

US Real-time Quant Econ: March 31, 2020

After incorporating this morning's data, our models find:

- Our nowcaster's estimate of annualized GDP growth in Q2 fell to -1.79% from -1.28%.
- The risk of recession within 1 year based on economic data rose to 99.9% from 96.4%.
- The forecast of average payroll growth over the next 12 months fell to -625k from -615k.
- The forecast of core PCE inflation over the next 12 months fell to 1.56% from 1.60%.

Model	Today	Δ vs. day ago	Δ vs. week ago	Δ vs. month ago	Last 6 months	DataQuery
GDP growth: nowcast of 2020Q2 annualized growth	-1.79%	-0.51%	-1.64%	-3.77%		DB(ESYS,GL1879933)
GDP growth: probability of >3% over next 4 quarters	11.0%	-2.6%	-10.9%	-25.7%		DB(ESYS,GL1791765)
Probability of recession beginning within 12 months	99.9%	3.5%	48.5%	65.4%		DB(ESYS,GL1879934)
Payrolls: next monthly release (JPM forecast: 0k)	101k	-7k	-24k	-109k		DB(ESYS,GL1879935)
Payrolls: average over next 12 months	-625k	-10k	-684k	-736k		DB(ESYS,GL2157096)
Unemployment rate: probability of <3.5% at Dec-2020 FOMC	0.1%	0.0%	-56.9%	-62.4%		DB(ESYS,GL2157098)
Unemployment rate: probability of >4.5% at Dec-2020 FOMC	99.9%	0.0%	75.5%	81.8%		DB(ESYS,GL1879941)
Core PCE inflation: next monthly release	0.10%	0.00%	-0.09%	-0.09%		DB(ESYS,GL1879942)
Core PCE inflation: next 12 months (%oya)	1.56%	-0.04%	-0.19%	-0.25%		DB(ESYS,GL1879940)
Core CPI inflation: next 12 months (%oya)	2.03%	-0.06%	-0.12%	-0.26%		DB(ESYS,GL1879945)
Core PCE inflation: probability of >2.25% over next 12 months	0.4%	-2.3%	-6.6%	-8.0%		DB(ESYS,GL1879943)
Core PCE inflation: probability of <1.75% over next 12 months	84.8%	6.5%	31.3%	39.9%		DB(ESYS,GL2157087)
Core PCE inflation: probability of >2.00% at Dec-2020 FOMC	4.2%	-3.9%	-11.9%	-16.3%		

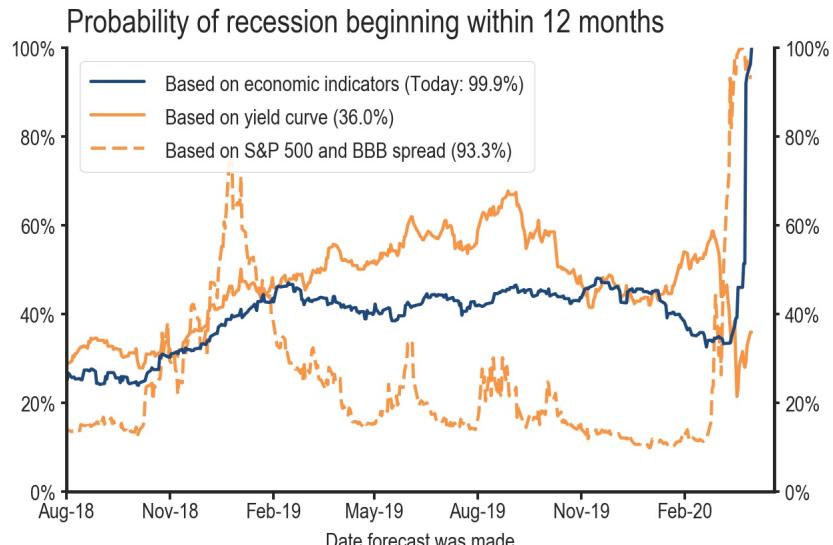
These forecasts are produced by quantitative models and provide an objective and immediate interpretation of the data we receive each day.

For our official forecasts that incorporate our views on the effects of policy changes and other special factors, see the [US Weekly Prospects](#).

