 billion secured by assets totaling $207.0 billion and $208.4 billion at December 31, 2018 and 2017, respectively. The amount of long-term debt secured by assets does not include amounts related to hybrid instruments.

(c) Included $26.6 billion and $21.4 billion of long-term debt accounted for at fair value at December 31, 2018 and 2017, respectively.

(d) Included $2.7 billion and $2.1 billion of outstanding zero-coupon notes at December 31, 2018 and 2017, respectively. The aggregate principal amount of these notes at their respective maturities is $5.5 billion and $4.3 billion, respectively. The aggregate principal amount reflects the contractual principal payment at maturity, which may exceed the contractual principal payment at JPMorgan Chase Bank, N.A.'s next call date, if applicable.

(e) Included on the Consolidated balance sheets in beneficial interests issued by consolidated VIEs. Excluded short-term commercial paper and other short-term beneficial interests of $6.6 billion and $4.4 billion at December 31, 2018 and 2017, respectively.

(f) At December 31, 2018, long-term debt in the aggregate of $50.3 billion was redeemable at the option of JPMorgan Chase Bank, N.A., in whole or in part, prior to maturity, based on the terms specified in the respective instruments.

(g) The aggregate carrying values of debt that matures in each of the five years subsequent to 2018 is $16.2 billion in 2019, $42.2 billion in 2020, $18.3 billion in 2021, $2.5 billion in 2022 and $8.7 billion in 2023.

The weighted-average contractual interest rates for total long-term debt excluding structured notes accounted for at fair value were 2.85% and 1.70% as of December 31, 2018 and 2017, respectively. In order to modify exposure to interest rate movements, JPMorgan Chase Bank, N.A. utilizes derivative instruments, primarily interest rate swaps, in conjunction with some of its debt issuances. The use of these instruments modifies JPMorgan Chase Bank, N.A.'s interest expense on the associated debt. The modified weighted-average interest rates for total long-term debt, including the effects of related derivative instruments, were 2.85% and 1.70% as of December 31, 2018 and 2017, respectively.

JPMorgan Chase Bank, N.A's unsecured debt does not contain requirements that would call for an acceleration of payments, maturities or changes in the structure of the existing debt, provide any limitations on future borrowings or require additional collateral, based on unfavorable changes in JPMorgan Chase Bank, N.A's credit ratings, financial ratios or earnings.

Note 20 – Related party transactions

JPMorgan Chase Bank, N.A. regularly enters into transactions with JPMorgan Chase and its various subsidiaries.

Significant revenue- and expense-related transactions with these related parties are listed below.

Year ended December 31, (in millions)	2018	2017
Interest income	$ 911	$ 358
Interest expense	2,498	1,478
Net interest income	(1,587)	(1,120)
Noninterest revenue		
Principal transactions	415	1,871
All other income	4,624	4,220
Total noninterest revenue	5,039	6,091
Noninterest expense[(a)]	4,938	4,305

Significant balances with these related parties are listed below.

December 31, (in millions)	2018	2017
Assets		
Federal funds sold and securities purchased under resale agreements	$ 92,313	$ 41,014
Accrued interest and accounts receivable	16,267	13,367
All other assets	4,546	6,944
Liabilities		
Deposits[(b)]	86,651	91,524
Federal funds purchased and securities loaned or sold under repurchase agreements	52,823	18,993
Accounts payable and other liabilities	10,612	11,038
Long-term debt	23,973	25,378

(a) Includes fees incurred for services provided by affiliates of $1.9 billion and $1.6 billion for the years ended December 31, 2018 and 2017.
(b) At both December 31, 2018 and 2017, included $20.2 billion that was pledged to support extensions of credit and other transactions requiring collateral with affiliates as defined by Section 23A under the Federal Reserve Act, which defines the constraints that apply to U.S. banks in certain of their interactions with affiliates.

Derivative transactions

In addition to the information presented in the tables above, JPMorgan Chase Bank, N.A. executes derivative transactions with affiliates as part of its client driven market-making activities and to facilitate hedging certain risks for its affiliates. To accomplish this, JPMorgan Chase Bank, N.A. enters into substantially offsetting derivative transactions with third-parties and records both the third party and related-party gains and losses in principal transactions revenue. The following table summarizes information on derivative receivables and payables with affiliates before and after netting adjustments for legally enforceable master netting agreements as of December 31, 2018 and December 31, 2017.

	2018		2017	
December 31, (in millions)	Gross derivative receivable/payable	Net derivative receivable/payable	Gross derivative receivable/payable	Net derivative receivable/payable
Derivative receivables from affiliates	**$ 44,162**	**$ 331**	$ 48,110	$ 140
Derivative payables to affiliates	**42,131**	**124**	48,038	18

Servicing agreements and fee arrangements

Through servicing agreements, JPMorgan Chase Bank, N.A. provides and receives operational support and services to and from JPMorgan Chase and its subsidiaries. These servicing agreements cover certain occupancy, marketing, communication and technology services, and other shared corporate service costs. JPMorgan Chase Bank, N.A. is allocated or allocates a share of the cost of the services over the relevant service period based on the agreed methodology. Fees earned by JPMorgan Chase Bank, N.A. for services provided to affiliates are recorded in all other income, and fees incurred by JPMorgan Chase Bank, N.A. for services from affiliates are recorded in noninterest expense.

Note 21 – Accumulated other comprehensive income/(loss)

AOCI includes the after-tax change in unrealized gains and losses on investment securities, foreign currency translation adjustments (including the impact of related derivatives), fair value changes of excluded components on fair value hedges, cash flow hedging activities, and net loss and prior service costs/(credit) related to JPMorgan Chase Bank, N.A.'s defined benefit pension and OPEB plans.

(in millions)	Unrealized gains/(losses) on investment securities	Translation adjustments, net of hedges	Fair value hedges[(b)]	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at January 1, 2017	$ 1,396	$ (36)	NA	$ (100)	$ (355)	$ (40)	$ 865
Net change	687	(309)	NA	176	11	(55)	510
Balance at December 31, 2017	$ 2,083	$ (345)	$ –	$ 76	$ (344)	$ (95)	$ 1,375
Cumulative effect of changes in accounting principles[(a)]:							
Premium amortization on purchased callable debt securities	252	–	–	–	–	–	252
Hedge accounting	169	–	(1)	–	–	–	168
Reclassification of certain tax effects from AOCI	449	(193)	–	16	(65)	(21)	186
Net change	**(1,806)**	**57**	**1**	**(198)**	**(1,969)**	**321**	**(3,594)**
Balance at December 31, 2018	**$ 1,147**	**$ (481)**	**$ –**	**$ (106)**	**$ (2,378)**	**$ 205**	**$ (1,613)**

(a) Represents the adjustment to AOCI as a result of the new accounting standards adopted January 1, 2018. For additional information, refer to Note 1.
(b) Represents changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads, which are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income. The initial cost of cross-currency basis spreads is recognized in earnings as part of the accrual of interest on the cross currency swap.

The following table presents the pre-tax and after-tax changes in the components of OCI.

Year ended December 31, (in millions)	2018 Pretax	2018 Tax effect	2018 After-tax	2017 Pretax	2017 Tax effect	2017 After-tax
Unrealized gains/(losses) on investment securities:						
Net unrealized gains/(losses) arising during the period	**$(2,757)**	**$ 649**	**$(2,108)**	$ 1,012	$ (371)	$ 641
Reclassification adjustment for realized losses included in net income[(a)]	**395**	**(93)**	**302**	73	(27)	46
Net change	**(2,362)**	**556**	**(1,806)**	1,085	(398)	687
Translation adjustments[(b)]:						
Translation	**(797)**	**118**	**(679)**	844	(616)	228
Hedges	**964**	**(228)**	**736**	(847)	310	(537)
Net change	**167**	**(110)**	**57**	(3)	(306)	(309)
Fair value hedges, net change[(c)]:	**1**	**–**	**1**	NA	NA	NA
Cash flow hedges:						
Net unrealized gains/(losses) arising during the period	**(243)**	**58**	**(185)**	147	(55)	92
Reclassification adjustment for realized (gains)/losses included in net income[(d)]	**(17)**	**4**	**(13)**	134	(50)	84
Net change	**(260)**	**62**	**(198)**	281	(105)	176
Defined benefit pension and OPEB plans:						
Transfer from JPMorgan Chase	**(2,123)**	**500**	**(1,623)**	–	–	–
Prior service credit/(cost) arising during the period	**(29)**	**7**	**(22)**	–	–	–
Net gain/(loss) arising during the period	**(500)**	**120**	**(380)**	38	(14)	24
Reclassification adjustments included in net income[(e)]:						
Amortization of net loss	**99**	**(20)**	**79**	34	(12)	22
Amortization of prior service cost/(credit)	**(23)**	**5**	**(18)**	(2)	1	(1)
Curtailment (gain)/loss	**21**	**(5)**	**16**	–	–	–
Settlement (gain)/loss	**2**	**–**	**2**	2	(1)	1
Foreign exchange and other	**(26)**	**3**	**(23)**	(52)	17	(35)
Net change	**(2,579)**	**610**	**(1,969)**	20	(9)	11
DVA on fair value option elected liabilities, net change:	**$ 419**	**$ (98)**	**$ 321**	$ (86)	$ 31	$ (55)
Total other comprehensive income/(loss)	**$(4,614)**	**$ 1,020**	**$(3,594)**	$ 1,297	$ (787)	$ 510

(a) The pre-tax amount is reported in investment securities gains/(losses) in the Consolidated statements of income.

(b) Reclassifications of pre-tax realized gains/(losses) on translation adjustments and related hedges are reported in other income/expense in the Consolidated statements of income. During the year ended December 31, 2018, JPMorgan Chase Bank, N.A. reclassified a net pre-tax loss of $174 million to other expense related to the liquidation of certain legal entities, $23 million related to net investment hedge losses and $151 million related to cumulative translation adjustments. During the year ended December 31, 2017, the amount of such reclassifications were not material.

(c) Represents changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads, which are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income. The initial cost of cross-currency basis spreads is recognized in earnings as part of the accrual of interest on the cross-currency swap.

(d) The pre-tax amounts are predominantly recorded in noninterest revenue, net interest income and compensation expense in the Consolidated statements of income.

(e) The pre-tax amount is reported in other expense in the Consolidated statements of income.

Note 22 – Income taxes

The results of operations of JPMorgan Chase Bank, N.A. are included in the consolidated federal, New York State, New York City and other state income tax returns filed by JPMorgan Chase. Pursuant to a tax sharing agreement, JPMorgan Chase allocates to JPMorgan Chase Bank, N.A. its share of the consolidated income tax expense or benefit based upon statutory rates applied to JPMorgan Chase Bank, N.A.'s earnings as if it were filing separate income tax returns. Furthermore, JPMorgan Chase will reimburse JPMorgan Chase Bank, N.A. for losses irrespective of whether JPMorgan Chase Bank, N.A. would utilize losses on a separate return basis. JPMorgan Chase Bank, N.A. uses the separate return adjusted for benefits-for-loss allocation methodology to provide for income taxes on all transactions recorded in the Consolidated Financial Statements. Valuation allowances are established when necessary to reduce deferred tax assets to an amount that in the opinion of management, is more likely than not to be realized. State and local income taxes are provided on JPMorgan Chase Bank, N.A.'s taxable income at the effective income tax rate applicable to the consolidated JPMorgan Chase entity.

The tax sharing arrangement between JPMorgan Chase and JPMorgan Chase Bank, N.A. allows for intercompany payments to or from JPMorgan Chase for outstanding current tax assets or liabilities.

Due to the inherent complexities arising from the nature of JPMorgan Chase Bank, N.A.'s businesses, and from conducting business and being taxed in a substantial number of jurisdictions, significant judgments and estimates are required to be made. Agreement of tax liabilities between JPMorgan Chase Bank, N.A. and the many tax jurisdictions in which JPMorgan Chase Bank, N.A. files tax returns may not be finalized for several years. Thus, JPMorgan Chase Bank, N.A.'s final tax-related assets and liabilities may ultimately be different from those currently reported.

Effective tax rate and expense

A reconciliation of the applicable statutory U.S. federal income tax rate to the effective tax rate for each of the years ended December 31, 2018 and 2017, is presented in the following table.

Effective tax rate

Year ended December 31,	**2018**	2017
Statutory U.S. federal tax rate	**21.0%**	35.0%
Increase/(decrease) in tax rate resulting from:		
U.S. state and local income taxes, net of U.S. federal income tax benefit	**4.0**	2.0
Tax-exempt income	**(1.2)**	(2.8)
Non-U.S. subsidiary earnings	**0.7**	(2.0) (a)
Business tax credits	**(1.4)**	(2.1)
Impact of the TCJA	**(1.2)**	9.2
Other, net	**0.6**	(0.4)
Effective tax rate	**22.5%**	38.9%

(a) Predominantly includes earnings of U.K. subsidiaries that were deemed to be reinvested indefinitely through December 31, 2017.

