Moody's Analytics

ANALYSIS

August 2019

Prepared by

Deniz Tudor
Deniz.Tudor@moodys.com
Senior Director

Michael Brisson
Michael.Brisson@moodys.com
Senior Economist

Contact Us

Email
help@economy.com

U.S./Canada
+1.866.275.3266

EMEA
+44.20.7772.5454 (London)
+420.224.222.929 (Prague)

Asia/Pacific
+852.3551.3077

All Others
+1.610.235.5299

Web
www.economy.com
www.moodysanalytics.com

A Comparative Analysis of Household Credit Data From the New York Fed and Moody's Analytics

Introduction

The importance of accurate and timely data on household credit conditions became clear during the global financial crisis. Quickly rising delinquencies and foreclosures should have been a warning to lenders and regulators to significantly tighten the spigot on new lending that was wide open during the pre-crisis boom. However, partially due to data limitations, many financial institutions were surprised by the weakening of household balance sheets. By the time they realized the severity of the problem, it was too late to act.

A Comparative Analysis of Household Credit Data From the New York Fed and Moody's Analytics

BY DENIZ TUDOR AND MICHAEL BRISSON

The importance of accurate and timely data on household credit conditions became clear during the global financial crisis. Quickly rising delinquencies and foreclosures should have been a warning to lenders and regulators to significantly tighten the spigot on new lending that was wide open during the pre-crisis boom. However, partially due to data limitations, many financial institutions were surprised by the weakening of household balance sheets. By the time they realized the severity of the problem, it was too late to act.

In response to the lack of visibility in the lead-up to the financial crisis, data providers have stepped in to make household credit conditions more transparent. Two data providers in particular have become the main sources of information for the consumer credit industry and financial media: the Federal Reserve Bank of New York's Consumer Credit Panel and CreditForecast.com, a joint venture of Moody's Analytics and credit bureau Equifax. Although consumer credit reports from Equifax are the basis for both data sources, a closer examination of these data sources reveals significant differences between them. In this paper, we review those differences and how they may affect assessments of the health of household finances.

The principal differences between these two data sources include:

1. Definition of performance metrics
2. Classification codes
3. Handling of joint accounts
4. Scope of data
5. Frequency of data
6. Sample versus population
7. Forecasts

We will explain each of these differences and show how they may result in different interpretations of household credit conditions.

Definition of performance metrics

Perhaps the most significant difference in data treatment between the two data sources—and certainly the one that causes the most confusion among users of the data—is the definition of default. The New York Fed's definition of default includes any repossession, foreclosure or charge-off as long as the lender reports them to the credit bureaus, which could occur for many years after the actual default.[1] In CreditForecast.com, a default is also a repossession, foreclosure or charge-off, but only when it first appears on the credit file. Both the New York Fed and CreditForecast.com report personal bankruptcy separately.

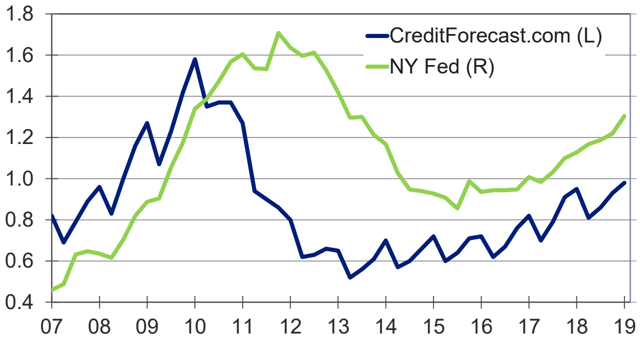
The New York Fed's practice of including repossessions, foreclosures and charged-off loans in its measure of severely derogatory for as long as they remain on the credit file is problematic when assessing the current financial health of households and credit conditions more broadly. It reflects, in significant part, credit conditions years in the past, which can be misleading. Take the current period, for example, as defaults are low across all types of loans, reflecting extraordinarily low unemployment, record-low household debt service payments, and generally prudent underwriting standards since the financial crisis. These excellent credit conditions are reflected clearly in the CreditForecast.com data, but not in the New York Fed's data.[2] This becomes even more important when we are at a turning point in the credit cycle. Defaults in CreditForecast.com will turn up quickly when conditions are eroding, and long before they show up as severely derogatory in the New York Fed