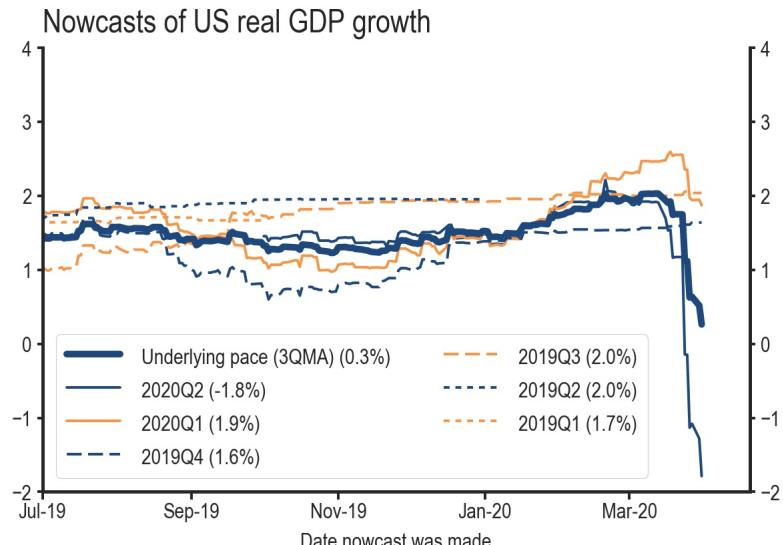
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See the end pages of this presentation for important disclosures. Further detail on our underlying sources is available on request.

Recession risk and GDP nowcaster



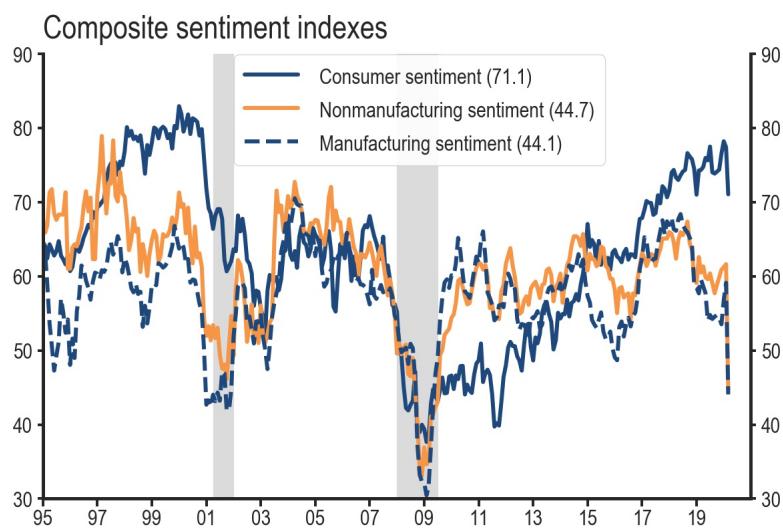
Source: Various government and non-government sources, J. P. Morgan