Impact of the TCJA

2018

JPMorgan Chase Bank, N.A.'s effective tax rate decreased in 2018 due to the TCJA, including the reduction in the U.S. federal statutory income tax rate as well as a $443 million net tax benefit recorded in 2018 resulting from changes in the estimates related to the remeasurement of certain deferred taxes and the deemed repatriation tax on non-U.S. earnings. The change in estimate was recorded under SEC Staff Accounting Bulletin No. 118 ("SAB 118") and the accounting under SAB 118 is complete.

2017

JPMorgan Chase Bank, N.A.'s effective tax rate increased in 2017 driven by a $2.9 billion income tax expense representing the estimated impact of the enactment of the TCJA. The $2.9 billion tax expense was predominantly driven by a deemed repatriation of JPMorgan Chase Bank, N.A.'s unremitted non-U.S. earnings and adjustments to the value of certain tax-oriented investments partially offset by a benefit from the revaluation of JPMorgan Chase Bank, N.A.'s net deferred tax liability.

The deemed repatriation of JPMorgan Chase Bank, N.A.'s unremitted non-U.S. earnings is based on the post-1986 earnings and profits of each controlled foreign corporation. The calculation resulted in an estimated income tax expense of $3.9 billion. Furthermore, accounting for income taxes requires the remeasurement of certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future. JPMorgan Chase Bank, N.A. remeasured its deferred tax asset and liability balances in December of 2017 to the new statutory U.S. federal income tax rate of 21% as well as any federal benefit associated with state and local deferred income taxes. The remeasurement resulted in an estimated income tax benefit of $1.4 billion.

Adjustments were also recorded in 2017 to income tax expense for certain tax-oriented investments. These adjustments were due to changes to affordable housing proportional amortization resulting from the reduction of the federal income tax rate under the TCJA. SAB 118 did not apply to these adjustments.

The components of income tax expense/(benefit) included in the Consolidated statements of income were as follows for each of the years ended December 31, 2018 and 2017.

Income tax expense/(benefit)

Year ended December 31, (in millions)	2018	2017
Current income tax expense/(benefit)		
U.S. federal	**$ 3,481**	$ 9,611
Non-U.S.	**1,785**	2,151
U.S. state and local	**1,559**	818
Total current income tax expense/(benefit)	**6,825**	12,580
Deferred income tax expense/(benefit)		
U.S. federal	**1,316**	32
Non-U.S.	**(102)**	(146)
U.S. state and local	**386**	62
Total deferred income tax expense/(benefit)	**1,600**	(52)
Total income tax expense	**$ 8,425**	$ 12,528

Total income tax expense includes $11 million of tax expense and $199 million of tax benefits recorded in 2018 and 2017, respectively, as a result of tax audit resolutions.

Tax effect of items recorded in Stockholder's equity

The preceding table does not reflect the tax effect of certain items that are recorded each period directly in stockholder's equity. The tax effect of all items recorded directly to stockholder's equity resulted in an increase of $902 million in 2018 and a decrease of $785 million in 2017.

Results from U.S. and non-U.S. earnings

The following table presents the U.S. and non-U.S. components of income before income tax expense for the years ended December 31, 2018 and 2017.

Year ended December 31, (in millions)	2018	2017
U.S.	**$ 30,380**	$ 24,800
Non-U.S.[a]	**6,998**	7,368
Income before income tax expense	**$ 37,378**	$ 32,168

(a) For purposes of this table, non-U.S. income is defined as income generated from operations located outside the U.S.

Prior to December 31, 2017, U.S. federal income taxes had not been provided on the undistributed earnings of certain non-U.S. subsidiaries, to the extent that such earnings had been reinvested abroad for an indefinite period of time. JPMorgan Chase Bank, N.A. is no longer maintaining the indefinite reinvestment assertion on the undistributed earnings of those non-U.S. subsidiaries in light of the enactment of the TCJA. The U.S. federal and state and local income taxes associated with the undistributed and previously untaxed earnings of those non-U.S. subsidiaries was included in the deemed repatriation charge recorded as of December 31, 2017.

Affordable housing tax credits

JPMorgan Chase Bank, N.A. recognized $1.5 billion and $1.7 billion of tax credits and other tax benefits associated with investments in affordable housing projects within income tax expense for the years 2018 and 2017, respectively. The amount of amortization of such investments reported in income tax expense was $1.2 billion and $1.6 billion, respectively. The carrying value of these investments, which are reported in other assets on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets, was $7.8 billion and $7.7 billion at December 31, 2018 and 2017, respectively. The amount of commitments related to these investments, which are reported in accounts payable and other liabilities on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets, was $2.3 billion and $2.4 billion at December 31, 2018 and 2017, respectively.

Deferred taxes

Deferred income tax expense/(benefit) results from differences between assets and liabilities measured for financial reporting purposes versus income tax return purposes. Deferred tax assets are recognized if, in management's judgment, their realizability is determined to be more likely than not. If a deferred tax asset is determined to be unrealizable, a valuation allowance is established. The significant components of deferred tax assets and liabilities are reflected in the following table as of December 31, 2018 and 2017.

December 31, (in millions)	2018	2017
Deferred tax assets		
Allowance for loan losses	**$ 3,422**	$ 3,380
Employee benefits	**98**	473
Accrued expenses and other	**2,238**	2,886
Non-U.S. operations	**528**	323
Tax attribute carryforwards	**52**	52
Gross deferred tax assets	**6,338**	7,114
Valuation allowance	**(47)**	(27)
Deferred tax assets, net of valuation allowance	**$ 6,291**	$ 7,087
Deferred tax liabilities		
Depreciation and amortization	**$ 1,589**	$ 1,469
Mortgage servicing rights, net of hedges	**2,586**	2,757
Leasing transactions	**4,615**	3,317
Non-U.S. operations	**—**	320
Other, net	**1,966**	1,978
Gross deferred tax liabilities	**10,756**	9,841
Net deferred tax (liabilities)/assets	**$ (4,465)**	$ (2,754)

JPMorgan Chase Bank, N.A. has recorded deferred tax assets of $52 million at December 31, 2018, in connection with U.S. federal and non-U.S. net operating loss ("NOL") carryforwards. At December 31, 2018, total U.S. federal NOL carryforwards were approximately $57 million and non-U.S. NOL carryforwards were approximately $107 million. If not utilized, the U.S. federal NOL carryforwards will expire between 2032 and 2036. Certain non-U.S. NOL carryforwards will expire between 2028 and 2034 whereas others have an unlimited carryforward period.

Unrecognized tax benefits

At December 31, 2018 and 2017, JPMorgan Chase Bank, N.A.'s unrecognized tax benefits, excluding related interest expense and penalties, were $3.6 billion and $3.6 billion, respectively, of which $2.9 billion and $2.7 billion, respectively, if recognized, would reduce the annual effective tax rate. Included in the amount of unrecognized tax benefits are certain items that would not affect the effective tax rate if they were recognized in the Consolidated statements of income. These unrecognized items include the tax effect of certain temporary differences, the portion of gross state and local unrecognized tax benefits that would be offset by the benefit from associated U.S. federal income tax deductions, and the portion of gross non-U.S. unrecognized tax benefits that would have offsets in other jurisdictions. JPMorgan Chase is presently under audit by a number of taxing authorities, most notably by the Internal Revenue Service as summarized in the Tax examination status table below.

As JPMorgan Chase Bank, N.A. is presently under audit by a number of taxing authorities, it is reasonably possible that over the next 12 months the resolution of these examinations may increase or decrease the gross balance of unrecognized tax benefits by as much as approximately $950 million. Upon settlement of an audit, the change in the unrecognized tax benefit would result from payment or income statement recognition.

The following table presents a reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2018 and 2017.

Year ended December 31, (in millions)	2018	2017
Balance at January 1,	**$ 3,562**	$ 2,736
Increases based on tax positions related to the current period	**659**	865
Increases based on tax positions related to prior periods	**564**	494
Decreases based on tax positions related to prior periods	**(880)**	(206)
Decreases related to cash settlements with taxing authorities	**(260)**	(327)
Balance at December 31,	**$ 3,645**	$ 3,562

After-tax interest expense/(benefit) and penalties related to income tax liabilities recognized in income tax expense were $148 million and $83 million in 2018 and 2017, respectively.

At December 31, 2018 and 2017, in addition to the liability for unrecognized tax benefits, JPMorgan Chase Bank, N.A. had accrued $668 million and $475 million, respectively, for income tax-related interest and penalties.

Tax examination status

JPMorgan Chase Bank, N.A. is continually under examination by the Internal Revenue Service, by taxing authorities throughout the world, and by many state and local jurisdictions throughout the U.S. The following table summarizes the status of significant income tax examinations of JPMorgan Chase Bank, N.A. and its consolidated subsidiaries as of December 31, 2018.

December 31, 2018	Periods under examination	Status
JPMorgan Chase – U.S.	2006 - 2010	Field examination of amended returns
JPMorgan Chase – U.S.	2011 - 2013	Field Examination
JPMorgan Chase – U.S.	2014 - 2016	Field Examination
JPMorgan Chase – New York State	2012 - 2014	Field Examination
JPMorgan Chase – New York City	2012 - 2014	Field Examination
JPMorgan Chase – California	2011 - 2012	Field Examination
JPMorgan Chase – U.K.	2006 - 2016	Field examination of certain select entities

Note 23 – Restricted cash, other restricted assets and intercompany funds transfers

Restricted cash and other restricted assets

Certain of JPMorgan Chase Bank, N.A.'s cash and other assets are restricted as to withdrawal or usage. These restrictions are imposed by various regulatory authorities based on the particular activities of JPMorgan Chase Bank, N.A.

The business of JPMorgan Chase Bank, N.A. is subject to examination and regulation by the Office of the Comptroller of the Currency ("OCC"). The Bank is a member of the U.S. Federal Reserve System, and its deposits in the U.S. are insured by the Federal Deposit Insurance Corporation (the "FDIC"), subject to applicable limits.

The Federal Reserve requires depository institutions to maintain cash reserves with a Federal Reserve Bank. The average required amount of reserve balances is deposited by JPMorgan Chase Bank, N.A. In addition, JPMorgan Chase Bank, N.A. is required to maintain cash reserves at certain non-US central banks.

JPMorgan Chase Bank, N.A. is also subject to rules and regulations established by other U.S. and non U.S. regulators. As part of its compliance with the respective regulatory requirements, JPMorgan Chase Bank, N.A.'s broker-dealer J.P. Morgan Securities plc in the U.K. is subject to certain restrictions on cash and other assets.

Upon the adoption of the restricted cash guidance on January 1, 2018, restricted and unrestricted cash are reported together on the Consolidated balance sheets and Consolidated statements of cash flows. The following table presents the components of JPMorgan Chase Bank, N.A.'s restricted cash:

December 31, (in billions)	2018	2017
Cash reserves – Federal Reserve Banks	$ 22.1	$ 25.7
Segregated for the benefit of securities and futures brokerage customers	7.1	8.9
Cash reserves at non-U.S. central banks and held for other general purposes	4.1	3.2
Total restricted cash[(a)]	$ 33.3	$ 37.8

(a) Comprises $32.1 billion and $36.8 billion in deposits with banks, and $1.2 billion and $1.0 billion in cash and due from banks on the Consolidated balance sheets as of December 31, 2018 and 2017, respectively.

Also, as of December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. had cash pledged with clearing organizations for the benefit of customers of $4.8 billion and $3.1 billion, respectively.

Intercompany funds transfers

Restrictions imposed by U.S. federal law prohibit JPMorgan Chase & Co. and certain of its affiliates from borrowing from JPMorgan Chase Bank, N.A. and other banking subsidiaries unless the loans are secured in specified amounts. Such secured loans by JPMorgan Chase Bank, N.A. to any particular affiliate, together with certain other transactions with such affiliate (collectively referred to as "covered transactions"), are generally limited to 10% of JPMorgan Chase Bank, N.A.'s total capital, as determined by the risk-based capital guidelines; the aggregate amount of covered transactions between JPMorgan Chase Bank, N.A. and all affiliates is limited to 20% of JPMorgan Chase Bank, N.A.'s total capital.