1 Reporting to Equifax by lenders can vary, as lenders may continue to attempt to collect on the debt or they continue to report until they sell the loan to a third-party collection agency. The New York Fed makes no adjustments in this regard; it includes a loan in its data as long as it is reported on a credit file.

2 See "Household Credit Conditions Never Better," Mark Zandi, Moody's Analytics white paper, July 2019.

Chart 1: Auto Loans Not as Risky

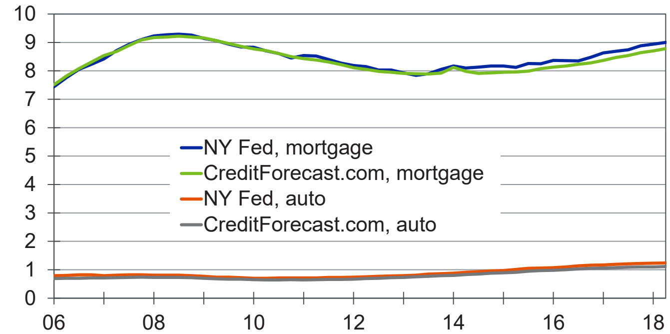
90dpd + 120dpd + write-offs, % of outstanding balance



Sources: Equifax, NY Fed, Moody's Analytics

Chart 2: Matching Product Categories

Household credit balances by product type, $ tril



Sources: CreditForecast.com, NY Fed, Moody's Analytics

data, which will continue to reflect the better credit conditions prior to the weakening in credit quality.

A good example of the difference in the measurement of loans more than 90 days delinquent in the auto market can be seen in Chart 1. According to CreditForecast.com, current combined delinquency and default rates on auto loans are meaningfully lower than those reported by the New York Fed.[3] And although there has been an increase in default rates according to CreditForecast.com, the rates are still near pre-crisis lows. The definitional differences are also apparent with regard to when defaults peaked after the crisis, which happened in the CreditForecast.com data long before it did in the New York Fed data.[4]

Another definitional difference between the two data sources pertains to mortgage foreclosure. The New York Fed publishes foreclosures started each quarter based on information provided by lenders as well as from public records. The New York Fed's foreclosure definition reads "the number of individuals with foreclosures first appearing on their credit report during the past three months."[5] CreditForecast.com also reports foreclosures that have started each month, but they are based on the number of trades reported by financial institutions and not public record information. These technical differences may increase CreditForecast.com's reported foreclosures started compared with those reported by the New York Fed.

Classification codes

CreditForecast.com data are generally based on more current product classification codes from Equifax than those used by the New York Fed. Given the evolution of consumer credit products and enhancements to reporting systems, reliance on an older classification system may lead to misleading results and conclusions or, at the very least, confusion. For example, the rapid growth of fintech and alternative lenders has introduced a wide range of new consumer-loan products—some of which share features with revolving accounts while others look more like traditional unsecured personal loans. These product classifications need to be continuously updated to capture these changes.[6]

The use of older product classification codes does not materially impact the credit data for every product category, as shown in Chart 2 for mortgages and auto loans. However, given the significant number of available product breakdowns provided by CreditForecast.com, many product categories cannot be matched to the New York Fed's product classifications. This is illustrated in Chart 3 for bankcard balances. CreditForecast.com includes only card products, while the New York Fed also includes revolving accounts at banks, credit unions, and savings and loans associations.

