UBS

Global Research

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Slides: Outlook for the US Economy

Tariffs take us to the brink of recession

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This document has been prepared by UBS Securities LLC

Our Overview

- Tariffs take us to the brink of recession
  - 2020H1 growth below 0.5%; unemployment rate rises to 4.3% by year end
  - Consumption dampened by job losses; investment is contracting
- The Fed shifts from "adjustment" to "easing cycle"
  - 25bp cut in September on fears
  - 100bps of cuts in 2020 on the deterioration of the data
- Inflation has accelerated, but there will be no breakout to the upside
  - April through July have had strong prints
  - Tariffs will temporarily boost inflation in 2020H1
  - The softer economy means inflation falls back going into 2021
- Balance sheet unwind has ended
  - Unwind ended in August; Fed is now buying Treasuries in the secondary market
  - Purchases along the curve. Expect future purchases to be more tilted to the front end
  - MBS prepayments have spiked on lower rates

The Trade War drives our outlook

Ratcheting tariffs hit the economy

Our Forecast

September 9, 2019	*2018*		*2019*				*2020*				*Q4/Q4*			
	Q/Q % ch, a.r.										*% ch*			
	Q3	*Q4*	*Q1*	*Q2*	*Q3*	*Q4*	*Q1*	*Q2*	*Q3*	*Q4*	*2018*	*2019*	*2020*	*2021*
Real GDP	**2.9**	**1.1**	**3.1**	**2.1**	**2.1**	**1.8**	**0.5**	**0.3**	**1.7**	**2.1**	**2.5**	**2.3**	**1.1**	**2.5**
Personal consumption exp	3.5	1.4	1.1	4.3	2.5	1.7	0.9	0.7	1.6	1.9	2.6	2.4	1.3	2.1
Fixed investment	0.7	2.7	3.2	-0.8	0.4	0.7	-1.7	-1.4	2.0	2.9	3.5	0.9	0.4	6.1
Business fixed investment	2.1	4.8	4.4	-0.6	0.3	0.5	-2.3	-1.7	2.6	3.7	5.9	1.1	0.5	6.8
Structures	-2.1	-9.0	4.0	-10.6	-6.0	-3.2	-5.5	-4.8	1.0	2.0	2.6	-4.1	-1.9	6.8
Equipment	2.9	7.4	-0.1	0.7	0.0	-1.1	-3.8	-2.8	3.0	4.0	5.0	-0.1	0.0	6.8
Intellectual property products	4.1	11.7	10.8	4.7	4.7	4.7	1.5	1.5	3.2	4.5	9.3	6.2	2.7	6.8
Residential	-4.0	-4.7	-1.0	-1.5	1.0	1.5	0.5	0.0	0.0	-0.3	-4.4	0.0	0.1	3.6
Government purchases	2.1	-0.4	2.9	5.0	3.4	3.4	2.8	2.8	2.8	2.8	1.5	3.7	2.8	1.6
Net exports (contrib, pct pt)	-2.1	-0.4	0.7	-0.6	-0.3	-0.1	-0.2	-0.2	-0.2	-0.2	-0.4	-0.1	-0.2	-0.3
Exports	-6.2	1.5	4.1	-5.2	-2.3	-1.7	-8.8	-5.8	0.9	0.9	0.4	-1.3	-3.3	2.4
Imports	8.6	3.5	-1.5	0.1	0.0	-0.4	-5.5	-3.0	2.2	2.1	3.2	-0.5	-1.1	4.0
Inventory contribution (pct pts)	2.1	0.1	0.5	-0.9	0.0	0.0	-0.1	-0.2	0.0	0.0	0.3	-0.1	-0.1	0.0
Payrolls (monthly pace, 000s)	222	216	206	147	182	153	99	159	59	178	221	172	124	200
Private payrolls	206	216	198	142	172	150	75	75	170	180	212	166	125	190
Civilian unemployment rate (%)	3.8	3.8	3.9	3.6	3.6	3.6	3.9	4.1	4.2	4.3	3.8	3.6	4.3	4.3
Labor force participation rate (%)	62.8	63.0	63.1	62.8	62.9	62.9	63.0	63.1	63.2	63.3	63.0	62.9	63.3	63.7
Inflation														
CPI-U	2.0	1.5	0.9	2.9	1.4	0.8	2.9	2.6	1.5	1.2	2.2	1.5	2.1	2.1
Core CPI-U	2.0	2.2	2.3	1.8	3.0	2.0	2.8	2.4	1.9	2.0	2.2	2.3	2.3	2.2
PCE Chain Price Index	1.6	1.3	0.4	2.3	1.6	1.1	2.6	2.4	1.4	1.1	1.9	1.4	1.9	1.8
Core PCE Chain Price Index	1.6	1.7	1.1	1.8	2.3	1.8	2.6	2.2	1.6	1.6	1.9	1.8	2.0	1.8
Income indicators														
Average hourly earnings	3.5	3.3	3.0	2.6	3.4	3.3	3.2	3.1	3.2	3.2	3.3	3.1	3.1	3.2
Employment cost index	3.0	2.7	3.0	2.4	2.9	2.9	2.9	3.0	3.1	3.1	2.9	2.8	3.0	3.2
Real disposable income	3.3	2.9	4.5	2.5	2.5	2.8	1.0	1.4	2.2	2.7	3.9	3.1	1.8	2.1
Saving rate (%)	7.5	7.8	8.5	8.0	8.0	8.3	8.3	8.4	8.6	8.7	7.8	8.3	8.7	8.7
Federal budget balance ($ bil, FY)											-779	-991	-1052	-1019
Federal funds rate (top of range, %)	2.25	2.50	2.50	2.50	2.00	2.00	1.75	1.25	1.00	1.00	2.50	2.00	1.00	1.25

Source: Commerce Dep't, Federal Reserve, Bureau of Labor Statistics, Treasury Department, & UBS

UBS

We are more than 18 months into this trade war

Repeated tariff actions leave the US economy vulnerable and reeling

Major trade actions will bring total value of imports under tariff to $551bln by year end