In addition to dividend restrictions set forth in statutes and regulations, the OCC, and under certain circumstances the FDIC, have authority under the Financial Institutions Supervisory Act to prohibit or to limit the payment of dividends by the banking organizations they supervise, including JPMorgan Chase Bank, N.A. if, in the banking regulator's opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization.

At January 1, 2019, JPMorgan Chase Bank, N.A. could pay, in the aggregate, approximately $10 billion in dividends to JPMorgan Chase without the prior approval of its relevant banking regulators. The capacity to pay dividends in 2019 will be supplemented by JPMorgan Chase Bank, N.A.'s earnings during the year.

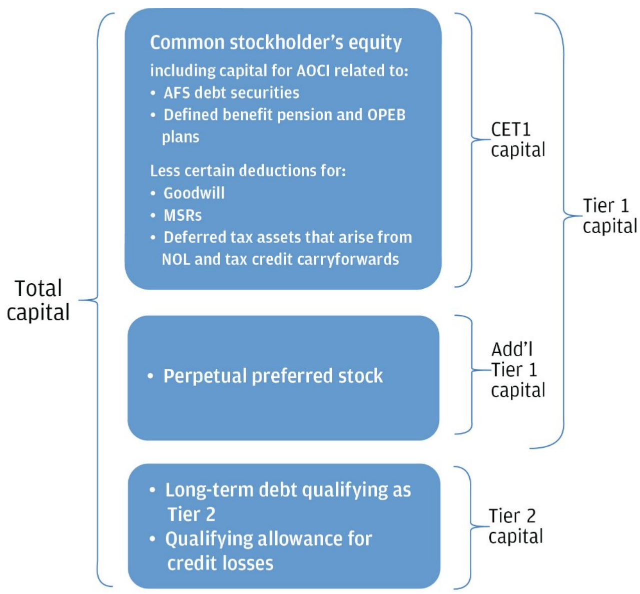
Note 24 – Regulatory capital

JPMorgan Chase Bank, N.A.'s banking regulator, the OCC, establishes capital requirements, including well-capitalized standards for national banks.

Basel III overview

Basel III capital rules for JPMorgan Chase Bank, N.A., set forth two comprehensive approaches for calculating risk-weighted assets ("RWA"): a standardized approach ("Basel III Standardized") and an advanced approach ("Basel III Advanced"). Certain of the requirements of Basel III were subject to phase-in periods that began on January 1, 2014 and continued through the end of 2018 ("transitional period").

The three components of regulatory capital under the Basel III rules are as illustrated below:



Risk-weighted assets

Basel III establishes capital requirements for calculating credit risk RWA and market risk RWA, and in the case of Basel III Advanced, operational risk RWA. Key differences in the calculation of credit risk RWA between the Standardized and Advanced approaches are that for Basel III Advanced, credit risk RWA is based on risk-sensitive approaches which largely rely on the use of internal credit models and parameters, whereas for Basel III Standardized, credit risk RWA is generally based on supervisory risk-weightings which vary primarily by counterparty type and asset class. Market risk RWA is calculated on a generally consistent basis between Basel III Standardized and Basel III Advanced. In addition to the RWA calculated under these approaches, JPMorgan Chase Bank, N.A. may supplement such amounts to incorporate management judgment and feedback from its bank regulators.

Supplementary leverage ratio ("SLR")

Basel III also includes a requirement for Advanced Approach banking organizations to calculate a SLR. The SLR is defined as Tier 1 capital under Basel III divided by JPMorgan Chase Bank, N.A.'s total leverage exposure. Total leverage exposure is calculated by taking JPMorgan Chase Bank, N.A.'s total average on balance sheet assets, less amounts permitted to be deducted for Tier 1 capital, and adding certain off-balance sheet exposures, such as undrawn commitments and derivatives potential future exposure.

Risk-based capital regulatory minimums

JPMorgan Chase Bank, N.A. is subject to Basel III capital rules which include minimum capital ratio requirements that were subject to phase-in periods ("transitional period") through the end of 2018. While the required capital remained subject to the transitional rules during 2018, JPMorgan Chase Bank, N.A.'s capital ratios as of December 31, 2018 were equivalent whether calculated on a transitional or fully phased-in basis.

JPMorgan Chase Bank, N.A. is required to hold additional amounts of capital to serve as a "capital conservation buffer". The capital conservation buffer is intended to be used to absorb potential losses in times of financial or economic stress. The capital conservation buffer was subject to a phase-in period that began January 1, 2016 and continued through the end of 2018. When fully phased-in, JPMorgan Chase Bank, N.A. will be required to hold a 2.5% capital conservation buffer.

As an expansion of the capital conservation buffer, JPMorgan Chase Bank, N.A. is also required to hold additional levels of capital in the form of a countercyclical capital buffer. The Federal Reserve's framework for setting the countercyclical capital buffer takes into account the macro financial environment in which large, internationally active banks function. As of December 31, 2018, the U.S. countercyclical capital buffer remained at 0%. The Federal Reserve will continue to review the buffer at least annually. The buffer can be increased if the Federal Reserve, FDIC and OCC determine that credit growth in the economy has become excessive and can be calibrated up to an additional 2.5% of RWA subject to a 12-month implementation period.

Failure to maintain regulatory capital equal to or in excess of the risk-based regulatory capital minimum plus the capital conservation buffer and any countercyclical buffer may result in limitations to the amount of capital that the JPMorgan Chase Bank, N.A. may distribute.

Under the risk-based and leverage-based capital guidelines of the OCC, JPMorgan Chase Bank, N.A. is required to maintain minimum ratios for CET1, Tier 1, Total, Tier 1 leverage and the SLR. Failure to meet these minimum requirements could cause the OCC to take action.

The following table presents the minimum and well-capitalized ratios to which JPMorgan Chase Bank, N.A. was subject as of December 31, 2018.

	Minimum capital ratios(a)(b)(c)	Well-capitalized ratios(d)
Capital ratios		
CET1	6.375%	6.5%
Tier 1	7.875	8.0
Total	9.875	10.0
Tier 1 leverage	4.0	5.0
SLR	6.0	6.0

Note: The table above is as defined by the regulations issued by the OCC and FDIC and to which JPMorgan Chase Bank, N.A. and its IDI subsidiaries are subject.

(a) Represents requirements for JPMorgan Chase Bank, N.A. and its subsidiaries. The CET1 minimum capital ratio includes 1.875% resulting from the phase in of the 2.5% capital conservation buffer that is applicable to IDI subsidiaries.
(b) For the period ended December 31, 2017, the CET1, Tier 1, Total and Tier 1 leverage minimum capital ratios applicable to JPMorgan Chase Bank, N.A. were 5.75%, 7.25%, 9.25% and 4.0%, respectively.
(c) Represents minimum SLR requirement of 3.0%, as well as, supplementary leverage buffer of 3.0% for JPMorgan Chase Bank, N.A. and its IDI subsidiaries.
(d) Represents requirements for IDI subsidiaries pursuant to regulations issued under the FDIC Improvement Act.

The following tables present the risk-based and leverage-based capital ratios for JPMorgan Chase Bank, N.A. under both Basel III Standardized and Basel III Advanced Approaches. As of December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. was well-capitalized and met all capital requirements to which it was subject.

	JPMorgan Chase Bank, N.A.			
	Basel III Standardized Transitional		**Basel III Advanced Transitional**	
(in millions, except ratios)	**Dec 31, 2018**	Dec 31, 2017	**Dec 31, 2018**	Dec 31, 2017
Regulatory capital				
CET1 capital	**$ 211,671**	$ 206,612	**$ 211,671**	$ 206,612
Tier 1 capital	**211,671**	206,612	**211,671**	206,612
Total capital	**229,952**	226,190	**220,025**	215,851
Assets				
Risk-weighted	**1,446,529**	1,434,702 (d)	**1,283,146**	1,317,586
Adjusted average(a)	**2,250,480**	2,184,628	**2,250,480**	2,184,628
Capital ratios(b)				
CET1	**14.6%**	14.4%	**16.5%**	15.7%
Tier 1	**14.6**	14.4	**16.5**	15.7
Total	**15.9**	15.8 (d)	**17.1**	16.4
Tier 1 leverage(c)	**9.4**	9.5	**9.4**	9.5

(a) Adjusted average assets, for purposes of calculating the Tier 1 leverage ratio, includes total quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill and other intangible assets.
(b) For each of the risk-based capital ratios, the capital adequacy of JPMorgan Chase Bank, N.A. and its IDI subsidiaries is evaluated against the lower of the two ratios as calculated under Basel III approaches (Standardized or Advanced).
(c) The Tier 1 leverage ratio is not a risk-based measure of capital.

	December 31, 2018	December 31, 2017
(in millions, except ratios)	**Basel III Advanced Fully Phased-in**	**Basel III Advanced Transitional**
Total leverage exposure(a)	**$ 2,915,541**	$ 2,869,921
SLR(a)	**7.3%**	7.2%

(a) Effective January 1, 2018, the SLR was fully phased-in under Basel III. The December 31, 2017 amounts were calculated under the Basel III Transitional rules.

Note 25 – Off–balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorgan Chase Bank, N.A. provides lending-related financial instruments (e.g., commitments and guarantees) to address the financing needs of its customers and clients. The contractual amount of these financial instruments represents the maximum possible credit risk to JPMorgan Chase Bank, N.A. should the customer or client draw upon the commitment or JPMorgan Chase Bank, N.A. be required to fulfill its obligation under the guarantee, and should the customer or client subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees are refinanced, extended, cancelled, or expire without being drawn or a default occurring. As a result, the total contractual amount of these instruments is not, in JPMorgan Chase Bank, N.A.'s view, representative of its expected future credit exposure or funding requirements.

To provide for probable credit losses inherent in wholesale and certain consumer lending-commitments, an allowance for credit losses on lending-related commitments is maintained. Refer to Note 14 for further information regarding the allowance for credit losses on lending-related commitments. The following table summarizes the contractual amounts and carrying values of off-balance sheet lending-related financial instruments, guarantees and other commitments at December 31, 2018 and 2017. The amounts in the table below for credit card and home equity lending-related commitments represent the total available credit for these products. JPMorgan Chase Bank, N.A. has not experienced, and does not anticipate, that all available lines of credit for these products will be utilized at the same time. JPMorgan Chase Bank, N.A. can reduce or cancel credit card lines of credit by providing the borrower notice or, in some cases as permitted by law, without notice. In addition, JPMorgan Chase Bank, N.A. typically closes credit card lines when the borrower is 60 days or more past due. JPMorgan Chase Bank, N.A. may reduce or close HELOCs when there are significant decreases in the value of the underlying property, or when there has been a demonstrable decline in the creditworthiness of the borrower.

Off-balance sheet lending-related financial instruments, guarantees and other commitments

By remaining maturity at December 31, (in millions)	Contractual amount 2018 Expires in 1 year or less	Expires after 1 year through 3 years	Expires after 3 years through 5 years	Expires after 5 years	Total	2017 Total	Carrying value[i] 2018	2017
Lending-related								
Consumer, excluding credit card:								
Home equity	$ 796	$ 1,095	$ 1,813	$ 17,197	$ 20,901	$ 20,360	$ 12	$ 12
Residential mortgage[a]	5,469	–	–	12	5,481	5,736	–	–
Auto	6,954	878	78	101	8,011	9,255	2	2
Consumer & business banking	10,580	566	102	425	11,673	13,202	19	19
Total consumer, excluding credit card	23,799	2,539	1,993	17,735	46,066	48,553	33	33
Credit card	605,379	–	–	–	605,379	572,986	–	–
Total consumer[b]	629,178	2,539	1,993	17,735	651,445	621,539	33	33
Wholesale:								
Other unfunded commitments to extend credit[c][d]	61,361	123,750	154,112	11,178	350,401	330,305	851	840
Standby letters of credit and other financial guarantees[c]	14,423	11,462	5,248	2,380	33,513	35,242	521	636
Other letters of credit[c]	2,608	177	40	–	2,825	3,712	3	3
Total wholesale	78,392	135,389	159,400	13,558	386,739	369,259	1,375	1,479
Total lending-related	$ 707,570	$ 137,928	$ 161,393	$ 31,293	$ 1,038,184	$ 990,798	$ 1,408	$ 1,512
Other guarantees and commitments								
Securities lending indemnification agreements and guarantees[e]	$ 193,065	$ –	$ –	$ –	$ 193,065	$ 191,302	$ –	$ –
Derivatives qualifying as guarantees	2,392	376	12,614	40,259	55,641	57,761	399	310
Unsettled resale and securities borrowed agreements	87,700	–	–	–	87,700	61,610	–	–
Unsettled repurchase and securities loaned agreements	44,422	–	–	–	44,422	32,750	–	–
Loan sale and securitization-related indemnifications:								
Mortgage repurchase liability	–	–	–	–	NA	NA	89	111
Loans sold with recourse	–	–	–	–	671	766	7	8
Exchange & clearing house guarantees and commitments[f][g]	38,651	–	–	–	38,651	5,884	–	–
Other guarantees and commitments[g][h]	3,571	538	169	2,767	7,045	7,484	(78)	(82)