Handling of joint accounts

Another difference between the CreditForecast.com and New York Fed data is that the New York Fed does not always eliminate duplicate data for joint accounts when determining the number of trades. This makes the New York Fed data a person-based, not a loan- or trade-based, measure. CreditForecast.com dedupes its data, so instead of showing two individuals on a joint loan, loans are assigned to one person to prevent double-counting of the loan. This is often important when the same loan appears on credit reports for both a husband and a wife. Whether the data are deduped can impact reported defaults and default rates, and the impact can vary based on where we are in the business cycle. Chart 4 shows the difference in the number of trades for different product categories. Failure to dedupe joint accounts, along with not dropping charged-off accounts, causes the New York Fed data to show a higher number of accounts than the CreditForecast.com data.[7]

3 An analysis of credit conditions in auto lending is provided in "What Drives U.S. Auto Loan Delinquencies?" Cristian DeRitis, Moody's Analytics white paper.

4 The New York Fed's definition of default also significantly reduces the actual seasonality in the data.

5 Please see the New York Fed data dictionary on https://www.newyorkfed.org/medialibrary/interactives/householdcredit/data/pdf/data_dictionary_HHDC.pdf as well as Avery, et al. 2003, https://www.federalreserve.gov/pubs/bulletin/2003/0203lead.pdf for definitions of foreclosures and more details on public records.

6 One example of the importance of using updated classification codes involves retail cards, consumer finance and other loans. The New York Fed combines these three products even though they have significantly different performance behavior. Similarly, there is some confusion about the classification of home equity loans in the New York Fed data, such as what constitutes first mortgages versus home equity loans.

7 The New York Fed notes that it does dedupe when determining loan balances. However, determining when the New York Fed dedupes and when it does not is difficult to discern from the available documentation.

Scope of data

The data available from CreditForecast.com are broader in scope than those publicly available from the New York Fed. CreditForecast.com provides data for the nation, states, metropolitan areas and U.S. territories, while the New York Fed provides data for the nation and states. CreditForecast.com also provides data for 24 product breakouts, compared with seven in the New York Fed data (see Table 1). Furthermore, CreditForecast.com breaks down volume and credit performance measures for each of the 24 products based on borrower and loan characteristics, including:

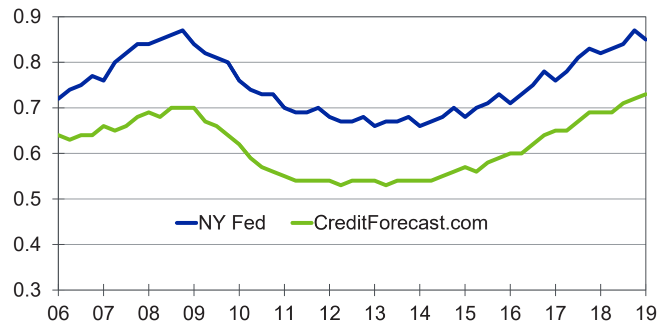
- Quarter of loan origination (or "vintage")
- Credit score category[8]
- Loan term
- Geography[9]
- Borrower's income at origination
- Borrower's age at origination

CreditForecast.com also provides information on performance, including delinquencies, defaults, prepayments, etc., origination volumes, and outstanding balances for the combination of each of these characteristics (see Table 2). In contrast, the New York Fed provides a breakout across a more limited number of credit risk-score bands (<620, 620-659, 660-719, 720-759, 760+) for auto and mortgage products only. Moreover, the New York Fed's risk score breakout is only provided for originations, and not for any credit performance metrics.

The more limited scope of the New York Fed data can make it harder to interpret developing consumer credit trends. For instance, the more granular data available from CreditForecast.com reveal that the deterioration in auto loan quality several years ago was mainly caused by deep subprime borrowers with risk scores of less than 580. It should be noted that more recently the performance of deep subprime auto borrowers is stabilizing (see Chart 5).