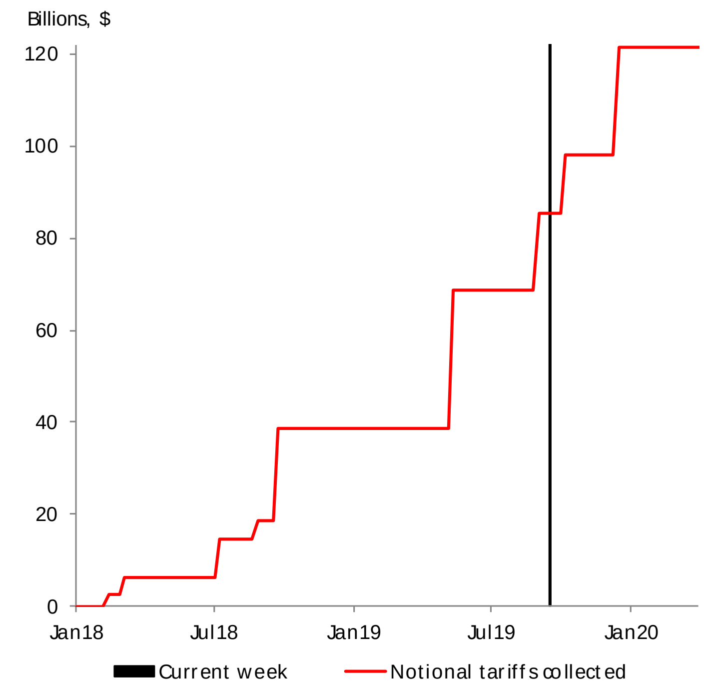
Tariffed item	Country	Date	Rate	2017 blns
Washing machines	Global	7-Feb-2018	20%	1.7
Solar panels	Global	7-Feb-2018	30%	7.3
Steel	Global	1-Mar-2018	25%	9
Aluminum	Global	1-Mar-2018	10%	13
Tranche 1 -- $34bln	China	6-Jul-18	25%	34
Tranche 2 -- $16bln	China	23-Aug-2018	25%	16
Tranche 3 -- $200bln	China	24-Sep-18	10%	200
Tranche 3 -- $200bln	China	10-May-2019	25%	200
Tranche 4 -- $113bln	China	1-Sep-19	15%	113
Tranche 1-3 -- $250bln	China	1-Oct-2019	30%	250
Tranche 5 -- $157bln	China	15-Dec-19	15%	157
Total		weighted	22%	551
Already in effect		weighted	22%	363

About 22% of US imports are under new tariffs

* The 22% for imports, 22% weighted tariffs on 551, and 22% weighted tariffs on 363 are a coincidence and are correct

Source: UBS, USTR

Through September 1, new 2019 trade actions have double notional effective size of tariffs**



By December, notional tariffs will be three times their 2018 size

5% increments feel small but add up when applied to large numbers

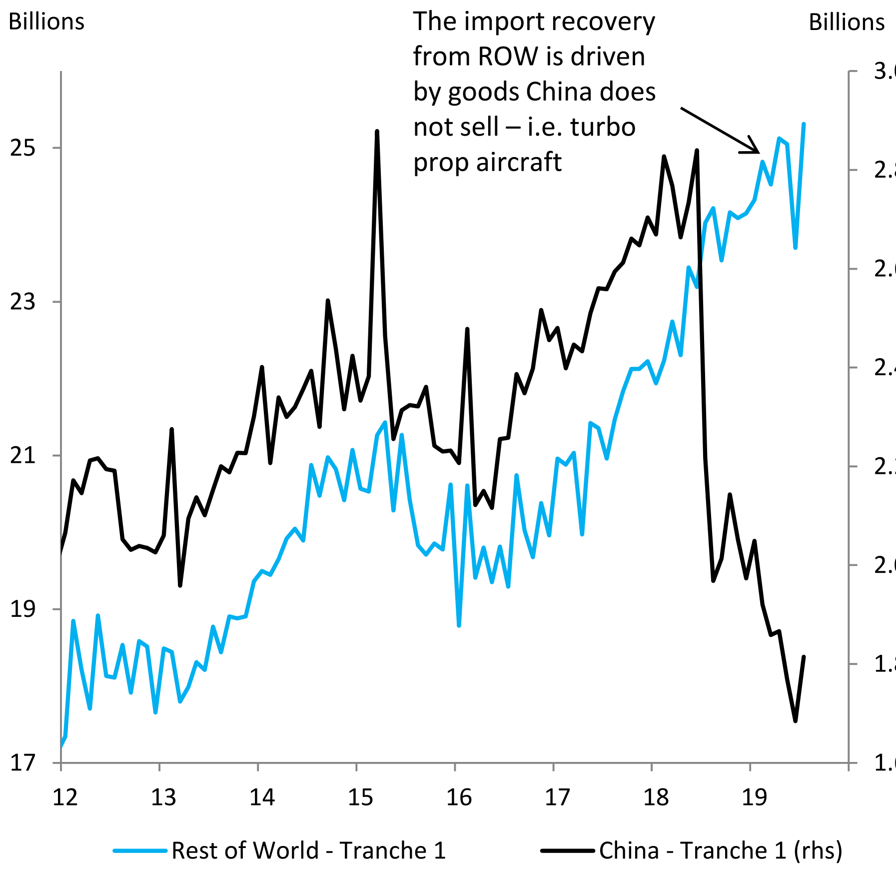
** Notional effective size does not equal tariffs collected at border as volumes have changed since tariff implementation. The black line is the sum of the rate times the billions in the table.