(a) Includes certain commitments to purchase loans from correspondents.
(b) Predominantly all consumer lending-related commitments are in the U.S.
(c) At December 31, 2018 and 2017, reflected the contractual amount net of risk participations totaling $282 million and $334 million, respectively, for other unfunded commitments to extend credit; $10.4 billion and $10.4 billion, respectively, for standby letters of credit and other financial guarantees; and $385 million and $405 million, respectively, for other letters of credit. In regulatory filings with the Federal Reserve these commitments are shown gross of risk participations.
(d) At December 31, 2018 and 2017, included commitments to affiliates of $15 million and $16 million, respectively.
(e) At December 31, 2018 and 2017, collateral held by JPMorgan Chase Bank, N.A. in support of securities lending indemnification agreements was $202.7 billion and $200.9 billion, respectively. Securities lending collateral primarily consists of cash and securities issued by governments that are members of G7 and U.S. government agencies.
(f) At December 31, 2018, includes guarantees of the Fixed Income Clearing Corporation under the sponsored member repo program and commitments and guarantees associated with JPMorgan Chase Bank, N.A.'s membership in certain clearing houses. At December 31, 2017 includes commitments and guarantees associated with JPMorgan Chase Bank, N.A's membership in certain clearing houses.
(g) Certain guarantees and commitments associated with JPMorgan Chase Bank, N.A.'s membership in clearing houses previously disclosed in "other guarantees and commitments" are now disclosed in "Exchange and clearing house guarantees and commitments".
(h) At December 31, 2018 and 2017, included unfunded equity investment commitments of $15 million and $32 million, respectively. In addition, at both December 31, 2018 and 2017, included letters of credit hedged by derivative transactions and managed on a market risk basis of $3.2 billion and $4.5 billion.
(i) For lending-related products, the carrying value represents the allowance for lending-related commitments and the guarantee liability; for derivative-related products, the carrying value represents the fair value.

Other unfunded commitments to extend credit

Other unfunded commitments to extend credit generally consist of commitments for working capital and general corporate purposes, extensions of credit to support commercial paper facilities and bond financings in the event that those obligations cannot be remarketed to new investors, as well as committed liquidity facilities to clearing organizations. JPMorgan Chase Bank, N.A. also issues commitments under multipurpose facilities which could be drawn upon in several forms, including the issuance of a standby letter of credit.

JPMorgan Chase Bank, N.A. acts as a settlement and custody bank in the U.S. tri-party repurchase transaction market. In its role as settlement and custody bank, JPMorgan Chase Bank, N.A. in part is exposed to the intra-day credit risk of its cash borrower clients, usually broker-dealers. This exposure arises under secured clearance advance facilities that JPMorgan Chase Bank, N.A. extended to its clients (i.e. cash borrowers); these facilities contractually limit JPMorgan Chase Bank, N.A.'s intra-day credit risk to the facility amount and must be repaid by the end of the day. As of December 31, 2017, the secured clearance advance facility maximum outstanding commitment amount was $3.5 billion. As of December 31, 2018 JPMorgan Chase Bank, N.A. no longer offers such arrangements to its clients.

Guarantees

U.S. GAAP requires that a guarantor recognize, at the inception of a guarantee, a liability in an amount equal to the fair value of the obligation undertaken in issuing the guarantee. U.S. GAAP defines a guarantee as a contract that contingently requires the guarantor to pay a guaranteed party based upon: (a) changes in an underlying asset, liability or equity security of the guaranteed party; or (b) a third party's failure to perform under a specified agreement. JPMorgan Chase Bank, N.A. considers the following off–balance sheet arrangements to be guarantees under U.S. GAAP: standby letters of credit and other financial guarantees, securities lending indemnifications, certain indemnification agreements included within third-party contractual arrangements, certain derivative contracts and the guarantees under the sponsored member repo program.

As required by U.S. GAAP, JPMorgan Chase Bank, N.A. initially records guarantees at the inception date fair value of the obligation assumed (e.g., the amount of consideration received or the net present value of the premium receivable). For certain types of guarantees, JPMorgan Chase Bank, N.A. records this fair value amount in other liabilities with an offsetting entry recorded in cash (for premiums received), or other assets (for premiums receivable). Any premium receivable recorded in other assets is reduced as cash is received under the contract, and the fair value of the liability recorded at inception is amortized into income as lending and deposit-related fees over the life of the guarantee contract. For indemnifications provided in sales agreements, a portion of the sale proceeds is allocated to the guarantee, which adjusts the gain or loss that would otherwise result from the transaction. For these indemnifications, the initial liability is amortized to income as JPMorgan Chase Bank, N.A.'s risk is reduced (i.e., over time or when the indemnification expires). Any contingent liability that exists as a result of issuing the guarantee or indemnification is recognized when it becomes probable and reasonably estimable. The contingent portion of the liability is not recognized if the estimated amount is less than the carrying amount of the liability recognized at inception (adjusted for any amortization). The contractual amount and carrying value of guarantees and indemnifications are included in the table on page 119. For additional information on the guarantees, see below.

Standby letters of credit and other financial guarantees

Standby letters of credit and other financial guarantees are conditional lending commitments issued by JPMorgan Chase Bank, N.A. to guarantee the performance of a client or customer to a third party under certain arrangements, such as commercial paper facilities, bond financings, acquisition financings, trade and similar transactions.

The following table summarizes the contractual amount and carrying value of standby letters of credit and other financial guarantees and other letters of credit arrangements as of December 31, 2018 and 2017.

Standby letters of credit, other financial guarantees and other letters of credit

December 31, (in millions)	2018 Standby letters of credit and other financial guarantees	2018 Other letters of credit	2017 Standby letters of credit and other financial guarantees	2017 Other letters of credit
Investment-grade[(a)]	**$ 26,420**	**$ 2,079**	$ 28,492	$ 2,646
Noninvestment-grade[(a)]	**7,093**	**746**	6,750	1,066
Total contractual amount	**$ 33,513**	**$ 2,825**	$ 35,242	$ 3,712
Allowance for lending-related commitments	**$ 167**	**$ 3**	$ 192	$ 3
Guarantee liability	354	–	444	–
Total carrying value	**$ 521**	**$ 3**	$ 636	$ 3
Commitments with collateral	**$ 17,400**	**$ 583**	$ 17,421	$ 878

(a) The ratings scale is based on JPMorgan Chase Bank, N.A.'s internal ratings, which generally correspond to ratings as defined by S&P and Moody's.

Securities lending indemnifications

Through JPMorgan Chase Bank, N.A.'s securities lending program, counterparties' securities, via custodial and non-custodial arrangements, may be lent to third parties. As part of this program, JPMorgan Chase Bank, N.A. provides an indemnification in the lending agreements which protects the lender against the failure of the borrower to return the lent securities. To minimize its liability under these indemnification agreements, JPMorgan Chase Bank, N.A. obtains cash or other highly liquid collateral with a market value exceeding 100% of the value of the securities on loan from the borrower. Collateral is marked to market daily to help assure that collateralization is adequate. Additional collateral is called from the borrower if a shortfall exists, or collateral may be released to the borrower in the event of overcollateralization. If a borrower defaults, JPMorgan Chase Bank, N.A. would use the collateral held to purchase replacement securities in the market or to credit the lending client or counterparty with the cash equivalent thereof.

Derivatives qualifying as guarantees

JPMorgan Chase Bank, N.A. transacts certain derivative contracts that have the characteristics of a guarantee under U.S. GAAP. These contracts include written put options that require JPMorgan Chase Bank, N.A. to purchase assets upon exercise by the option holder at a specified price by a specified date in the future. JPMorgan Chase Bank, N.A. may enter into written put option contracts in order to meet client needs, or for other trading purposes. The terms of written put options are typically five years or less.

Derivatives deemed to be guarantees also includes stable value contracts, commonly referred to as "stable value products", that require JPMorgan Chase Bank, N.A. to make a payment of the difference between the market value and the book value of a counterparty's reference portfolio of assets in the event that market value is less than book value and certain other conditions have been met. Stable value products are transacted in order to allow investors to realize investment returns with less volatility than an unprotected portfolio. These contracts are typically longer-term or may have no stated maturity, but allow JPMorgan Chase Bank, N.A. to elect to terminate the contract under certain conditions.

The notional value of derivatives guarantees generally represents JPMorgan Chase Bank, N.A.'s maximum exposure. However, exposure to certain stable value products is contractually limited to a substantially lower percentage of the notional amount.

The fair value of derivative guarantees reflects the probability, in JPMorgan Chase Bank, N.A.'s view, of whether JPMorgan Chase Bank, N.A. will be required to perform under the contract. JPMorgan Chase Bank, N.A. reduces exposures to these contracts by entering into offsetting transactions, or by entering into contracts that hedge the market risk related to the derivative guarantees.

The following table summarizes the derivatives qualifying as guarantees as of December 31, 2018 and 2017.

(in millions)	**December 31, 2018**	December 31, 2017
Notional amounts		
Derivative guarantees	**$ 55,641**	$ 57,761
Stable value contracts with contractually limited exposure	**28,637**	29,104
Maximum exposure of stable value contracts with contractually limited exposure	**2,963**	3,053
Fair value		
Derivative payables	**399**	310
Derivative receivables	**–**	–

In addition to derivative contracts that meet the characteristics of a guarantee, JPMorgan Chase Bank, N.A. is both a purchaser and seller of credit protection in the credit derivatives market. For a further discussion of credit derivatives, refer to Note 6.

Unsettled securities financing agreements

In the normal course of business, JPMorgan Chase Bank, N.A. enters into resale and securities borrowed agreements. At settlement, these commitments result in JPMorgan Chase Bank, N.A. advancing cash to and receiving securities collateral from the counterparty. JPMorgan Chase Bank, N.A. also enters into repurchase and securities loaned agreements. At settlement, these commitments result in JPMorgan Chase Bank N.A. receiving cash from and providing securities collateral to the counterparty. Such agreements settle at a future date. These agreements generally do not meet the definition of a derivative, and therefore, are not recorded on the Consolidated balance sheets until settlement date. These agreements predominantly have regular-way settlement terms. For a further discussion of securities financing agreements, refer to Note 12.

Loan sales- and securitization-related indemnifications

Mortgage repurchase liability

In connection with JPMorgan Chase Bank, N.A.'s mortgage loan sale and securitization activities with GSEs JPMorgan Chase Bank, N.A. has made representations and warranties that the loans sold meet certain requirements, and that may require JPMorgan Chase Bank, N.A. to repurchase mortgage loans and/or indemnify the loan purchaser if such representations and warranties are breached by JPMorgan Chase Bank, N.A. Further, although JPMorgan Chase Bank, N.A.'s securitizations are predominantly nonrecourse, JPMorgan Chase Bank, N.A. does provide recourse servicing in certain limited cases where it agrees to share credit risk with the owner of the mortgage loans. To the extent that repurchase demands that are received relate to loans that JPMorgan Chase Bank, N.A. purchased from third parties that remain viable, JPMorgan Chase Bank, N.A. typically will have the right to seek a recovery of related repurchase losses from the third party. Generally, the maximum amount of future payments JPMorgan Chase Bank, N.A. would be required to make for breaches of these representations and warranties would be equal to the unpaid principal balance of such loans that are deemed to have defects that were sold to purchasers (including securitization-related SPEs) plus, in certain circumstances, accrued interest on such loans and certain expenses.

Private label securitizations

The liability related to repurchase demands associated with private label securitizations is separately evaluated by JPMorgan Chase Bank, N.A. in establishing its litigation reserves.

For additional information regarding litigation, refer to Note 27.