Chart 3: Bankcard Balances Differ

Total bankcard balance, $ tril



Sources: CreditForecast.com, NY Fed, Moody's Analytics

Frequency of data

CreditForecast.com releases updates each month, while the New York Fed data are released quarterly. Moreover, whereas CreditForecast.com provides data for all states, metropolitan areas and territories, including Puerto Rico, on a monthly basis, the New York Fed provides data quarterly for the largest states and data for all states only on an annual basis.[10]

The timeliness of the CreditForeast.com data helps both policymakers and other decision-makers determine the best course of action when faced with issues such as the aftermath of natural disasters and external events such as government shutdowns. By providing less data for a limited number of segments with fewer updates, the New York Fed's data are less useful. A more complete look at the frequency of data and data coverage is shown in Table 3.

Sample versus population

The New York Fed data are based on up to a 5%[11] sample of borrowers through a

8 CreditForecast.com is based on Vantage Score 3.0 and categorizes loans into the following ranges: 300-529, 530-579, 580-619, 620-659, 660-699, 700-719, 720-739, 740-779, 780-809 and 810-850. The New York Fed data use Equifax Risk Score 3.0. Vantage Score is a more widely used score compared with Equifax's proprietary Equifax Risk Score and is produced based on data from the three U.S. credit bureaus: Transunion, Experian and Equifax.

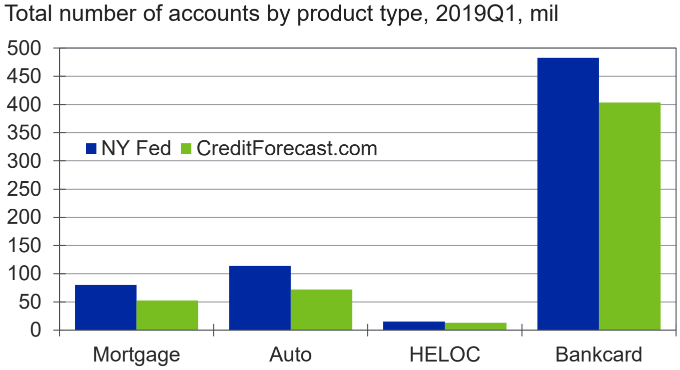
9 The account owner's state and metropolitan area may change as she changes addresses to reflect the local economy's impact on consumer credit behavior and payment performance. This address change seems to be observed in both datasets.

10 The New York Fed is likely limited in the amount of regional data it is able to provide due to its 5% sample.

11 The sample size used by the New York Fed appears to depend on what it is used for, including presentations; different performance metrics such as foreclosures and bankruptcy; and different product lines such as student loans.

Chart 4: Differences in Number of Trades

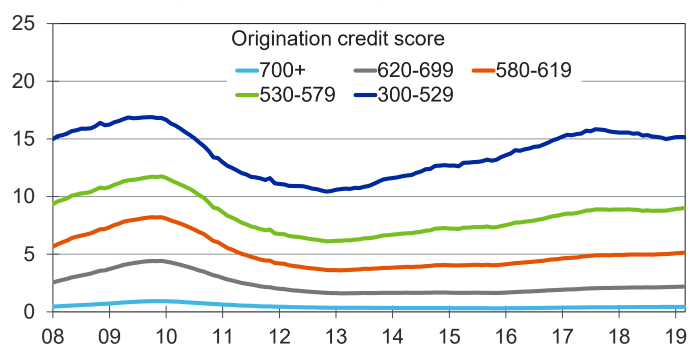
Total number of accounts by product type, 2019Q1, mil



Sources: Equifax, New York Fed, Moody's Analytics

Chart 5: Auto Quality Stabilizing for Riskiest

Auto default rate, % of dollar volume, 12-mo MAAR



Sources: Equifax, Moody's Analytics

Table 1: Product Comparison of CreditForecast.com vs. NY Fed Consumer Credit Panel