UBS

Imports of goods under tariff have fallen

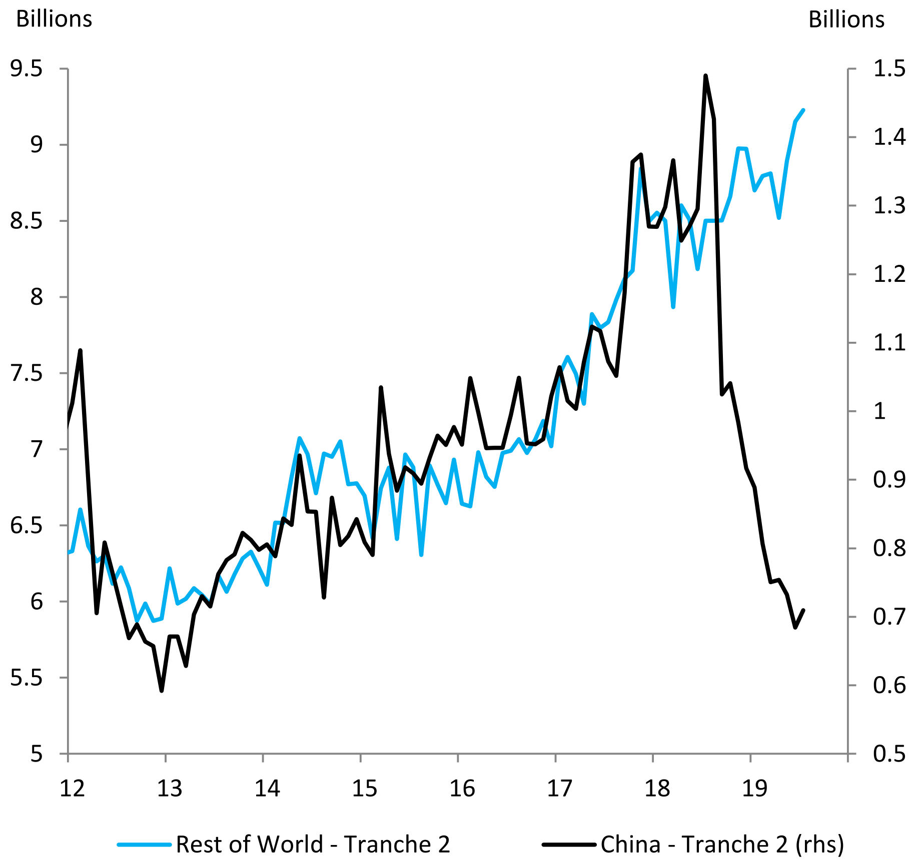
Tariff elasticities are much larger than previously believed