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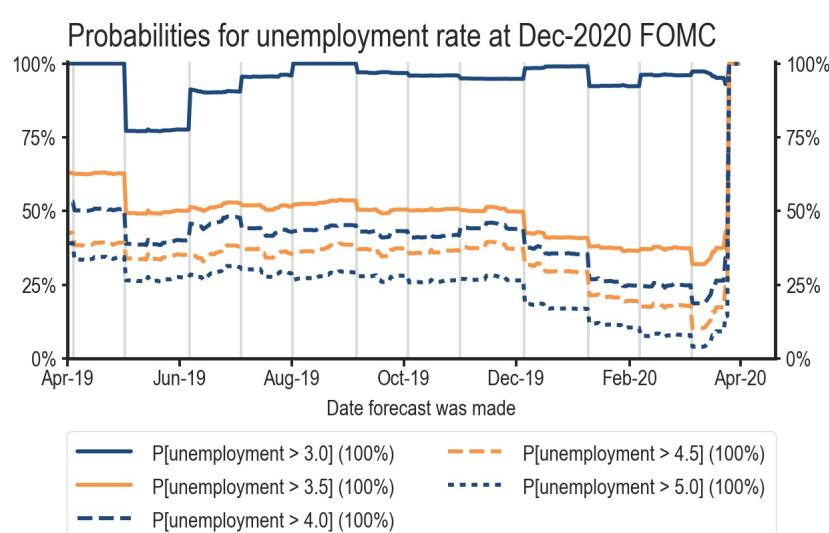
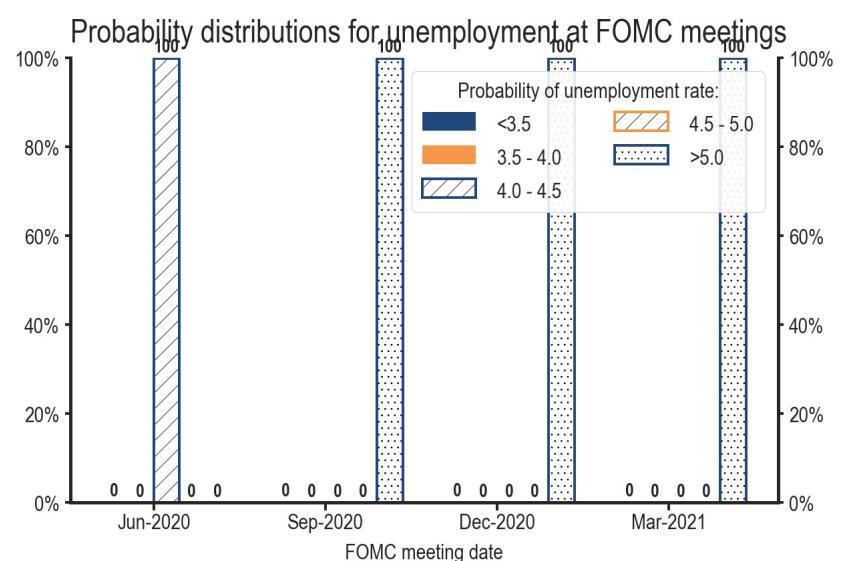
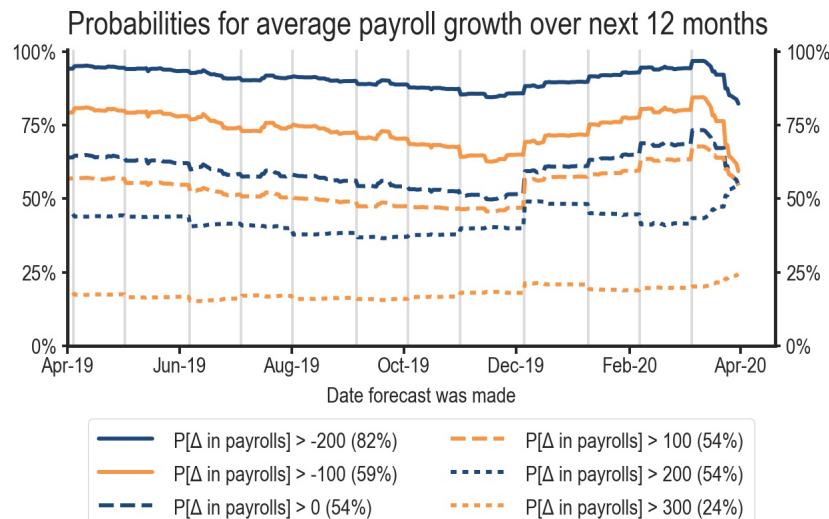
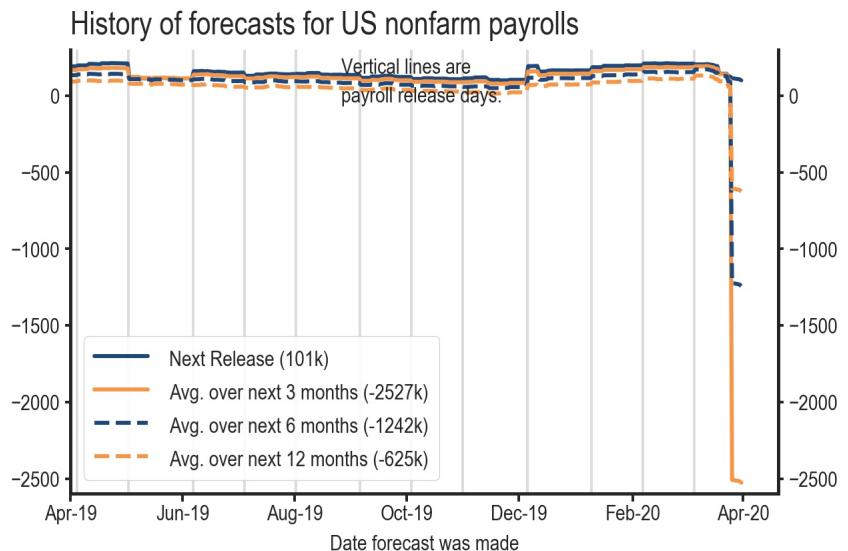
Source: Various government and non-government sources, J. P. Morgan