Product coverage	CreditForecast.com	NY Fed Consumer Credit Panel
Auto total	X	N/A
Auto bank total	X	N/A
Auto bank loan	X	N/A
Auto bank lease	X	N/A
Auto finance total	X	N/A
Auto finance loan	X	N/A
Auto finance lease	X	N/A
Auto loan total	X	X
Auto lease total	X	N/A
Bankcard (credit card)	X	X
Consumer finance total	X	N/A
Consumer finance revolving	X	N/A
Consumer finance installment	X	Grouped with “other” loans
Retail card	X	Grouped with “other” loans
Residential total	First mortgages + HELOAN + HELOC	First mortgages + HELOAN
First mortgage	X	Grouped with “residential total” loans
Home equity total	X	N/A
Home equity installment (HELOAN)	X	Grouped with “residential total” loans
Home equity revolving (HELOC)	X	X
Student loan total	X	X
Student loan deferred	X	N/A
Student loan nondeferred	X	N/A
Other	Other installment	Other installment + consumer installment + retail
Total (all products)	X	X

Source: Moody's Analytics

Table 2: Performance Metrics of CreditForecast.com vs. NY Fed Consumer Credit Panel

Performance metrics	CreditForecast.com	NY Fed Consumer Credit Panel
Total outstanding number of trades	X	X (not deduped)
Total outstanding balance in dollars	X	X
Current number of trades	X	X (not deduped)
Current balance in dollars	X	N/A
Total delinquent, 30 DPD, 60 DPD, 90 DPD, 120+ DPD or collections number of trades	X	X
Total delinquent, 30 DPD, 60 DPD, 90 DPD, 120+ DPD or collections balance in dollars	X	X
Number of trades that are in default, bankruptcy (or closed positive)	X (terminal status)	N/A
Balance in dollars of loans that are in default, bankruptcy (or closed positive)	X (terminal status)	N/A
Foreclosures (started for residential products)	X (trades)	X (individuals)
Number of trades with positive balances	X	N/A
Scheduled payment amount in dollars	X	N/A
High credit (credit limit) in dollars	X	X
Utilization rates	X	X
Number of new accounts in last year	X	X
Number of closed accounts in last year	X	X
Total number of inquiries in last six months	N/A	X
Total severely derogatory number of trades	N/A	X
Total severely derogatory balance in dollars	N/A	X
Transition into 30+, 90+ DPD % of balance	N/A	X
Transition rate into current, 30-60, 90+ DPD number of trades	N/A	X
Third-party collections, % of consumers	N/A	X
Third-party collections, avg collection balance in dollars	N/A	X

Source: Moody's Analytics

Table 3: Frequency of Data and Data Coverage

Coverage	CreditForecast.com	NY Fed Consumer Credit Panel
Updates	Monthly	Quarterly
Data size	100% of Equifax national consumer data	0.01% to 5% random sample
Geographic granularity	National, state, MSA	National, selected states
Transition rates	N/A	Into 90+, (mortgage into 30-60 and 90+)
Third-party collections	N/A	National by % of consumers and avg collection amount
Products covered: Balances	24 products	Seven products
Products covered: Accounts	24 products	Four products
Utilization rates	Available for all revolving accounts	Available for two product categories
Defaults/write-offs	24 products	Not available as terminal status
Bankruptcies	24 products	Number of individuals
Foreclosures started	Number of trades	Number of individuals
Origination risk-score segments	10 segments	Five segments
Origination vintages	1996-current	N/A
Borrower age segments	Seven segments	N/A
Borrower income segments	Six segments	N/A
Contractual term/maturation segments	Available for all installment products	N/A
Current risk-score segments	Available	N/A
Forecasts	Updated quarterly	N/A
Additional analysis	Quarterly outlook webinars, quarterly in-depth product analysis with outlook, and monthly data update analysis, ad hoc articles	Quarterly data update analysis

Sources: CreditForecast.com, NY Fed, Moody's Analytics

dynamically updated random sample of Social Security numbers obtained from Equifax.[12] Metrics on loan volume and performance from this sample are extrapolated to produce the publicly available data the New York Fed provides at the state and national levels.