First tranche ($34bn): US imports down about 40% post tariffs



Source: US Census, UBS

Second tranche ($16bn): US imports down about 40% post tariffs

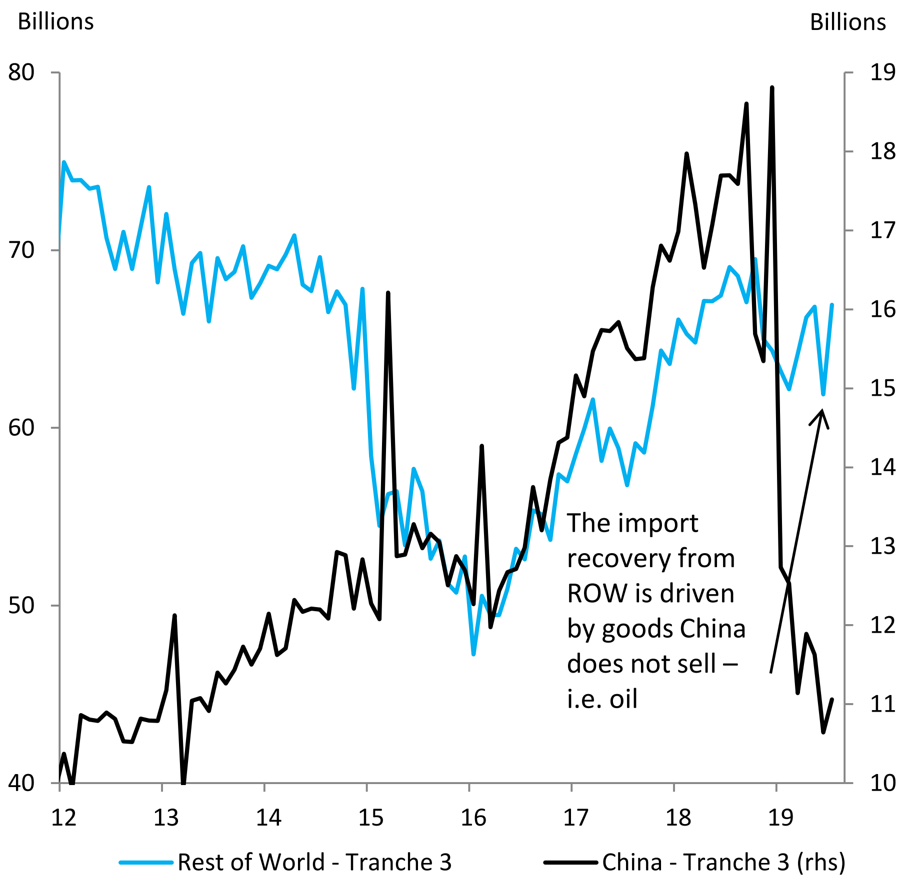


Source: US Census, UBS

UBS

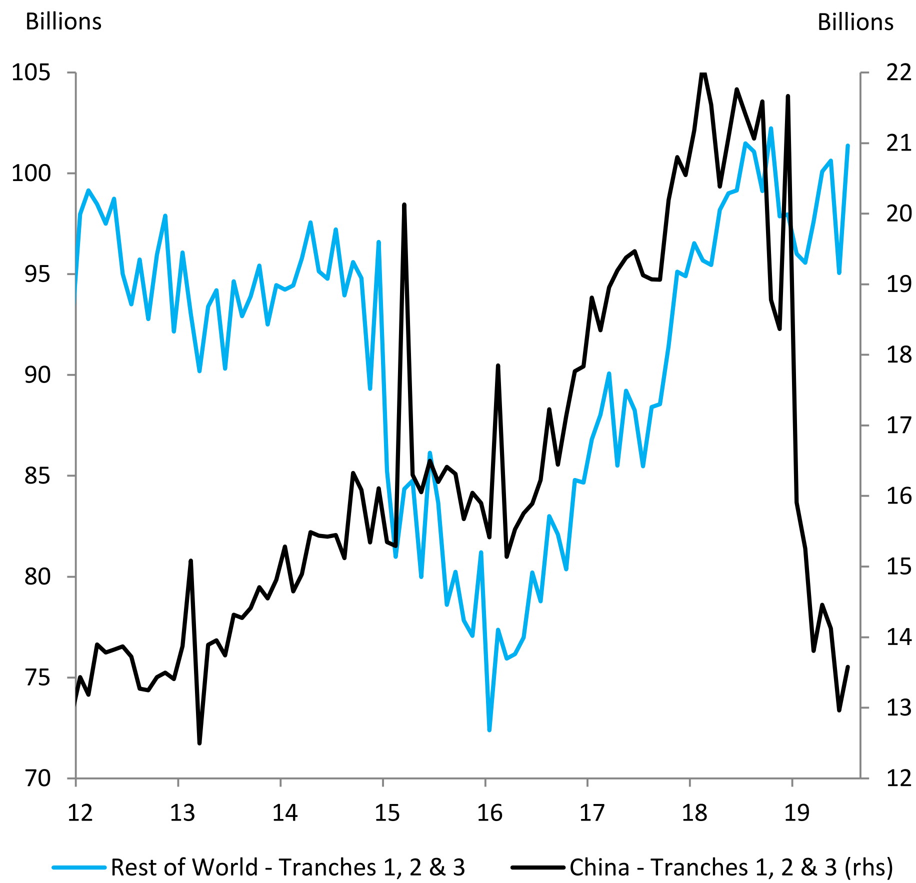
Tariffed imports from China have fallen 40% on 13% average weighted tariffs, an elasticity about 3 times larger than that assumed by Federal Reserve models

Third tranche ($200bn): US imports from China have fallen about 40% since tariffs hit in Sept.



Source: US Census, UBS

Tariffed imports from China in first tranches are down 40%; in Q2, imports lost from China began to arrive from other countries but that effect has now faded



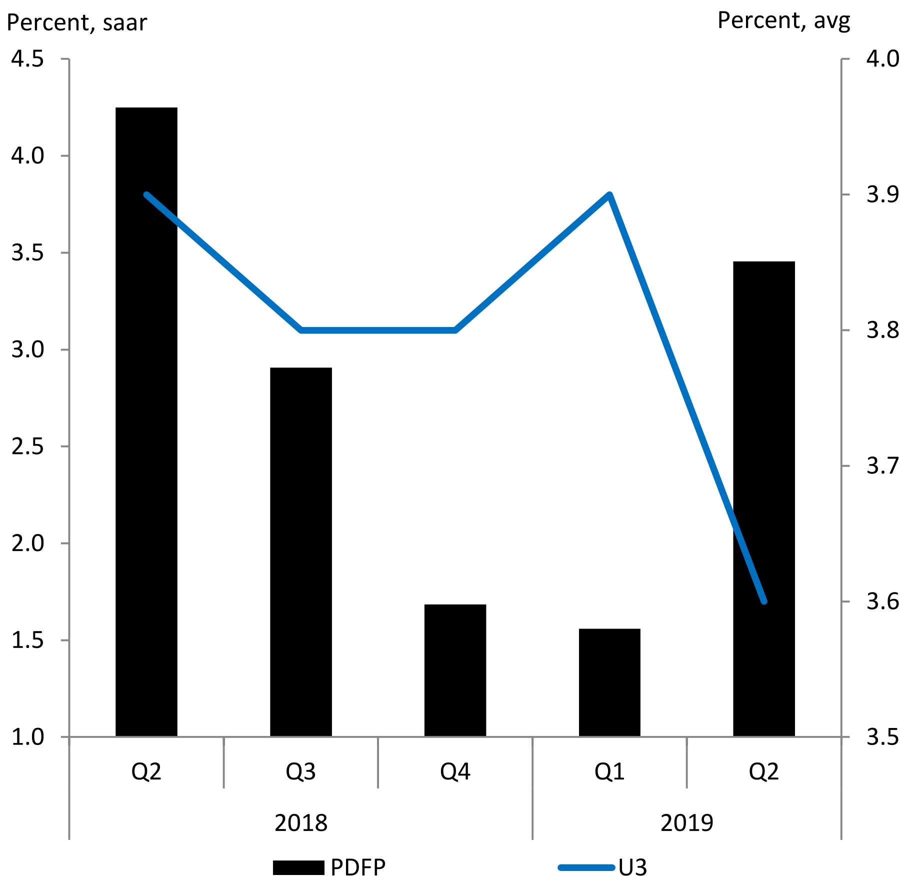
Source: US Census, UBS

UBS

The decline in trade led to a decline in US activity

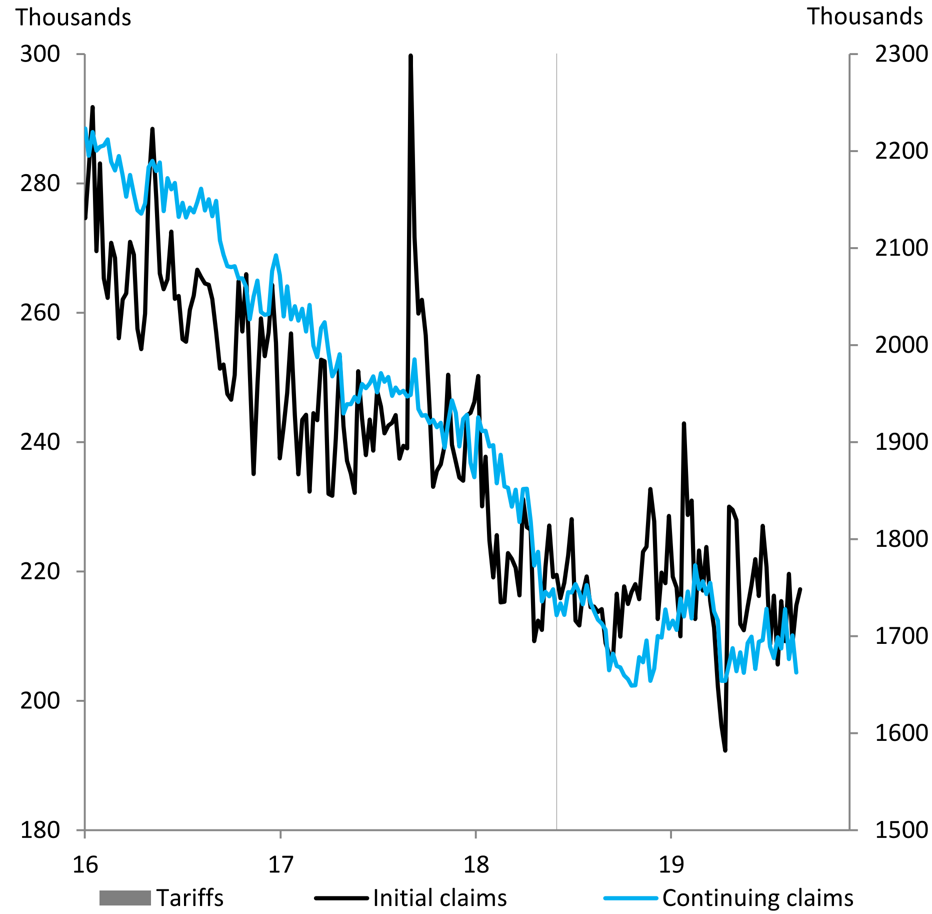
The inability to withstand higher taxes led to shuttered production lines (and layoffs)