Loans sold with recourse

JPMorgan Chase Bank, N.A. provides servicing for mortgages and certain commercial lending products on both a recourse and nonrecourse basis. In nonrecourse servicing, the principal credit risk to JPMorgan Chase Bank, N.A. is the cost of temporary servicing advances of funds (i.e., normal servicing advances). In recourse servicing, the servicer agrees to share credit risk with the owner of the mortgage loans, such as Fannie Mae or Freddie Mac or a private investor, insurer or guarantor. Losses on recourse servicing predominantly occur when foreclosure sales proceeds of the property underlying a defaulted loan are less than the sum of the outstanding principal balance, plus accrued interest on the loan and the cost of holding and disposing of the underlying property. JPMorgan Chase Bank, N.A.'s securitizations are predominantly nonrecourse, thereby effectively transferring the risk of future credit losses to the purchaser of the mortgage-backed securities issued by the trust. At December 31, 2018 and 2017, the unpaid principal balance of loans sold with recourse totaled $671 million and $766 million, respectively. The carrying value of the related liability that JPMorgan Chase Bank, N.A. has recorded in accounts payable and other liabilities on the Consolidated balance sheets, which is representative of JPMorgan Chase Bank, N.A.'s view of the likelihood it will have to perform under its recourse obligations, was $7 million and $8 million at December 31, 2018 and 2017, respectively.

Other off-balance sheet arrangements

Indemnification agreements – general

In connection with issuing securities to investors outside the U.S., JPMorgan Chase Bank, N.A. may agree to pay additional amounts to the holders of the securities in the event that, due to a change in tax law, certain types of withholding taxes are imposed on payments on the securities. The terms of the securities may also give JPMorgan Chase Bank, N.A. the right to redeem the securities if such additional amounts are payable. JPMorgan Chase Bank, N.A. may also enter into indemnification clauses in connection with the licensing of software to clients ("software licensees") or when it sells a business or assets to a third party ("third-party purchasers"), pursuant to which it indemnifies software licensees for claims of liability or damages that may occur subsequent to the licensing of the software, or third-party purchasers for losses they may incur due to actions taken by JPMorgan Chase Bank, N.A. prior to the sale of the business or assets. It is difficult to estimate JPMorgan Chase Bank, N.A.'s maximum exposure under these indemnification arrangements, since this would require an assessment of future changes in tax law and future claims that may be made against JPMorgan Chase Bank, N.A. that have not yet occurred. However, based on historical experience, management expects the risk of loss to be remote.

Card charge-backs
Under the rules of Visa USA, Inc., and MasterCard International, JPMorgan Chase Bank, N.A., is primarily liable for the amount of each processed card sales transaction that is the subject of a dispute between a cardmember and a merchant. If a dispute is resolved in the cardmember's favor, the merchant services business will (through the cardmember's issuing bank) credit or refund the amount to the cardmember and will charge back the transaction to the merchant. If the merchant services business is unable to collect the amount from the merchant, the merchant services business will bear the loss for the amount credited or refunded to the cardmember. The merchant services business mitigates this risk by withholding future settlements, retaining cash reserve accounts or by obtaining other collateral. However, in the unlikely event that: (1) a merchant ceases operations and is unable to deliver products, services or a refund; (2) The merchant services business does not have sufficient collateral from the merchant to provide cardmember refunds; and (3) The merchant services business does not have sufficient financial resources to provide cardmember refunds, JPMorgan Chase Bank, N.A., would recognize the loss.

The merchant services business incurred aggregate losses of $30 million and $28 million on $1,366.1 billion and $1,191.7 billion of aggregate volume processed for the years ended December 31, 2018 and 2017, respectively. Incurred losses from merchant charge-backs are charged to other expense, with the offset recorded in a valuation allowance against accrued interest and accounts receivable on the Consolidated balance sheets. The carrying value of the valuation allowance was $23 million and $7 million at December 31, 2018 and 2017, respectively, which JPMorgan Chase Bank, N.A. believes, based on historical experience and the collateral held by the merchant services business of $144 million and $141 million at December 31, 2018 and 2017, respectively, is representative of the payment or performance risk to JPMorgan Chase Bank, N.A. related to charge-backs.

Clearing Services – Client Credit Risk
JPMorgan Chase Bank, N.A. provides clearing services for clients by entering into securities purchases and sales and derivative contracts with CCPs, including ETDs such as futures and options, as well as OTC-cleared derivative contracts. As a clearing member, JPMorgan Chase Bank, N.A. stands behind the performance of its clients, collects cash and securities collateral (margin) as well as any settlement amounts due from or to clients, and remits them to the relevant CCP or client in whole or part. There are two types of margin: variation margin is posted on a daily basis based on the value of clients' derivative contracts and initial margin is posted at inception of a derivative contract, generally on the basis of the potential changes in the variation margin requirement for the contract.

As a clearing member, JPMorgan Chase Bank, N.A. is exposed to the risk of nonperformance by its clients, but is not liable to clients for the performance of the CCPs. Where possible, JPMorgan Chase Bank, N.A. seeks to mitigate its risk to the client through the collection of appropriate amounts of margin at inception and throughout the life of the transactions. JPMorgan Chase Bank, N.A. can also cease providing clearing services if clients do not adhere to their obligations under the clearing agreement. In the event of nonperformance by a client, JPMorgan Chase Bank, N.A. would close out the client's positions and access available margin. The CCP would utilize any margin it holds to make itself whole, with any remaining shortfalls required to be paid by JPMorgan Chase Bank, N.A. as a clearing member.

JPMorgan Chase Bank, N.A. reflects its exposure to nonperformance risk of the client through the recognition of margin receivables from clients and margin payables to CCPs; the clients' underlying securities or derivative contracts are not reflected in JPMorgan Chase Bank, N.A.'s Consolidated Financial Statements.

It is difficult to estimate JPMorgan Chase Bank, N.A.'s maximum possible exposure through its role as a clearing member, as this would require an assessment of transactions that clients may execute in the future. However, based upon historical experience, and the credit risk mitigants available to JPMorgan Chase Bank, N.A., management believes it is unlikely that JPMorgan Chase Bank, N.A. will have to make any material payments under these arrangements and the risk of loss is expected to be remote.

For information on the derivatives that JPMorgan Chase Bank, N.A. executes for its own account and records in its Consolidated Financial Statements, refer to Note 6.

Exchange & Clearing House Memberships
JPMorgan Chase Bank, N.A. is a member of several securities and derivative exchanges and clearing houses, both in the U.S. and other countries, and it provides clearing services to its clients. Membership in some of these organizations requires JPMorgan Chase Bank, N.A. to pay a pro rata share of the losses incurred by the organization as a result of the default of another member. Such obligations vary with different organizations. These obligations may be limited to the amount (or a multiple of the amount) of JPMorgan Chase Bank, N.A.'s contribution to the guarantee fund maintained by a clearing house or exchange as part of the resources available to cover any losses in the event of a member default. Alternatively, these obligations may also include a pro rata share of the residual losses after applying the guarantee fund. Additionally, certain clearing houses require JPMorgan Chase Bank, N.A. as a member to pay a pro rata share of losses that may result from the clearing house's investment of guarantee fund contributions and initial margin, unrelated to and independent of the default of another member. Generally a payment would only be required should such losses exceed the resources of the

clearing house or exchange that are contractually required to absorb the losses in the first instance. In certain cases, it is difficult to estimate JPMorgan Chase Bank, N.A.'s maximum possible exposure under these membership agreements, since this would require an assessment of future claims that may be made against JPMorgan Chase Bank, N.A. that have not yet occurred. However, based on historical experience, management expects the risk of loss to JPMorgan Chase Bank, N.A. to be remote. Where JPMorgan Chase Bank, N.A.'s maximum possible exposure can be estimated, the amount is disclosed in the table on page 119, in the Exchange & clearing house guarantees and commitments line.

Sponsored Member Repo Program

In 2018 JPMorgan Chase Bank, N.A.commenced the sponsored member repo program, wherein JPMorgan Chase Bank, N.A. acts as a sponsoring member to clear eligible overnight resale and repurchase agreements through the Government Securities Division of the Fixed Income Clearing Corporation ("FICC") on behalf of clients that become sponsored members under the FICC's rules. JPMorgan Chase Bank, N.A. also guarantees to the FICC the prompt and full payment and performance of its sponsored member clients' respective obligations under the FICC's rules. JPMorgan Chase Bank, N.A. minimizes its liability under these overnight guarantees by obtaining a security interest in the cash or high quality securities collateral that the clients place with the clearing house therefore JPMorgan Chase Bank, N.A. expects the risk of loss to be remote. JPMorgan Chase Bank, N.A.'s maximum possible exposure, without taking into consideration the associated collateral, is included in the Exchange & clearing house guarantees and commitments line on page 119. For additional information on credit risk mitigation practices on resale agreements and the types of collateral pledged under repurchase agreements, refer to Note 12.

Guarantees of subsidiaries and affiliates

In the normal course of business, JPMorgan Chase Bank, N.A. may provide counterparties with guarantees of certain of the trading and other obligations of its subsidiaries and affiliates on a contract-by-contract basis, as negotiated with JPMorgan Chase Bank, N.A.'s counterparties. The obligations of the subsidiaries are included on JPMorgan Chase Bank, N.A.'s Consolidated balance sheets or are reflected as off-balance sheet commitments; therefore, JPMorgan Chase Bank, N.A. has not recognized a separate liability for these guarantees. As at December 31, 2018 and 2017, JPMorgan Chase Bank, N.A. had provided guarantees of $15.0 billion and $14.2 billion, respectively, of the obligations of affiliates. JPMorgan Chase Bank, N.A. believes that the occurrence of any event that would trigger payments by JPMorgan Chase Bank, N.A. under these guarantees is remote.

Note 26 – Commitments, pledged assets and collateral

Lease commitments

At December 31, 2018, JPMorgan Chase Bank, N.A. and its subsidiaries were obligated under a number of noncancelable operating leases for premises and equipment used primarily for banking purposes. Certain leases contain renewal options or escalation clauses providing for increased rental payments based on maintenance, utility and tax increases, or they require JPMorgan Chase Bank, N.A. to perform restoration work on leased premises. No lease agreement imposes restrictions on JPMorgan Chase Bank, N.A.'s ability to pay dividends, engage in debt or equity financing transactions or enter into further lease agreements.

The following table presents required future minimum rental payments under operating leases with noncancelable lease terms that expire after December 31, 2018.

Year ended December 31, (in millions)	
2019	$ 1,457
2020	1,436
2021	1,258
2022	1,080
2023	921
After 2023	4,188
Total minimum payments required	10,340
Less: Sublease rentals under noncancelable subleases	(712)
Net minimum payments required	$ 9,628

Total rental expense was as follows.

Year ended December 31, (in millions)	2018	2017
Gross rental expense	**$ 1,738**	$ 1,670
Sublease rental income	**(215)**	(208)
Net rental expense	**$ 1,523**	$ 1,462

Pledged assets

JPMorgan Chase Bank, N.A. may pledge financial assets that it owns to maintain potential borrowing capacity at discount windows with Federal Reserve banks, various other central banks and FHLBs. Additionally, pledged assets are used for other purposes, including to collateralize repurchase and other securities financing agreements, to cover short sales and to collateralize derivative contracts and deposits and borrowings of affiliates. Certain of these pledged assets may be sold or repledged or otherwise used by the secured parties and are parenthetically identified on the Consolidated balance sheets as assets pledged.

The following table presents JPMorgan Chase Bank, N.A.'s pledged assets.

December 31, (in billions)		2018		2017
Assets that may be sold or repledged or otherwise used by secured parties	**$**	**63.5**	$	74.6
Assets that may not be sold or repledged or otherwise used by secured parties		**39.3**		39.0
Assets pledged at Federal Reserve banks and FHLBs		**475.4**		493.8
Total assets pledged	**$**	**578.2**	$	607.4

Total assets pledged do not include assets of consolidated VIEs; these assets are used to settle the liabilities of those entities. Refer to Note 15 for additional information on assets and liabilities of consolidated VIEs. For additional information on JPMorgan Chase Bank, N.A.'s securities financing activities, refer to Note 12. For additional information on JPMorgan Chase Bank, N.A.'s long-term debt, refer to Note 19.

The significant components of JPMorgan Chase Bank, N.A.'s pledged assets were as follows.

December 31, (in billions)		2018		2017
Investment securities	**$**	**65.9**	$	91.4
Loans		**439.9**		437.6
Trading assets and other		**72.4**		78.4
Total assets pledged	**$**	**578.2**	$	607.4

Collateral

JPMorgan Chase Bank, N.A. accepts financial assets as collateral that it is permitted to sell or repledge, deliver or otherwise use. This collateral is generally obtained under resale and other securities financing agreements, customer margin loans and derivative contracts. Collateral is generally used under repurchase and other securities financing agreements, to cover short sales and to collateralize derivative contracts and deposits.

The following table presents the fair value of collateral accepted.