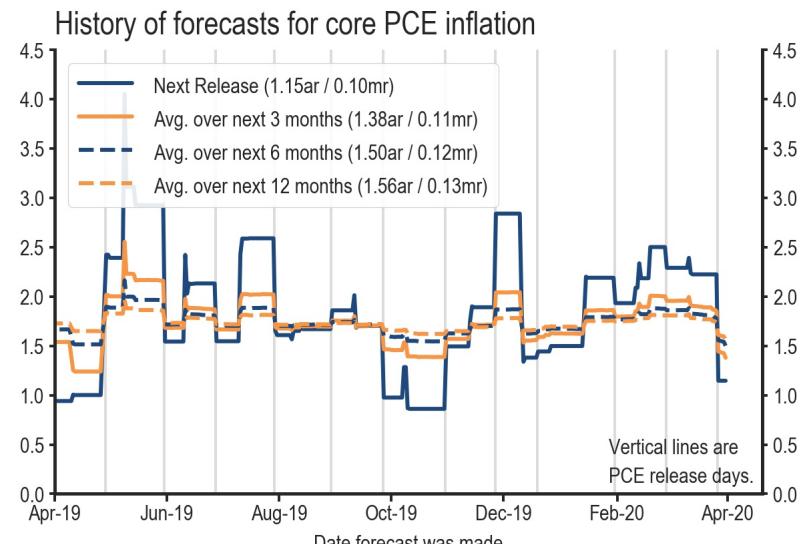
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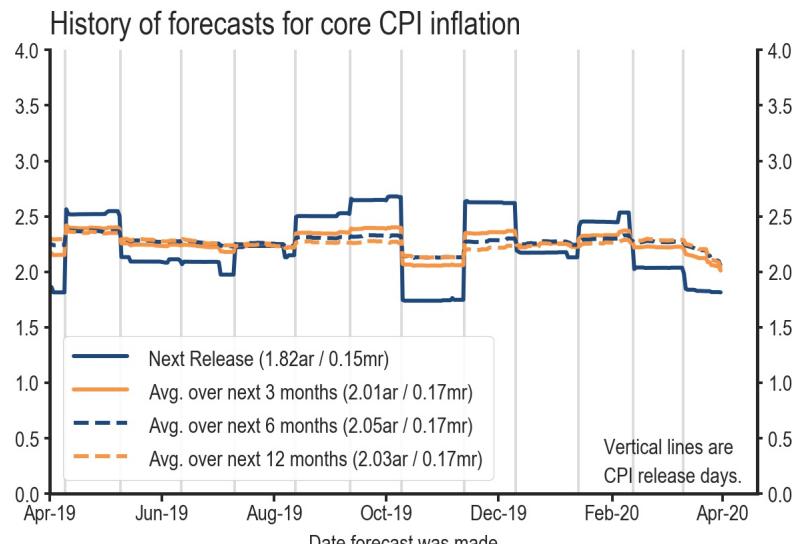
Labor market forecasts and risk monitors