The tariffs induced a pothole in domestic demand and a rise in the unemployment rate



Note: PDFP is private domestic demand. U3 is unemployment
Source: US Census, UBS

The rise in the unemployment rate was mirrored (driven) by a rise in initial claims; claims have been elevated relative to trend for about 10 months

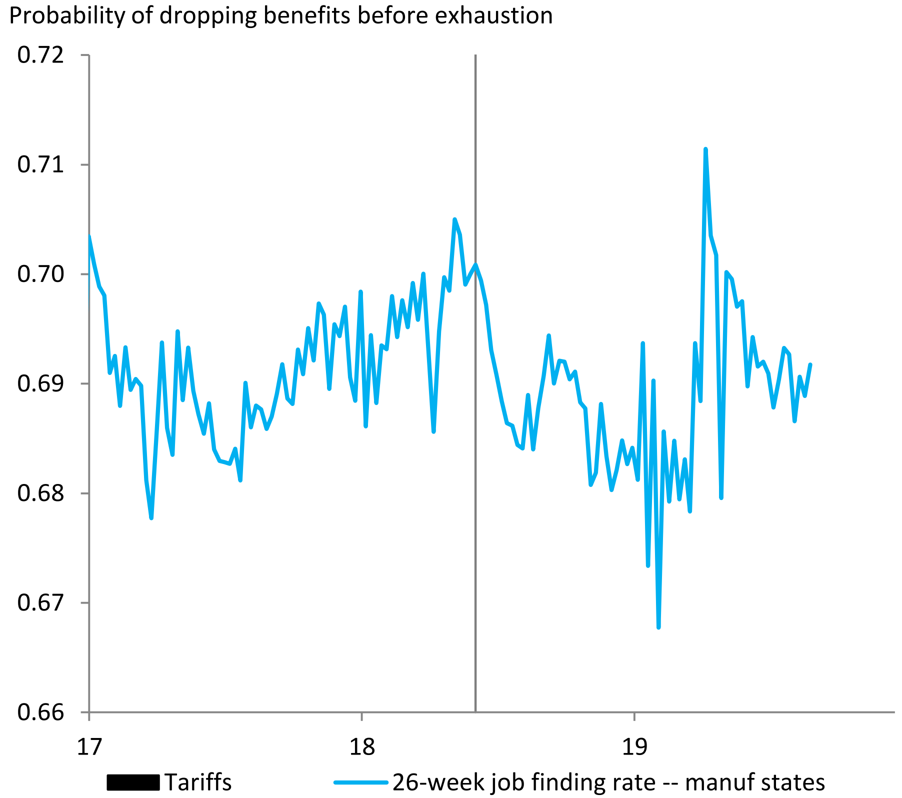


Source: BLS, UBS

Tariffs hurt hiring and weak hiring hurt consumption

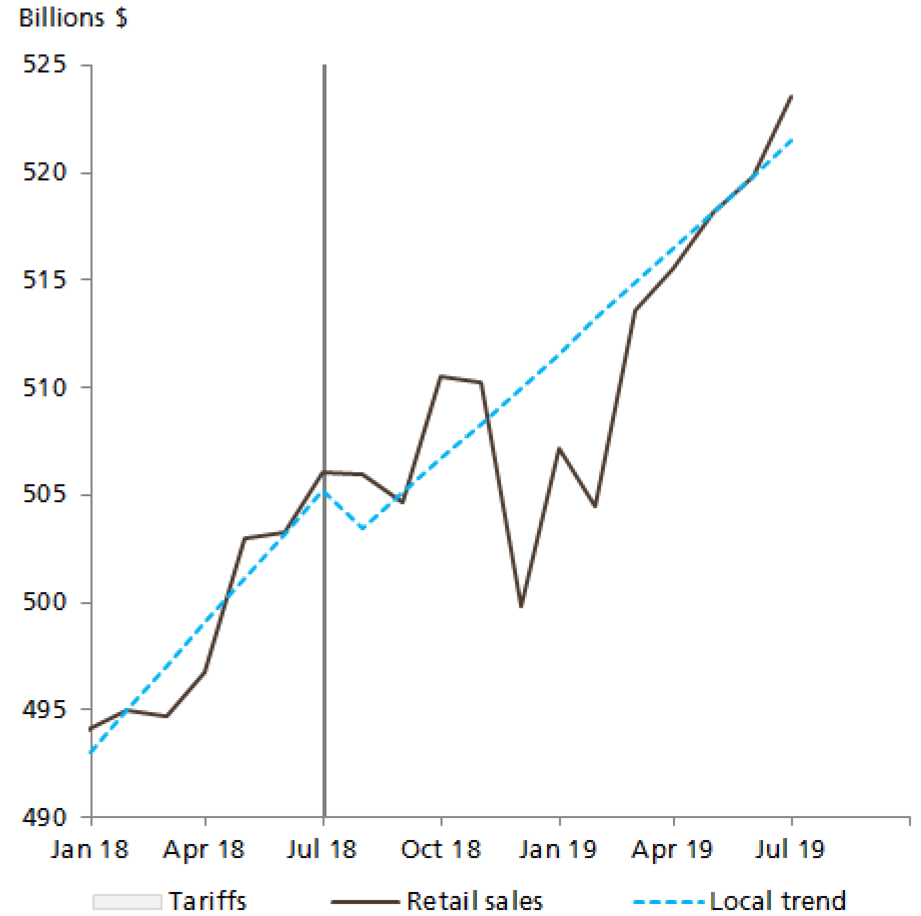
Household consumption is sensitive to employment prospects