CreditForecast.com is based on the complete universe of Equifax's consumer credit database, which includes more than 220 million consumer records each month. Since the historical data in CreditForecast.com are sourced from all of the credit reports in Equifax's national consumer database, they are substantially more comprehensive than the New York Fed data, which are based on a sample of individual credit files.[13]

Forecasts

Beyond the differences in historical data, CreditForecast.com also provides forecasts[14] across performance metrics, including delinquency and default rates, origination and outstanding balances, and the number of outstanding accounts. The availability of forecasts in CreditForecast.com enables the use cases to go beyond gaining insights on recent credit trends, to include risk management and business planning. Loss forecasting for stress-testing, originations and underwriting, and Current Expected Credit Loss preparations are all possible with the forecasts provided by CreditForecast.com.[15]

CreditForecast.com forecasts are based on a large-scale econometric-model system where estimations are performed at the state level conditional on borrower and loan characteristics, and other fixed effects. The forecasts also account for differences in regional economic conditions.

Benefits of New York Fed Consumer Credit Panel

A significant benefit of the New York Fed data is that they are longitudinal. This allows for the credit behavior of individuals and households to be tracked over time via metrics such as transition rates between delinquency buckets and the number of inquiries. However, the amount of longitudinal data that is made available to the public is limited to high-level views. The New York Fed also provides data on the percent of consumers and average balance in third-party collections. CreditForecast.com does not provide longitudinal or third-party collection data at this time.

More data, better data

CreditForecast.com provides a substantially better understanding of current and future trends affecting household credit conditions than the New York Fed's Consumer Credit Panel. CreditForecast.com

12 Sampling is done on all individuals with a Social Security number and a credit report (usually those age 19 and older). The New York Fed data also include all other individuals living at the same address as the primary sample members.

13 The New York Fed's randomized sample should accurately measure aggregate consumer credit conditions, but may not accurately measure conditions for more granular segments of the data.

14 Forecasts are provided under the Moody's Analytics baseline, upside and downside scenarios, and under a consensus baseline scenario.

15 Availability of loan origination vintage-level data, prepayment data, and forecasts allows the CreditForecast.com data to be used in CECL calculations, which is particularly relevant considering the vintage-disclosure requirements put out by the Financial Accounting Standards Board.

data are based on all of the credit files in the country, are released monthly, and provide performance metrics for a large number of consumer and mortgage products across many dimensions. The New York Fed data are based on a 5% random sample, are released quarterly, and provide performance metrics for a relatively limited number of products and dimensions.[16]

An important difference between the two data sources is how credit conditions are measured. CreditForecast.com measures credit problems based on the percent of accounts and dollar balances that are not paid on time during the month. The New York Fed measures credit problems based on all accounts and dollar balances that are on the credit file, which, depending on the product, can remain on the credit file for as long as seven years.

These differences can result in very different interpretations of the current strength of household balance sheets, as has recently occurred. The CreditForecast.com data show that credit conditions are very strong across all loan products with only minor risks brewing in select subsegments. Delinquencies are low by any historical standard and are stable. The New York Fed data suggest that credit conditions are not nearly as good and are eroding for some product lines (at least based on interpretations in the financial media). Without a deep understanding of the nuances in the performance metrics definitions, there is a high risk of users drawing incorrect conclusions by only depending on the publicly provided New York Fed data.

A lack of accurate and timely data contributed to the lending and borrowing mistakes that resulted in the financial crisis and subsequent Great Recession. Fortunately, there has been significant progress in the decade since to improve the data used to monitor and assess consumer credit risk. CreditForecast.com, which is based on all of the Equifax credit files in the country, is a good example of data that provide a comprehensive and real-time understanding of the health of household credit conditions.[17]

16 The two main references for the New York Fed data—Lee, D. and W. van der Klaauw; and Avery, et al.—were published in 2010 and 2003, respectively, and it is thus not clear if the information provided is still representative of the current New York Fed data.