December 31, (in billions)		2018		2017
Collateral permitted to be sold or repledged, delivered, or otherwise used	**$**	**880.0**	$	590.8
Collateral sold, repledged, delivered or otherwise used		**714.6**		484.9

Note 27 - Litigation

Contingencies

As of December 31, 2018, JPMorgan Chase and its subsidiaries, including but not limited to JPMorgan Chase Bank, N.A., are defendants, putative defendants or respondents in numerous legal proceedings, including private, civil litigations and regulatory/government investigations. The litigations range from individual actions involving a single plaintiff to class action lawsuits with potentially millions of class members. Investigations involve both formal and informal proceedings, by both governmental agencies and self-regulatory organizations. These legal proceedings are at varying stages of adjudication, arbitration or investigation, and involve each of JPMorgan Chase's lines of business and several geographies and a wide variety of claims (including common law tort and contract claims and statutory antitrust, securities and consumer protection claims), some of which present novel legal theories.

JPMorgan Chase believes the estimate of the aggregate range of reasonably possible losses, in excess of reserves established, for its legal proceedings is from $0 to approximately $1.5 billion at December 31, 2018. This estimated aggregate range of reasonably possible losses was based upon information available as of that date for those proceedings in which JPMorgan Chase believes that an estimate of reasonably possible loss can be made. For certain matters, JPMorgan Chase does not believe that such an estimate can be made, as of that date. JPMorgan Chase's estimate of the aggregate range of reasonably possible losses involves significant judgment, given:

- the number, variety and varying stages of the proceedings, including the fact that many are in preliminary stages,
- the existence in many such proceedings of multiple defendants, including JPMorgan Chase and JPMorgan Chase Bank, N.A., whose share of liability (if any) has yet to be determined,
- the numerous yet-unresolved issues in many of the proceedings, including issues regarding class certification and the scope of many of the claims, and
- the attendant uncertainty of the various potential outcomes of such proceedings, including where JPMorgan Chase has made assumptions concerning future rulings by the court or other adjudicator, or about the behavior or incentives of adverse parties or regulatory authorities, and those assumptions prove to be incorrect.

In addition, the outcome of a particular proceeding may be a result which JPMorgan Chase did not take into account in its estimate because JPMorgan Chase had deemed the likelihood of that outcome to be remote. Accordingly, JPMorgan Chase's estimate of the aggregate range of reasonably possible losses will change from time to time, and actual losses may vary significantly.

Set forth below are descriptions of JPMorgan Chase's material legal proceedings in which JPMorgan Chase and its subsidiaries (which in certain instances include JPMorgan Chase Bank, N.A.) are involved or have been named as parties.

American Depositary Receipts Pre-Release Inquiry. In December 2018, JPMorgan Chase Bank, N.A. reached a settlement with the U.S. Securities and Exchange Commission regarding its inquiry into activity relating to pre-released American Depositary Receipts.

Foreign Exchange Investigations and Litigation. JPMorgan Chase previously reported settlements with certain government authorities relating to its foreign exchange ("FX") sales and trading activities and controls related to those activities. FX-related investigations and inquiries by government authorities, including competition authorities, are ongoing, and JPMorgan Chase is cooperating with and working to resolve those matters. In May 2015, JPMorgan Chase pleaded guilty to a single violation of federal antitrust law. In January 2017, JPMorgan Chase was sentenced, with judgment entered thereafter and a term of probation ending in January 2020. The Department of Labor has granted JPMorgan Chase a five-year exemption of disqualification that allows JPMorgan Chase and its affiliates to continue to rely on the Qualified Professional Asset Manager exemption under the Employee Retirement Income Security Act ("ERISA") until January 2023. JPMorgan Chase will need to reapply in due course for a further exemption to cover the remainder of the ten-year disqualification period. Separately, in February 2017 the South Africa Competition Commission referred its FX investigation of JPMorgan Chase and other banks to the South Africa Competition Tribunal, which is conducting civil proceedings concerning that matter.

JPMorgan Chase is also one of a number of foreign exchange dealers named as defendants in a class action filed in the United States District Court for the Southern District of New York by U.S.-based plaintiffs, principally alleging violations of federal antitrust laws based on an alleged conspiracy to manipulate foreign exchange rates (the "U.S. class action"). In January 2015, JPMorgan Chase entered into a settlement agreement in the U.S. class action. Following this settlement, a number of additional putative class actions were filed seeking damages for persons who transacted FX futures and options on futures (the "exchanged-based actions"), consumers who purchased foreign currencies at allegedly inflated rates (the "consumer action"), participants or beneficiaries of qualified ERISA plans (the "ERISA actions"), and purported indirect purchasers of FX instruments (the "indirect purchaser action"). Since then, JPMorgan Chase has entered into a revised settlement agreement to resolve the consolidated U.S. class action, including the exchange-based actions. The Court granted final approval of that settlement agreement in August 2018. Certain members of the settlement class filed requests to the Court to be excluded from the class, and certain of them filed a complaint against JPMorgan Chase and a number of other foreign exchange dealers in November 2018 (the "opt-out action"). The District Court has dismissed one of the ERISA actions, and the United States Court of Appeals for the Second Circuit affirmed that dismissal in July 2018. The second ERISA action was voluntarily dismissed with prejudice in November 2018. The indirect purchaser action, the consumer action and the opt-out action remain pending in the District Court.

General Motors Litigation. JPMorgan Chase Bank, N.A. participated in, and was the Administrative Agent on behalf of a syndicate of lenders on, a $1.5 billion syndicated Term Loan facility ("Term Loan") for General Motors Corporation ("GM"). In July 2009, in connection with the GM bankruptcy proceedings, the Official Committee of Unsecured Creditors of Motors Liquidation Company ("Creditors Committee") filed a lawsuit against JPMorgan Chase Bank, N.A., in its individual capacity and as Administrative Agent for other lenders on the Term Loan, seeking to hold the underlying lien invalid based on the filing of a UCC-3 termination statement relating to the Term Loan. In January 2015, following several court proceedings, the United States Court of Appeals for the Second Circuit reversed the Bankruptcy Court's dismissal of the Creditors Committee's claim and remanded the case to the Bankruptcy Court with instructions to enter partial summary judgment for the Creditors Committee as to the termination statement. The proceedings in the Bankruptcy Court thereafter continued with respect to, among other things, additional defenses asserted by JPMorgan Chase Bank, N.A. and the value of additional collateral on the Term Loan that was unaffected by the filing of the termination statement at issue. In addition, certain Term Loan lenders filed cross-claims in the Bankruptcy Court against JPMorgan Chase Bank, N.A. seeking indemnification and asserting various claims. In January 2019, the parties reached an agreement in principle to fully resolve the litigation, including the cross-claims filed against JPMorgan Chase. The agreement is subject to definitive documentation and court approval, and is not expected to have any material impact on JPMorgan Chase. The Bankruptcy Court has stayed all deadlines in the action to allow the parties to finalize the settlement agreement for submission to the Bankruptcy Court.

Interchange Litigation. A group of merchants and retail associations filed a series of class action complaints alleging that Visa and Mastercard, as well as certain banks, conspired to set the price of credit and debit card interchange fees and enacted respective rules in violation of antitrust laws. The parties settled the cases for a cash payment, a temporary reduction of credit card interchange, and modifications to certain credit card network rules. In December 2013, the District Court granted final approval of the settlement.

A number of merchants appealed the settlement to the United States Court of Appeals for the Second Circuit, which, in June 2016, vacated the District Court's certification of the class action and reversed the approval of the class settlement. In March 2017, the U.S. Supreme Court declined petitions seeking review of the decision of the Court of Appeals. The case was remanded to the District Court for further proceedings consistent with the appellate decision. The original class action was divided into two separate actions, one seeking primarily monetary relief and the other seeking primarily injunctive relief. In September 2018, the parties to the class action seeking monetary relief finalized an agreement which amends and supersedes the prior settlement agreement, and the plaintiffs filed a motion seeking preliminary approval of the modified settlement. Pursuant to this settlement, the defendants have collectively contributed an additional $900 million to the approximately $5.3 billion previously held in escrow from the original settlement. In January 2019, the amended agreement was preliminarily approved by the District Court, and formal notice of the class settlement is proceeding in accordance with the District Court's order. The class action seeking primarily injunctive relief continues separately.

In addition, certain merchants have filed individual actions raising similar allegations against Visa and Mastercard, as well as against JPMorgan Chase and other banks, and those actions are proceeding.

LIBOR and Other Benchmark Rate Investigations and Litigation. JPMorgan Chase has received subpoenas and requests for documents and, in some cases, interviews, from federal and state agencies and entities, including the U.S. Commodity Futures Trading Commission and various state attorneys general, as well as the European Commission ("EC"), the Swiss Competition Commission ("ComCo") and other regulatory authorities and banking associations around the world relating primarily to the process by which interest rates were submitted to the British Bankers Association ("BBA") in connection with the setting of the BBA's London Interbank Offered Rate ("LIBOR") for various currencies, principally in 2007 and 2008. Some of the inquiries also relate to similar processes by which information on rates was submitted to the European Banking Federation ("EBF") in connection with the setting of the EBF's Euro Interbank Offered Rate ("EURIBOR"). JPMorgan Chase continues to cooperate with these investigations to the extent that they are ongoing. ComCo's investigation relating to EURIBOR, to which JPMorgan Chase and other banks are subject, continues. In December 2016, the EC issued a decision against JPMorgan Chase and other banks finding an infringement of European antitrust rules relating to EURIBOR. JPMorgan Chase has filed an appeal of that decision with the European General Court, and that appeal is pending.

In addition, JPMorgan Chase has been named as a defendant along with other banks in a series of individual and putative class actions related to benchmarks filed in various United States District Courts, including three putative class actions relating to U.S. dollar LIBOR during the period that it was administered by ICE Benchmark Administration. These actions have been filed, or consolidated for pre-trial purposes, in the United States District Court for the Southern District of New York. In these actions, plaintiffs make varying allegations that in various periods, starting in 2000 or later, defendants either individually or collectively manipulated various benchmark rates by submitting rates that were artificially low or high. Plaintiffs allege that they transacted in loans, derivatives or other financial instruments whose values are affected by changes in these rates and assert a variety of claims including antitrust claims seeking treble damages. These matters are in various stages of litigation.

JPMorgan Chase has agreed to settle putative class actions related to exchange-traded Eurodollar futures contracts, Swiss franc LIBOR, EURIBOR, the Singapore Interbank Offered Rate, the Singapore Swap Offer Rate and the Australian Bank Bill Swap Reference Rate. Those settlements are all subject to further documentation and court approval.

In actions related to U.S. dollar LIBOR during the period that it was administered by the BBA, the District Court dismissed certain claims, including antitrust claims brought by some plaintiffs whom the District Court found did not have standing to assert such claims, and permitted certain claims to proceed, including antitrust claims, claims under the Commodity Exchange Act, claims under Section 10(b) of the Securities Exchange Act and common law claims. The plaintiffs whose antitrust claims were dismissed for lack of standing have filed an appeal. The District Court granted class certification of antitrust claims related to bonds and interest rate swaps sold directly by the defendants and denied class certification motions filed by other plaintiffs.

Municipal Derivatives Litigation. Several civil actions were commenced against JPMorgan Chase generally alleging that it had made payments to certain third parties in exchange for being chosen to underwrite warrants issued by Jefferson County, Alabama (the "County") and to act as the counterparty for certain swaps executed by the County. After the County filed for bankruptcy, the Bankruptcy Court confirmed a Plan of Adjustment which provided that all of these actions against JPMorgan Chase would be released and dismissed with prejudice. The Plan of Adjustment became effective, and these actions were dismissed in December 2013. The appeal by certain sewer rate payers of the Bankruptcy Court's order confirming the Plan of Adjustment has been dismissed, and the Supreme Court of the United States has denied the sewer rate payers' petition for review.

Metals Investigations and Litigation. Various authorities, including the Department of Justice's Criminal Division, are conducting investigations relating to trading practices in the metals markets and related conduct. JPMorgan Chase is responding to and cooperating with these investigations. Several putative class action complaints have been filed in the United States District Court for the Southern District of New York against JPMorgan Chase and certain current and former employees, alleging a precious metals futures and options price manipulation scheme in violation of the Commodity Exchange Act. Some of the complaints also allege unjust enrichment and deceptive acts or practices under the General Business Law of the State of New York. The Court consolidated these putative class actions in February 2019. JPMorgan Chase is also a defendant in a consolidated action filed in the United States District Court for the Southern District of New York alleging monopolization of silver futures in violation of the Sherman Act.