The job finding rate began to fall as soon as tariffs were first implemented; it surged in late Q1 as firms began to find alternative sources of supply



Note: The job-finding rate is the probability of finding new employment before benefit exhaustion after filling an initial claim. Manufacturing states: MN, WI, IL, IN, OH, MO, MO, KY, TN AL, GA, FL.
Source: DOL, UBS

The economic impact of tariffs extended to consumption, which hit a pothole from Dec to Feb and recovered in March as job finding rate jumped higher



Source: BLS, UBS

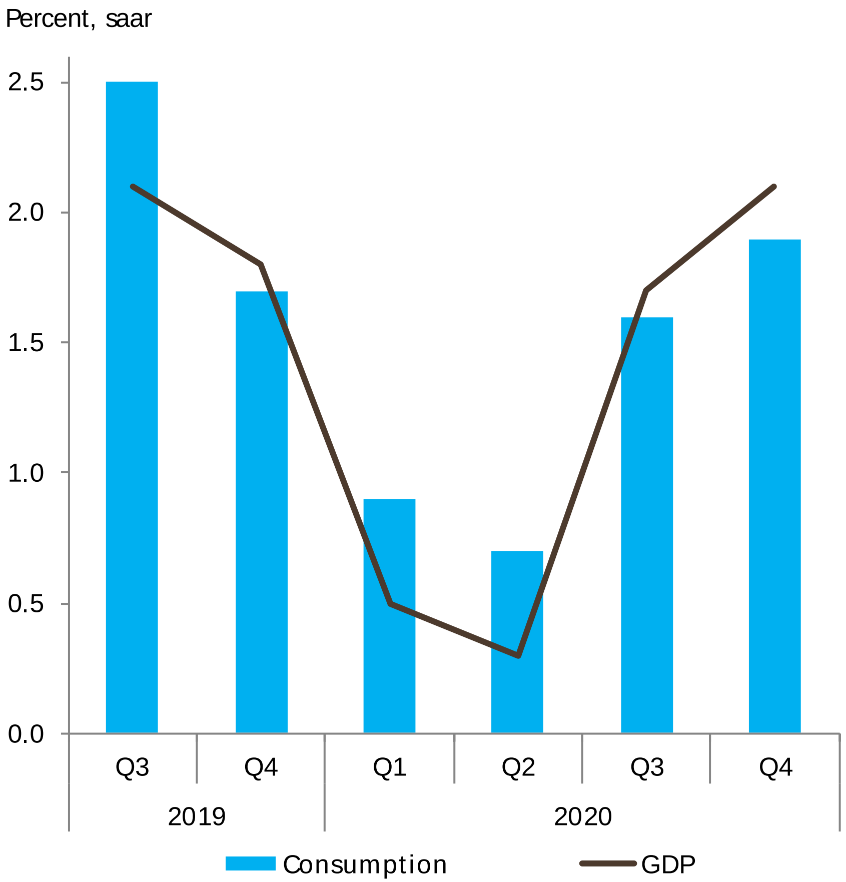
Focus on the near-term forecast

We see GDP at a near standstill in early 2020

Renewed tariffs: renewed slump in activity

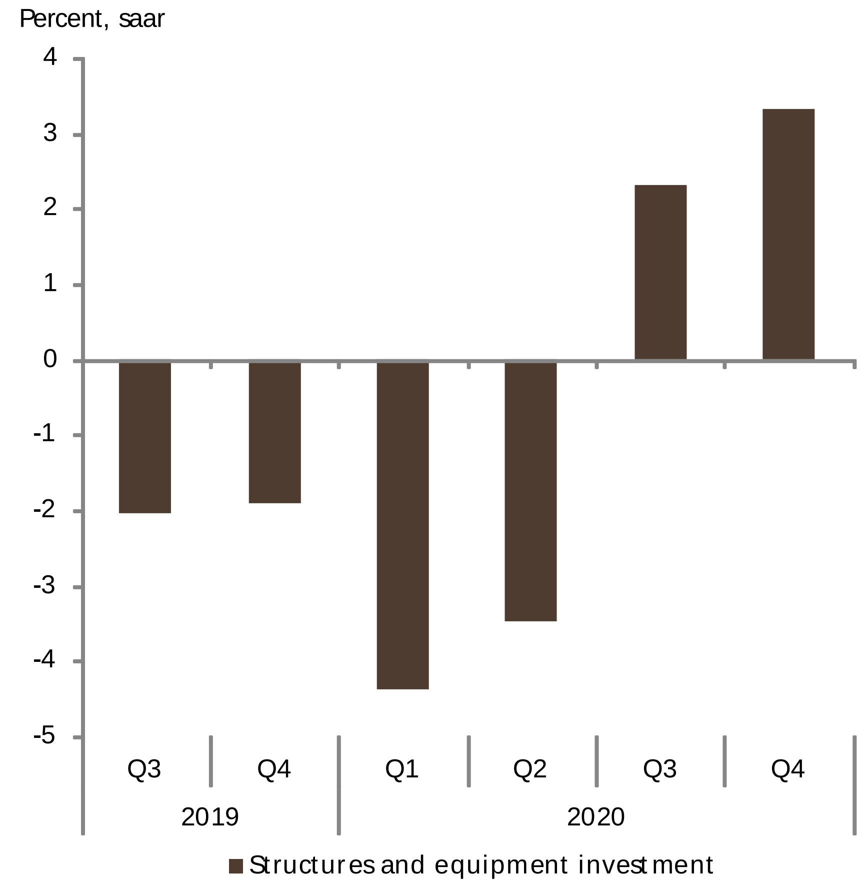
We see an ordinary near-recession slowdown in Q1 and Q2