17 The following is a disclaimer from Equifax: "The purpose of this paper is to directly educate users of these insights around data provided by Equifax which is not meant to dispute any methodology used with this data, but rather highlight the differences. The data being utilized by both organizations to create insights is sound and accurate. As with all insights created, the intended purpose for the use of the data needs to be fully understood along with a review of the methodologies used by the creators of the insights to determine which one is the best fit for the organization or purpose."

About the Authors

Deniz Tudor is a senior director with Moody's Analytics. As a consumer credit economist, Deniz specializes in U.S. consumer credit trends and leads the development of custom and industry-based econometric credit loss models for clients. Deniz leads projects related to CCAR, DFAST, IFRS 9, and CECL. Deniz is responsible for product development, management and strategy. Deniz is the product manager for CreditForecast.com, a forecast database using credit bureau data, and she has developed two new CECL products. Deniz produces research related to U.S. consumer trends, stress-testing, IFRS 9, and CECL. Before joining Moody's Analytics, Deniz worked as a tenure-track assistant professor at San Francisco State University and taught finance and risk management. She holds a PhD from the University of California, San Diego.

Michael Brisson is a senior economist and associate director at Moody's Analytics. He is the lead auto economist, working as a member of the Specialized Modeling group in West Chester PA. Mike works developing new empirically driven auto-related products and services. Prior to joining the Specialized Modeling group, Mike built CECL, CCAR, and stress-testing models of consumer loan performance as a member of the Business Analytics team. Additionally, Mike has worked in the Moody's Analytics Research group, where he developed models for state and local government revenue forecasts. Mike holds a PhD in applied economics from Northeastern University.

About Moody's Analytics

Moody's Analytics provides financial intelligence and analytical tools supporting our clients' growth, efficiency and risk management objectives. The combination of our unparalleled expertise in risk, expansive information resources, and innovative application of technology helps today's business leaders confidently navigate an evolving marketplace. We are recognized for our industry-leading solutions, comprising research, data, software and professional services, assembled to deliver a seamless customer experience. Thousands of organizations worldwide have made us their trusted partner because of our uncompromising commitment to quality, client service, and integrity.

Concise and timely economic research by Moody's Analytics supports firms and policymakers in strategic planning, product and sales forecasting, credit risk and sensitivity management, and investment research. Our economic research publications provide in-depth analysis of the global economy, including the U.S. and all of its state and metropolitan areas, all European countries and their subnational areas, Asia, and the Americas. We track and forecast economic growth and cover specialized topics such as labor markets, housing, consumer spending and credit, output and income, mortgage activity, demographics, central bank behavior, and prices. We also provide real-time monitoring of macroeconomic indicators and analysis on timely topics such as monetary policy and sovereign risk. Our clients include multinational corporations, governments at all levels, central banks, financial regulators, retailers, mutual funds, financial institutions, utilities, residential and commercial real estate firms, insurance companies, and professional investors.

Moody's Analytics added the economic forecasting firm Economy.com to its portfolio in 2005. This unit is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at www.economy.com.

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). Further information is available at www.moodysanalytics.com.

DISCLAIMER: Moody's Analytics, a unit of Moody's Corporation, provides economic analysis, credit risk data and insight, as well as risk management solutions. Research authored by Moody's Analytics does not reflect the opinions of Moody's Investors Service, the credit rating agency. To avoid confusion, please use the full company name "Moody's Analytics", when citing views from Moody's Analytics.

About Moody's Corporation

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). MCO reported revenue of $4.4 billion in 2018, employs approximately 13,100 people worldwide and maintains a presence in 42 countries. Further information about Moody's Analytics is available at www.moodysanalytics.com.