Wendel. Since 2012, the French criminal authorities have been investigating a series of transactions entered into by senior managers of Wendel Investissement ("Wendel") during the period from 2004 through 2007 to restructure their shareholdings in Wendel. JPMorgan Chase Bank, N.A., Paris branch provided financing for the transactions to a number of managers of Wendel in 2007. JPMorgan Chase has cooperated with the investigation. The investigating judges issued an *ordonnance de renvoi* in November 2016, referring JPMorgan Chase Bank, N.A. to the French *tribunal correctionnel* for alleged complicity in tax fraud. No date for trial has been set by the court. JPMorgan Chase has been successful in legal challenges made to the Court of Cassation, France's highest court, with respect to the criminal proceedings. In January 2018, the Paris Court of Appeal issued a decision cancelling the *mise en examen* of JPMorgan Chase Bank, N.A. The Court of Cassation ruled in September 2018 that a *mise en examen* is a prerequisite for an *ordonnance de renvoi* and remanded the case to the Court of Appeal to consider JPMorgan Chase Bank, N.A.'s application for the annulment of the *ordonnance de renvoi* referring JPMorgan Chase Bank, N.A. to the French *tribunal correctionnel*. Any further actions in the criminal proceedings are stayed pending the outcome of that application. In addition, a number of the managers have commenced civil proceedings against JPMorgan Chase Bank, N.A. The claims are separate, involve different allegations and are at various stages of proceedings.

* * *

In addition to the various legal proceedings discussed above, JPMorgan Chase and its subsidiaries, including in certain cases, JPMorgan Chase Bank, N.A., are named as defendants or are otherwise involved in a substantial number of other legal proceedings. JPMorgan Chase and

JPMorgan Chase Bank, N.A., each believe it has meritorious defenses to the claims asserted against it in its currently outstanding legal proceedings and it intends to defend itself vigorously. Additional legal proceedings may be initiated from time to time in the future.

JPMorgan Chase Bank, N.A. has established reserves for several hundred of its currently outstanding legal proceedings. In accordance with the provisions of U.S. GAAP for contingencies, JPMorgan Chase Bank, N.A. accrues for a litigation-related liability when it is probable that such a liability has been incurred and the amount of the loss can be reasonably estimated. JPMorgan Chase Bank, N.A. evaluates its outstanding legal proceedings each quarter to assess its litigation reserves, and makes adjustments in such reserves, upwards or downward, as appropriate, based on management's best judgment after consultation with counsel. During the year ended December 31, 2018, JPMorgan Chase Bank, N.A.'s legal expense was $75 million, and for the year ended December 31, 2017, it was a benefit of $(135) million. Where a particular litigation matter involves one or more subsidiaries or affiliates of JPMorgan Chase, JPMorgan Chase determines the appropriate allocation of legal expense among those subsidiaries or affiliates (including, where applicable, JPMorgan Chase Bank, N.A.). There is no assurance that JPMorgan Chase Bank N.A.'s litigation reserves will not need to be adjusted in the future.

In view of the inherent difficulty of predicting the outcome of legal proceedings, particularly where the claimants seek very large or indeterminate damages, or where the matters present novel legal theories, involve a large number of parties or are in early stages of discovery, JPMorgan Chase Bank, N.A. cannot state with confidence what will be the eventual outcomes of the currently pending matters, the timing of their ultimate resolution or the eventual losses, fines, penalties or consequences related to those matters. JPMorgan Chase Bank, N.A. believes, based upon its current knowledge and after consultation with counsel, consideration of the material legal proceedings described above and after taking into account its current litigation reserves and its estimated aggregate range of possible losses, that the other legal proceedings currently pending against it should not have a material adverse effect on JPMorgan Chase's Bank, N.A.'s consolidated financial condition. JPMorgan Chase Bank, N.A. notes, however, that in light of the uncertainties involved in such proceedings, there is no assurance that the ultimate resolution of these matters will not significantly exceed the reserves it has currently accrued or that a matter will not have material reputational consequences. As a result, the outcome of a particular matter may be material to JPMorgan Chase Bank, N.A.'s operating results for a particular period, depending on, among other factors, the size of the loss or liability imposed and the level of JPMorgan Chase Bank, N.A.'s income for that period.

Note 28 – Business changes and developments

Subsequent events

On May 18, 2019, JPMorgan Chase merged its wholly owned subsidiary, Chase Bank USA, National Association ("Chase Bank USA, N.A."), with and into JPMorgan Chase Bank, N.A., with JPMorgan Chase Bank, N.A. as the surviving bank. Refer to Note 1 for additional details related to the Merger.

JPMorgan Chase Bank, N.A. has performed an evaluation of events that have occurred subsequent to December 31, 2018, and through May 22, 2019 (the date the financial statements were available to be issued). Other than the Merger event described above, there have been no material subsequent events that occurred during such period that would require disclosure or recognition in JPMorgan Chase Bank, N.A.'s Consolidated Financial Statements as of December 31, 2018.

2018 Form 10-K: JPMorgan Chase & Co's Annual report on Form 10-K for year ended December 31, 2018, filed with the U.S. Securities and Exchange Commission.

ABS: Asset-backed securities

AFS: Available-for-sale

AOCI: Accumulated other comprehensive income/(loss)

ARM: Adjustable rate mortgage(s)

Beneficial interests issued by consolidated VIEs: Represents the interest of third-party holders of debt, equity securities, or other obligations, issued by VIEs that JPMorgan Chase Bank, N.A. consolidates.

Benefit obligation: Refers to the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for OPEB plans.

BHC: Bank holding company

CCP: "Central counterparty" is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts. A CCP becomes counterparty to trades with market participants through novation, an open offer system, or another legally binding arrangement.

CDS: Credit default swaps

CET1 Capital: Common equity Tier 1 capital

CFO: Chief Financial Officer

CFTC: Commodity Futures Trading Commission

Chase Bank USA, N.A.: Chase Bank USA, National Association

CLO: Collateralized loan obligations

Collateral-dependent: A loan is considered to be collateral-dependent when repayment of the loan is expected to be provided solely by the underlying collateral, rather than by cash flows from the borrower's operations, income or other resources.

Credit derivatives: Financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity) which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Upon the occurrence of a credit event by the reference entity, which may include, among other events, the bankruptcy or failure to pay its obligations, or certain restructurings of the debt of the reference entity, neither party has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value at the time of settling the credit derivative contract. The determination as to whether a credit event has occurred is generally made by the relevant International Swaps and Derivatives Association ("ISDA") Determinations Committee.

Criticized: Criticized loans, lending-related commitments and derivative receivables that are classified as special mention, substandard and doubtful categories for regulatory purposes and are generally consistent with a rating of CCC+/Caa1 and below, as defined by S&P and Moody's.

CRO: Chief Risk Officer

CVA: Credit valuation adjustment

DRPC: Board of Directors' Risk Policy Committee

DVA: Debit valuation adjustment

EC: European Commission

Embedded derivatives: are implicit or explicit terms or features of a financial instrument that affect some or all of the cash flows or the value of the instrument in a manner similar to a derivative. An instrument containing such terms or features is referred to as a "hybrid." The component of the hybrid that is the non-derivative instrument is referred to as the "host." For example, callable debt is a hybrid instrument that contains a plain vanilla debt instrument (i.e., the host) and an embedded option that allows the issuer to redeem the debt issue at a specified date for a specified amount (i.e., the embedded derivative). However, a floating rate instrument is not a hybrid composed of a fixed-rate instrument and an interest rate swap.

ERISA: Employee Retirement Income Security Act of 1974

ETD: "Exchange-traded derivatives": Derivative contracts that are executed on an exchange and settled via a central clearing house.

Fannie Mae: Federal National Mortgage Association

FASB: Financial Accounting Standards Board

FDIA: Federal Depository Insurance Act

FDIC: Federal Deposit Insurance Corporation

Federal Reserve: The Board of the Governors of the Federal Reserve System

FFIEC: Federal Financial Institutions Examination Council

FHA: Federal Housing Administration

FHLB: Federal Home Loan Bank

FICC: The Fixed Income Clearing Corporation

FICO score: A measure of consumer credit risk provided by credit bureaus, typically produced from statistical models by Fair Isaac Corporation utilizing data collected by the credit bureaus.

FVA: Funding valuation adjustment

FX: Foreign exchange

G7: Group of Seven nations: Countries in the G7 are Canada, France, Germany, Italy, Japan, the U.K. and the U.S.

G7 government bonds: Bonds issued by the government of one of the G7 nations.

Ginnie Mae: Government National Mortgage Association

GSE: Fannie Mae and Freddie Mac

HELOAN: Home equity loan

HELOC: Home equity line of credit

Home equity – senior lien: Represents loans and commitments where JPMorgan Chase Bank, N.A. holds the first security interest on the property.

Home equity – junior lien: Represents loans and commitments where JPMorgan Chase Bank, N.A. holds a security interest that is subordinate in rank to other liens.

HTM: Held-to-maturity

IDI: Insured depository institutions

Impaired loan: Impaired loans are loans measured at amortized cost, for which it is probable that JPMorgan Chase Bank, N.A. will be unable to collect all amounts due, including principal and interest, according to the contractual terms of the agreement. Impaired loans include the following:

- All wholesale nonaccrual loans
- All TDRs (both wholesale and consumer), including ones that have returned to accrual status

Interchange income: Fees earned by credit and debit card issuers on sales transactions.

Investment-grade: An indication of credit quality based on JPMorgan Chase Bank, N.A.'s internal risk assessment system. "Investment grade" generally represents a risk profile similar to a rating of a "BBB-"/"Baa3" or better, as defined by independent rating agencies.

ISDA: International Swaps and Derivatives Association

JPMorgan Chase: JPMorgan Chase & Co.

JPMorgan Chase Bank, N.A.: JPMorgan Chase Bank, National Association

LGD: Loss given default

LIBOR: London Interbank Offered Rate

LTIP: Long-term incentive plan

LTV: "Loan-to-value": For residential real estate loans, the relationship, expressed as a percentage, between the principal amount of a loan and the appraised value of the collateral (i.e., residential real estate) securing the loan.

Origination date LTV ratio

The LTV ratio at the origination date of the loan. Origination date LTV ratios are calculated based on the actual appraised values of collateral (i.e., loan-level data) at the origination date.

Current estimated LTV ratio

An estimate of the LTV as of a certain date. The current estimated LTV ratios are calculated using estimated collateral values derived from a nationally recognized home price index measured at the metropolitan statistical area ("MSA") level. These MSA-level home price indices consist of actual data to the extent available and forecasted data where actual data is not available. As a result, the estimated collateral values used to calculate these ratios do not represent actual appraised loan-level collateral values; as such, the resulting LTV ratios are necessarily imprecise and should therefore be viewed as estimates.

Combined LTV ratio

The LTV ratio considering all available lien positions, as well as unused lines, related to the property. Combined LTV ratios are used for junior lien home equity products.

Master netting agreement: A single agreement with a counterparty that permits multiple transactions governed by that agreement to be terminated or accelerated and settled through a single payment in a single currency in the event of a default (e.g., bankruptcy, failure to make a required payment or securities transfer or deliver collateral or margin when due).

Measurement alternative: Measures equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer.

Merger: On May 18, 2019, JPMorgan Chase merged its wholly-owned subsidiary, Chase Bank USA, N.A. with and into JPMorgan Chase Bank, N.A., with JPMorgan Chase Bank, N.A. as the surviving bank.

MBS: Mortgage-backed securities

Moody's: Moody's Investor Services

Mortgage product types:

Alt-A

Alt-A loans are generally higher in credit quality than subprime loans but have characteristics that would disqualify the borrower from a traditional prime loan. Alt-A lending characteristics may include one or more of the following: (i) limited documentation; (ii) a high combined loan-to-value ("CLTV") ratio; (iii) loans secured by non-owner occupied properties; or (iv) a debt-to-income ratio above normal limits. A substantial proportion of JPMorgan Chase Bank, N.A.'s Alt-A loans are those where a borrower does not provide complete documentation of his or her assets or the amount or source of his or her income.

Option ARMs

The option ARM real estate loan product is an adjustable-rate mortgage loan that provides the borrower with the option each month to make a fully amortizing, interest-only or minimum payment. The minimum payment on an option ARM loan is based on the interest rate charged during the introductory period. This introductory rate is usually significantly below the fully indexed rate. The fully indexed rate is calculated using an index rate plus a margin. Once the introductory period ends, the contractual interest rate charged on the loan increases to the fully indexed rate and adjusts monthly to reflect movements in the index. The minimum payment is typically insufficient to cover interest accrued in the prior month, and any unpaid interest is deferred and added to the principal balance of the loan. Option ARM loans are subject to payment recast, which converts the loan to a variable-rate fully amortizing loan upon meeting specified loan balance and anniversary date triggers.