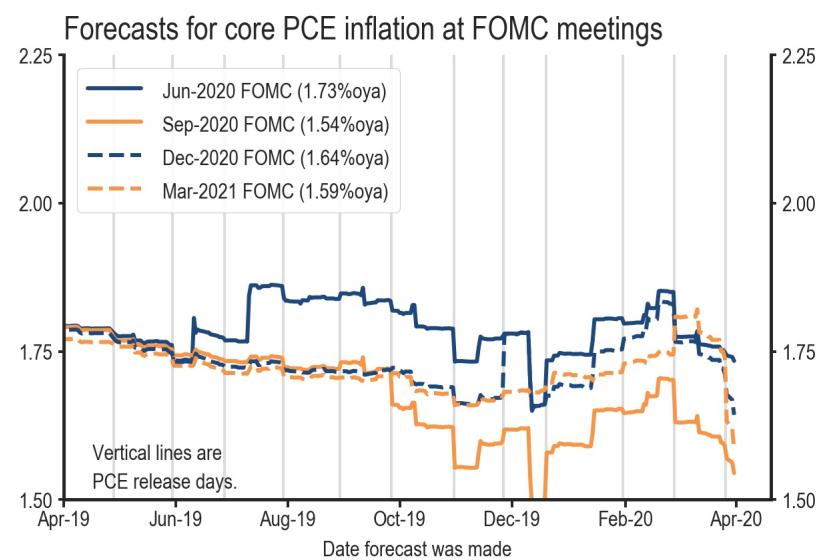
Inflation forecasts and risk monitors



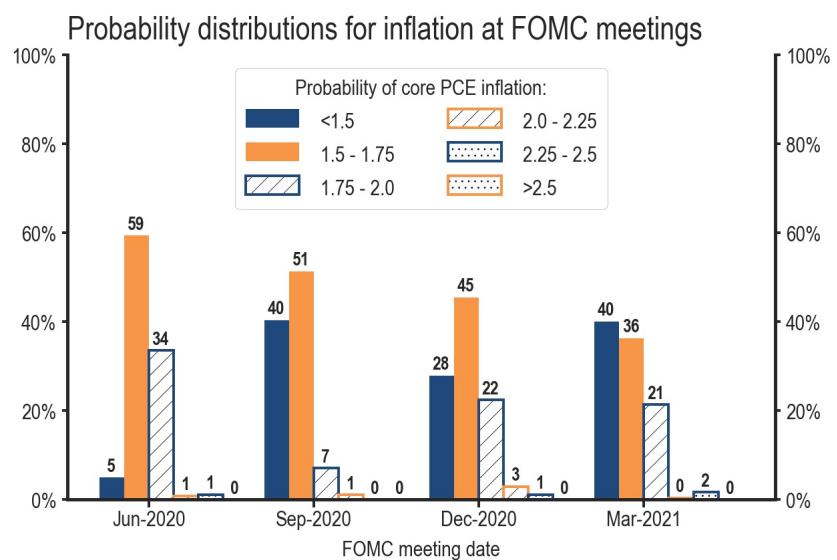
Source: Various government and non-government sources, J. P. Morgan



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One year recession risk details

Probabilities of US recession within 1 year from economic indicators

Indicator(s)	Current level	Implied 1-year recession probability	Level at 50% recession probability
Historical average unconditional probability		16%	
Consumer sentiment	71.1	47%	70.6
Nonmanufacturing sentiment	44.7	84%	53.1
Manufacturing sentiment	44.1	64%	48.4
Residential building permits	1505.7	9%	1187.8
Auto sales	16.8	31%	14.9
Payrolls	243.0	20%	-90.0
Unemployment rate	3.5	30%	3.8
Initial claims	2794.6	100%	346.1
Senior loan officer opinion survey	0.2	3%	18.5
All near-term economic indicators above		96%	
Background risk indicators		48%	
All economic indicators		100%	