GDP and consumption growth slow to a near standstill in early 2020; risks are skewed to the downside through Q2 2020



Source: BEA, UBS

With new tariff already announced, investment never finds its footing and declines a lot in Q1 and Q2 as general malaise intensifies

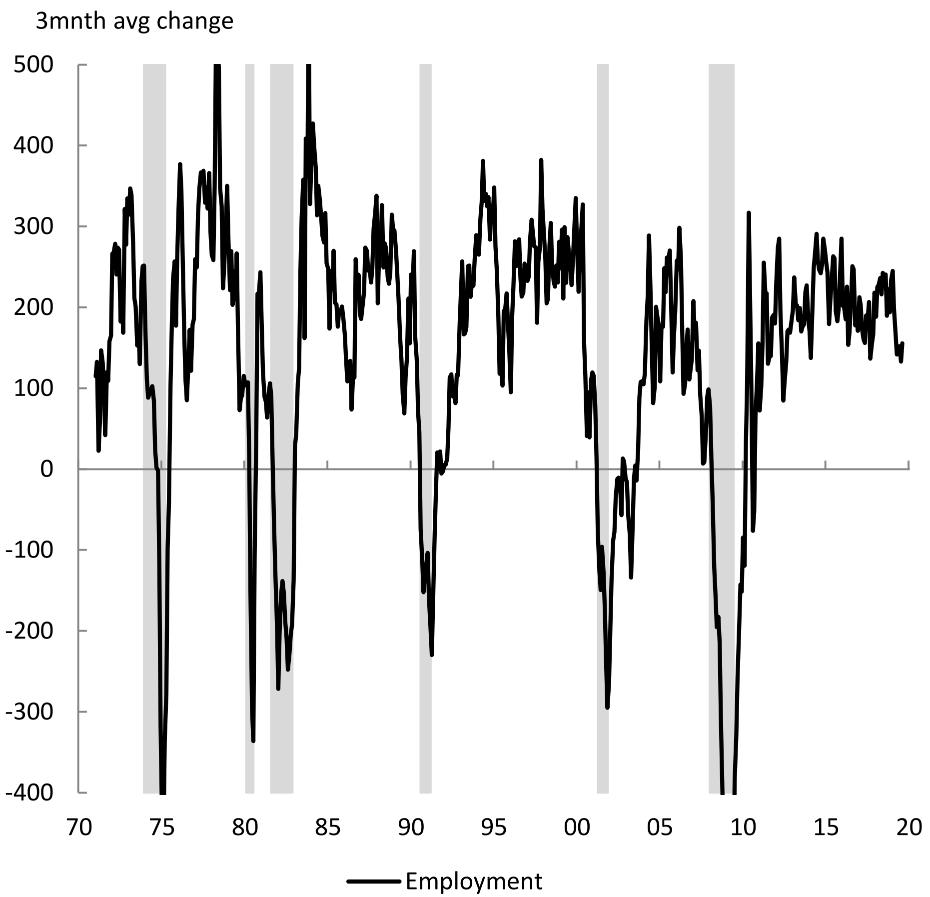


Source: BEA, UBS

Risks are to the downside as employment has already slowed

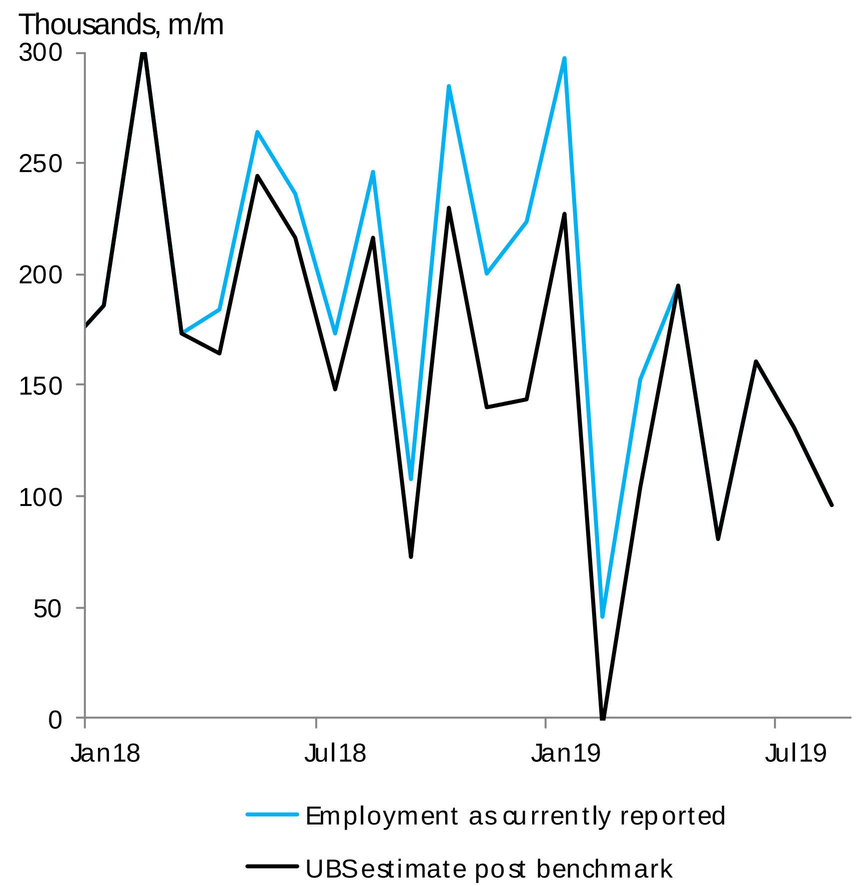
A weak economy has less ability to endure new shocks