Prime

Prime mortgage loans are made to borrowers with good credit records who meet specific underwriting requirements, including prescriptive requirements related to income and overall debt levels. New prime mortgage borrowers provide full documentation and generally have reliable payment histories.

Subprime

Subprime loans are loans that, prior to mid-2008, were offered to certain customers with one or more high risk characteristics, including but not limited to: (i) unreliable or poor payment histories; (ii) a high LTV ratio of greater than 80% (without borrower-paid mortgage insurance); (iii) a high debt-to-income ratio; (iv) an occupancy type for the loan is other than the borrower's primary residence; or (v) a history of delinquencies or late payments on the loan.

MSA: Metropolitan statistical areas

MSR: Mortgage servicing rights

NA: Data is not applicable or available for the period presented.

NAV: Net Asset Value

Net mortgage servicing revenue: Includes operating revenue earned from servicing third-party mortgage loans which is recognized over the period in which the service is provided, changes in the fair value of MSRs and the impact of risk management activities associated with MSRs.

Net production revenue: Includes fees and income recognized as earned on mortgage loans originated with the intent to sell; the impact of risk management activities associated with the mortgage pipeline and warehouse loans; and changes in the fair value of any residual interests held from mortgage securitizations. Net production revenue also includes gains and losses on sales of mortgage loans, lower of cost or fair value adjustments on mortgage loans held-for-sale, changes in fair value on mortgage loans originated with the intent to sell and measured at fair value under the fair value option, as well as losses recognized as incurred related to repurchases of previously sold loans.

NOL: Net operating loss

Nonaccrual loans: Loans for which interest income is not recognized on an accrual basis. Loans (other than credit card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest have been in default for a period of 90 days or more unless the loan is both well-secured and in the process of collection. Collateral-dependent loans are typically maintained on nonaccrual status.

OAS: Option-adjusted spread

OCC: Office of the Comptroller of the Currency

OCI: Other comprehensive income/(loss)

OPEB: Other postretirement employee benefit

Over-the-counter ("OTC") derivatives: Derivative contracts that are negotiated, executed and settled bilaterally between two derivative counterparties, where one or both counterparties is a derivatives dealer.

Over-the-counter cleared ("OTC-cleared") derivatives: Derivative contracts that are negotiated and executed bilaterally, but subsequently settled via a central clearing house, such that each derivative counterparty is only exposed to the default of that clearing house.

OTTI: Other-than-temporary impairment

PCI: "Purchased credit-impaired" loans represents certain loans that were acquired and deemed to be credit-impaired on the acquisition date in accordance with the guidance of the FASB. The guidance allows purchasers to aggregate credit-impaired loans acquired in the same fiscal quarter into one or more pools, provided that the loans have common risk characteristics(e.g., product type, LTV ratios, FICO scores, past due status, geographic location). A pool is then accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows.

PD: Probability of default

Principal transactions revenue: Principal transactions revenue is driven by many factors, including the bid-offer spread, which is the difference between the price at which JPMorgan Chase Bank, N.A. is willing to buy a financial or other instrument and the price at which JPMorgan Chase Bank, N.A. is willing to sell that instrument. It also consists of realized (as a result of closing out or termination of transactions, or interim cash payments) and unrealized (as a result of changes in valuation) gains and losses on financial and other instruments (including those accounted for under the fair value option) primarily used in client-driven market-making activities and on private equity investments. In connection with its client-driven market-making activities, JPMorgan Chase Bank, N.A. transacts in debt and equity instruments, derivatives and commodities (including physical commodities inventories and financial instruments that reference commodities).

Principal transactions revenue also includes certain realized and unrealized gains and losses related to hedge accounting and specified risk-management activities, including: (a) certain derivatives designated in qualifying hedge accounting relationships (primarily fair value hedges of commodity and foreign exchange risk), (b) certain derivatives used for specific risk management purposes, primarily to mitigate credit risk and foreign exchange risk, and (c) other derivatives.

PSU(s): Performance share units

REIT: “Real estate investment trust”: A special purpose investment vehicle that provides investors with the ability to participate directly in the ownership or financing of real-estate related assets by pooling their capital to purchase and manage income property (i.e., equity REIT) and/or mortgage loans (i.e., mortgage REIT). REITs can be publicly or privately held and they also qualify for certain favorable tax considerations.

Receivables from customers: Primarily represents held-for-investment margin loans to brokerage customers that are collateralized through assets maintained in the clients’ brokerage accounts, as such no allowance is held against these receivables. These receivables are reported within accrued interest and accounts receivable on JPMorgan Chase Bank, N.A.’s Consolidated balance sheets.

REO: Real estate owned

Retained loans: Loans that are held-for-investment (i.e., excludes loans held-for-sale and loans at fair value).

RHS: Rural Housing Service of the U.S. Department of Agriculture

Risk-rated portfolio: Credit loss estimates are based on estimates of the probability of default (“PD”) and loss severity given a default. The probability of default is the likelihood that a borrower will default on its obligation; the loss given default (“LGD”) is the estimated loss on the loan that would be realized upon the default and takes into consideration collateral and structural support for each credit facility.

RWA: “Risk-weighted assets”: Basel III establishes two comprehensive approaches for calculating RWA (a Standardized approach and an Advanced approach) which include capital requirements for credit risk, market risk, and in the case of Basel III Advanced, also operational risk. Key differences in the calculation of credit risk RWA between the Standardized and Advanced approaches are that for Basel III Advanced, credit risk RWA is based on risk-sensitive approaches which largely rely on the use of internal credit models and parameters, whereas for Basel III Standardized, credit risk RWA is generally based on supervisory risk-weightings which vary primarily by counterparty type and asset class. Market risk RWA is calculated on a generally consistent basis between Basel III Standardized and Basel III Advanced.

RSU(s): Restricted stock units

S&P: Standard and Poors

SAR(s): Stock appreciation rights

SEC: Securities and Exchange Commission

SLR: Supplementary leverage ratio

SMBS: Stripped mortgage-backed securities

SPEs: Special purpose entities

Structured notes: Structured notes are financial instruments whose cash flows are linked to the movement in one or more indexes, interest rates, foreign exchange rates, commodities prices, prepayment rates, or other market variables. The notes typically contain embedded (but not separable or detachable) derivatives. Contractual cash flows for principal, interest, or both can vary in amount and timing throughout the life of the note based on non-traditional indexes or non-traditional uses of traditional interest rates or indexes.

TDR: “Troubled debt restructuring” is deemed to occur when JPMorgan Chase Bank, N.A. modifies the original terms of a loan agreement by granting a concession to a borrower that is experiencing financial difficulty.

U.K.: United Kingdom

Unaudited: Financial statements and information that have not been subjected to auditing procedures sufficient to permit an independent certified public accountant to express an opinion.

U.S.: United States of America

U.S. GAAP: Accounting principles generally accepted in the U.S.

U.S. government-sponsored enterprises (“U.S. GSEs”) and U.S. GSE obligations: In the U.S., GSEs are quasi-governmental, privately held entities established by Congress to improve the flow of credit to specific sectors of the economy and provide certain essential services to the public. U.S. GSEs include Fannie Mae and Freddie Mac, but do not include Ginnie Mae, which is directly owned by the U.S. Department of Housing and Urban Development. U.S. GSE obligations are not explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government.

U.S. Treasury: U.S. Department of the Treasury

VA: U.S. Department of Veterans Affairs

VCG: Valuation Control Group

VGF: Valuation Governance Forum

VIEs: Variable interest entities

Warehouse loans: Consist of prime mortgages originated with the intent to sell that are accounted for at fair value and classified as trading assets.

２）業務及び財産の状況に関する事項（日本語訳抜粋）

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション

業務概要

2018年12月31日終了事業年度

以下は、ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーションの2018年12月31日に終了した事業年度の業績の要約である。

純利益は2017年度の196億ドルに対し、2018年度は47%増の290億ドルであった。収益合計は2017年度の909億ドルに対し、2018年度は10%増の999億ドルとなった。

与信損失引当金繰入額は、2017年度の53億ドルの繰入に対し、2018年度は8%減少し49億ドルの繰入となった。

利息以外の費用は、2017年度の534億ドルに対し、2018年度は8%増の576億ドルであった。法人所得税は2017年度の125億ドルに対し、2018年度は33%減少し84億ドルとなった。

2018年12月31日現在、総資産は2017年から3%増の2.3兆ドルであった。2018年12月31日現在、総負債は2017年から3%増の2.0兆ドルであった。2018年12月31日現在、株主持分合計は、2017年度の、2,461億ドルに対し、2%増の2,508億ドルとなった。

３）連結損益計算書及び連結貸借対照表

3.1 連結損益計算書

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション
（ジェー・ピー・モルガン・チェース・アンド・カンパニーの全額出資子会社）

12 月 31 日終了事業年度（百万ドル）	2018 年	2017 年
収益		
投資銀行業務関連の収益	3,368	3,419
自己勘定取引	11,814	9,883
貸出金および預金関連収益	6,057	5,941
資産運用、管理および手数料	11,029	10,358
有価証券利益	(395)	(73)
モーゲージ報酬および関連利益	1,253	1,616
クレジットカード収益	4,989	4,433
その他の収益	5,612	4,341
利息以外の収益	43,727	39,918
受入利息	68,959	58,877
支払利息	12,802	7,903
正味受入利息	56,157	50,974
収益合計(純額)	99,884	90,892
与信損失引当金繰入額(戻入額)	4,872	5,298

3.1 連結損益計算書(続き)

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション

(ジェー・ピー・モルガン・チェース・アンド・カンパニーの全額出資子会社)

12月31日終了事業年度(百万ドル)	2018年	2017年
利息以外の費用		
報酬費用	26,541	24,933
不動産関連費用	3,801	3,504
テクノロジー、通信および機器関連費用	8,404	7,328
専門家報酬および外部業務委託費用	5,839	5,420
マーケティング費用	3,145	2,793
その他の費用	9,904	9,448
利息以外の費用合計	57,634	53,426
法人所得税控除前利益	37,378	32,168
法人所得税	8,425	12,528
当期純利益	28,953	19,640

Chase Bank USA, N.A.との合併を反映するため、2018年及び2017年の連結財務諸表は再表示されました。

2018年1月1日よりジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーションはいくつか新しい会計基準を適用しております。

上記合併と新しい会計基準の詳細については、Note1をご参照下さい。

3.2 連結貸借対照表

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション
(ジェー・ピー・モルガン・チェース・アンド・カンパニーの全額出資子会社)

12 月 31 日終了事業年度（百万ドル）	2018 年	2017 年
資産		
現金および無利息銀行預け金	21,611	25,279
有利息銀行預け金	255,135	404,618
フェデラル・ファンド貸出金および売戻条件付買入有価証券	275,476	155,214
借入有価証券	45,335	39,009
トレーディング資産	264,533	249,223
有価証券	260,146	247,097
貸出金	983,133	929,642
貸倒引当金	(13,425)	(13,544)
貸倒引当金控除後貸出金	969,708	916,098
未収利息および未収入金	49,966	48,682
土地・建物および設備	14,700	13,815
のれん・モーゲージ・サービシング権およびその他の無形固定資産	45,970	45,994
その他の資産	88,900	79,816
資産合計	2,291,480	2,224,845

3.2 連結貸借対照表(続き)

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション
(ジェー・ピー・モルガン・チェース・アンド・カンパニーの全額出資子会社)

12 月 31 日終了事業年度（百万ドル）	2018 年	2017 年
負債		
預金	1.557,411	1,535,551
フェデラル・ファンド借入金および買戻条件付貸付または売却有価証券	107,809	94,472
その他の借入金	21,846	8,993
トレーディング負債	113,887	96,661
未払金およびその他の負債	109,152	99,814
連結変動持分事業体により発行された受益権	20,310	26,131
長期社債	110,236	117,073
負債合計	2,040,651	1,978,695

3.2 連結貸借対照表(続き)

ジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーション

(ジェー・ピー・モルガン・チェース・アンド・カンパニーの全額出資子会社)

12月31日終了事業年度(百万ドル)	2018年	2017年
株主持分		
優先株式	–	–
普通株式	2,028	2,028
資本剰余金	123,792	118,898
利益剰余金	126,622	123,849
その他の包括利益累計額	(1,613)	1,375
株主持分合計	250,829	246,150
負債および株主持分合計	2,291,480	2,224,845

Chase Bank USA, N.A.との合併を反映するため、2018年及び2017年の連結財務諸表は再表示されました。

2018年1月1日よりジェー・ピー・モルガン・チェース・バンク・ナショナル・アソシエーションはいくつか新しい会計基準を適用しております。

上記合併と新しい会計基準の詳細については、Note1をご参照下さい。