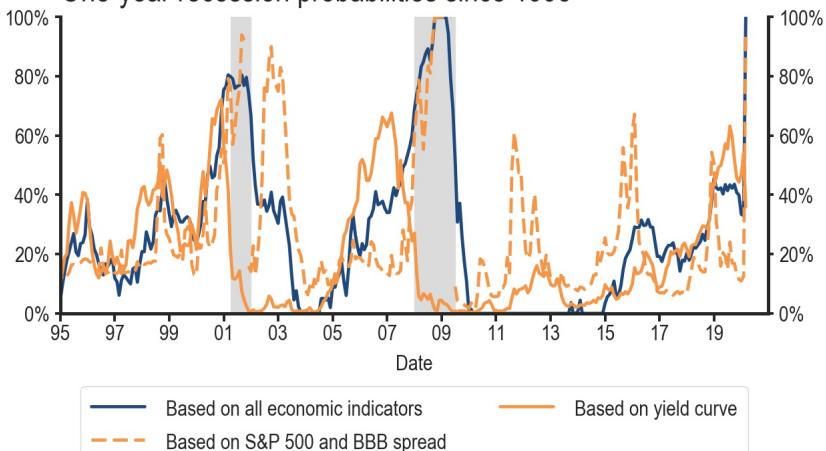
Source: J.P. Morgan. "Historical average unconditional probability" is the historical average probability of a recession starting within 12 months when beginning in an expansion, unconditional on any data. All other probabilities are based on regression models. Indicators enter the models as the deviation from their two-year average, and the sample is 1955-present excluding the periods from 7 months after the beginning of a recession to 18 months after the end, except for the SLOOS, which is a weighted average of the standards indexes for C&I; and CRE loans, 1990-present. Indicators are backcast based on related series where necessary to extend the sample back to 1955. The sentiment indicators are composites of multiple series. "Residential building permits" is single-family permits plus the 3-month average of multi-family permits. "Payrolls" is the 3-month average of nonfarm payroll gains. "All near-term economic indicators above" is the probability from a model based on the first principal component of the indicators in the table. "Background risk indicators" is the one-year probability from a model based on the first principal component of our medium-run recession indicators. "All economic indicators" is the probability from a model including the first principal component of our near-term indicators and the first component of the medium-term indicators.

Probabilities of US recession within 1 year from financial indicators

Indicator(s)	Current level	Implied 1-year recession probability	Level at 100% recession probability
S&P 500 drawdown from peak (%)	-19.9	69%	-53.7
A/BBB bond spread (bp)	314.3	63%	666.1
Yield curve (10yr minus 3mo, bp)	58.0	36%	-407.1
S&P and spread together		93%	
S&P, spread, and yield curve		96%	
All financial and near-term economic		100%	
All financial and all economic		100%	

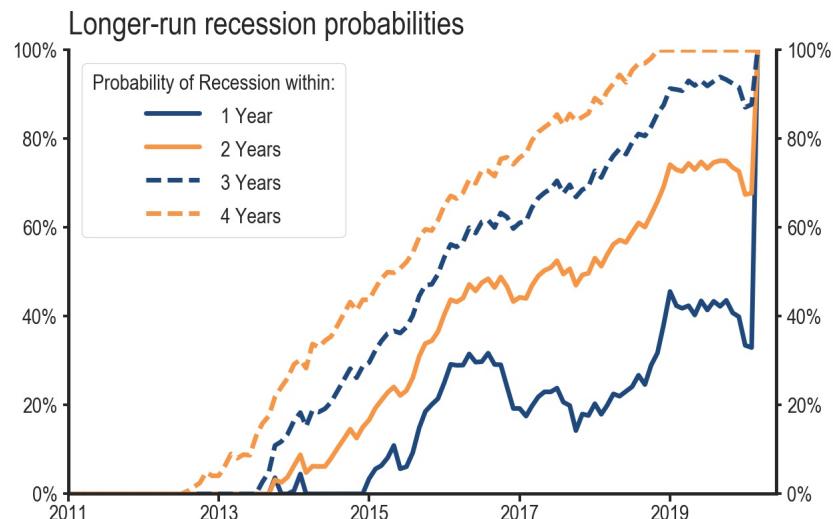
Source: J.P. Morgan. S&P 500 is drawdown from the peak monthly average. Bond spread enters model as deviation from two-year average.

One-year recession probabilities since 1995

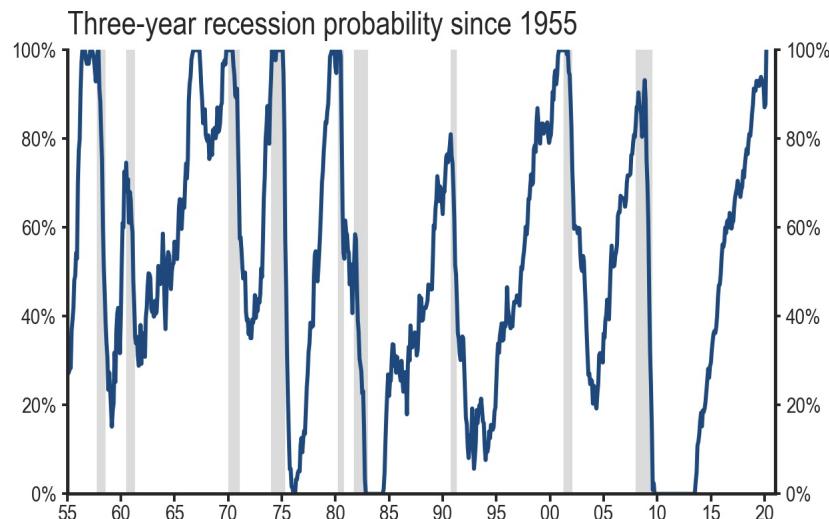


Source: Various government and non-government sources, J. P. Morgan

Longer-run recession risk



Source: Various government and non-government sources, J. P. Morgan



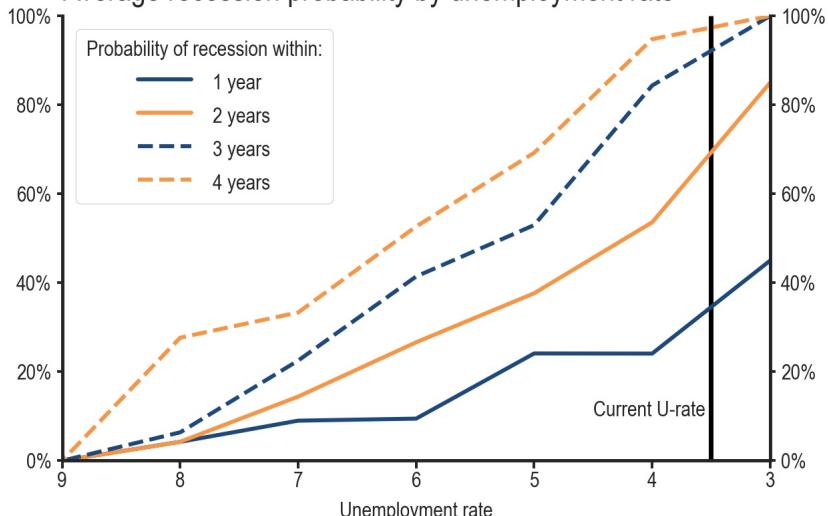
Source: Various government and non-government sources, J. P. Morgan

Probabilities of US recession from background risk indicators

Indicator	1 year	2 year	3 year	4 year
Historical average unconditional probability	16%	32%	45%	55%
Unemployment rate	47%	76%	88%	96%
Unemployment gap	37%	61%	77%	90%
Compensation growth	38%	63%	77%	84%
Prime-age male labor force participation	46%	76%	88%	96%
Margin drawdown from 5-year peak	83%	93%	95%	95%
Durables and structures share of GDP	27%	42%	57%	70%
All background risk indicators above	48%	80%	98%	100%
All economic indicators	100%	100%	100%	100%

Source: J.P. Morgan. "Historical average unconditional probability" is the historical average probability of a recession starting within a given horizon when beginning in an expansion, unconditional on any data. All other probabilities are based on regression models. Indicators are transformed as follows: compensation growth is difference from 10-year average, prime-age male participation is the difference over three years in the 12-month average, durables and structures share is difference from 10-year average. "All background risk indicators above" is the probability from a model based on the first principal component of the indicators in the table. "All economic indicators" is the probability from a model including the first principal component of our near-term indicators and the first component of the medium-term indicators.

Average recession probability by unemployment rate



Source: Various government and non-government sources, J. P. Morgan

Related research

[Big data and AI for macro forecasting: A quant econ update](#), October 2019

[Recession Risk Model Update: Tariff news turns for the worse on top of lingering caution](#), May 2019

[Machine learning for macro: What you need to know](#), October 2018

[Launching the US Real-time Quant Econ Monitor](#), October 2018

[US: Unemployment, inflation and Fed policy risks for 2019](#), October 2018

[US Recession risk models now available in DataQuery](#), September 2018

[US: Quantifying risks to the inflation outlook](#), August 2018

[Big data and machine learning in macroeconomic forecasting](#), March 2018

[Cross-asset rotation based on recession probabilities: An application of the JPM Economics recession risk model](#), March 2018

[Quantifying risks to the US growth outlook](#), February 2018

[Anatomy of an extended expansion: Revisiting the late 60s](#), January 2018

[Quantifying housing correction risk in Canada and the US](#), July 2017

[Anatomy of a mild US recession: Revisiting 1990 and 2001](#), July 2017

[Nowcasting global and US GDP: Hard and soft data](#), March 2017

[US recession risk not going anywhere for a while](#), October 2016

[Forecasting and nowcasting US GDP](#), September 2016

[US: Which indicators are most useful on first print?](#), June 2016

[US: Test driving the "data science" toolbox](#), June 2016

[US: Risk of recession within six months remains low](#), November 2015

[Tighter US labor market suggests rising recession risk](#), July 2015

DataQuery links

Output from many models is available for download in DataQuery. Time series of model outputs can come in two forms:

- Daily outputs that we have produced in real time since 2016. Historical values of these series will never change.
- Monthly fitted values from the current models with longer histories. Historical values may change as data are revised and the models are reestimated.

Model	Daily real-time	Monthly fitted values
Probability of recession within 1 year based on all economic indicators	DB(ESYS,GL1791765)	DB(ESYS,GL1791766)
Probability of recession within 1 year based on near-term economic indicators	DB(ESYS,GL2149534)	DB(ESYS,GL2149541)
Probability of recession within 1 year based on background risk economic indicators	DB(ESYS,GL2149532)	DB(ESYS,GL2149539)
Probability of recession within 1 year based on yield curve (10y-3mo)	DB(ESYS,GL2149537)	DB(ESYS,GL2149544)
Probability of recession within 1 year based on S&P500 and BBB spreads	DB(ESYS,GL2149535)	DB(ESYS,GL2149542)
Probability of recession within 1 year based on all financial indicators	DB(ESYS,GL2149536)	DB(ESYS,GL2149543)
Probability of recession within 1 year based on near-term economic and all financial indicators	DB(ESYS,GL2149533)	DB(ESYS,GL2149540)
Probability of recession within 1 year based on all economic and all financial indicators	DB(ESYS,GL2149531)	DB(ESYS,GL2149538)
Probability of recession within 2 years based on all economic indicators	DB(ESYS,GL1879932)	DB(ESYS,GL1879949)
GDP growth: Nowcast of underlying pace	DB(ESYS,GL1791770)	
GDP growth: Probability of >3% over next 4 quarters	DB(ESYS,GL1879933)	
Composite sentiment index: Consumer		DB(ESYS,GL1791767)
Composite sentiment index: Manufacturing		DB(ESYS,GL1791768)
Composite sentiment index: Nonmanufacturing		DB(ESYS,GL1791769)
Nonfarm payrolls: Forecast of next monthly release	DB(ESYS,GL1879934)	
Nonfarm payrolls: Forecast of average over next 12 months	DB(ESYS,GL1879935)	
Unemployment rate: Probability of >3.5% at Dec. 2020 FOMC	DB(ESYS,GL2157096)	
Unemployment rate: Probability of >4.5% at Dec. 2020 FOMC	DB(ESYS,GL2157098)	
Core CPI Inflation: Forecast of next monthly release	DB(ESYS,GL1879939)	
Core CPI Inflation: Forecast of next 12 months	DB(ESYS,GL1879940)	
Core PCE Inflation: Forecast of next monthly release	DB(ESYS,GL1879941)	
Core PCE Inflation: Forecast of next 12 months	DB(ESYS,GL1879942)	
Core PCE Inflation: Probability of >1.75% over next 12 months	DB(ESYS,GL1879943)	
Core PCE Inflation: Probability of >2.00% over next 12 months	DB(ESYS,GL1879944)	
Core PCE Inflation: Probability of >2.25% over next 12 months	DB(ESYS,GL1879945)	
Core PCE Inflation: Probability of >1.75% at Dec. 2020 FOMC	DB(ESYS,GL2157086)	
Core PCE Inflation: Probability of >2.00% at Dec. 2020 FOMC	DB(ESYS,GL2157087)	
Core PCE Inflation: Probability of >2.25% at Dec. 2020 FOMC	DB(ESYS,GL2157088)	

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