Employment growth remains steady until just before US recessions; few soft landings



Source: UBS, BLS

We estimate that after the benchmark revisions are incorporated employment will show an even stronger slowing pattern



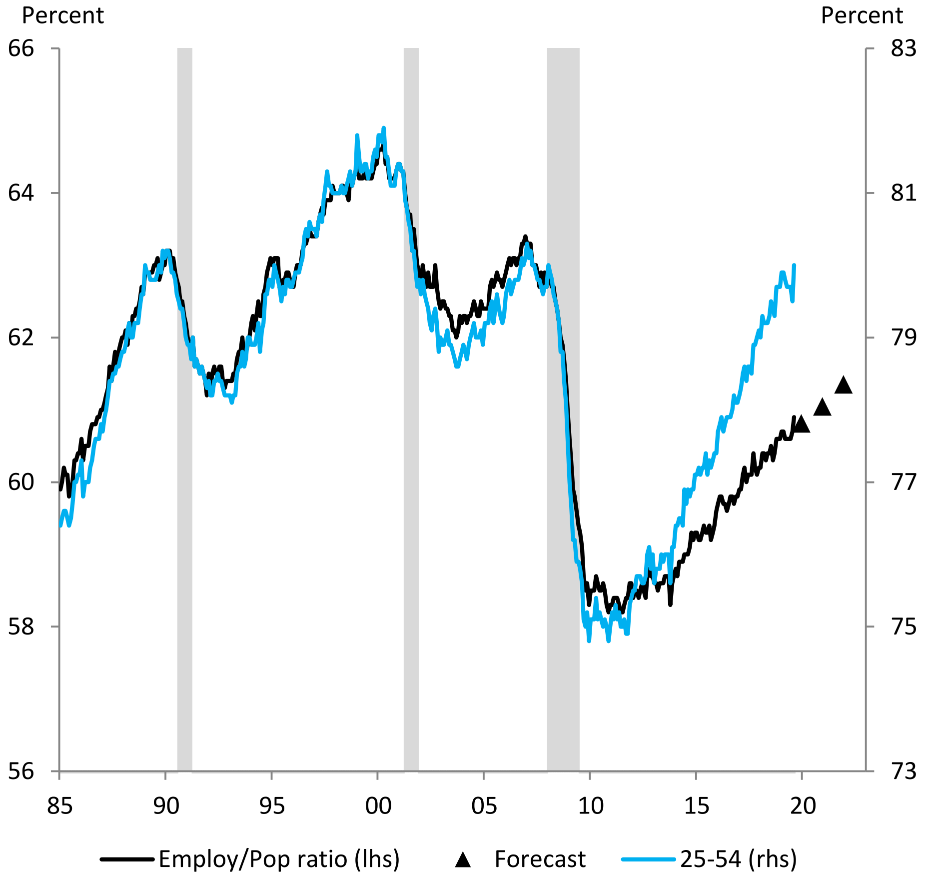
Note: We know that the BLS will subtract 514k from the level of March 2019 private employment. We do not yet know to which months the BLS will allocate those revisions. Source: BLS, UBS

UBS

We have not run out of workers – firms just slowed hiring

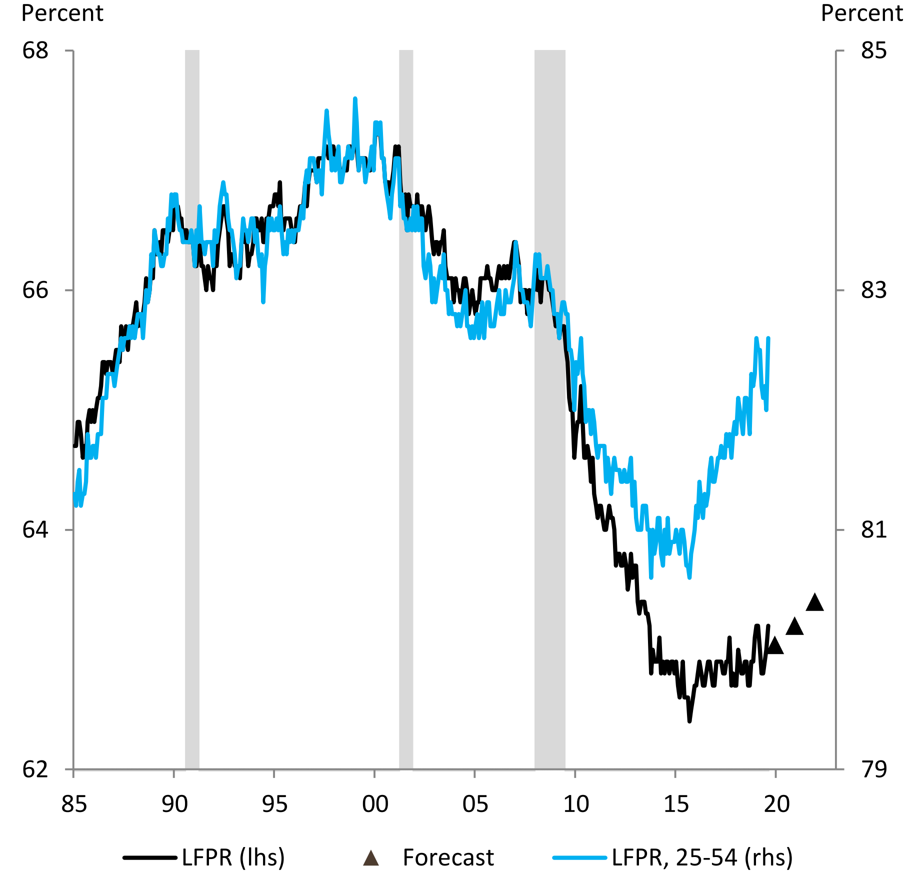
Extent of untapped labor supply remains unclear but is likely substantial

Prime-age employment/population is far below the peaks of the last two expansions; the gap with 1990s is 8.8m or 44 months of 200k job gains



Source: UBS, BLS

Prime-age participation fell sharply but has moved higher for 4 years; younger women have re-entered and male participation stabilized



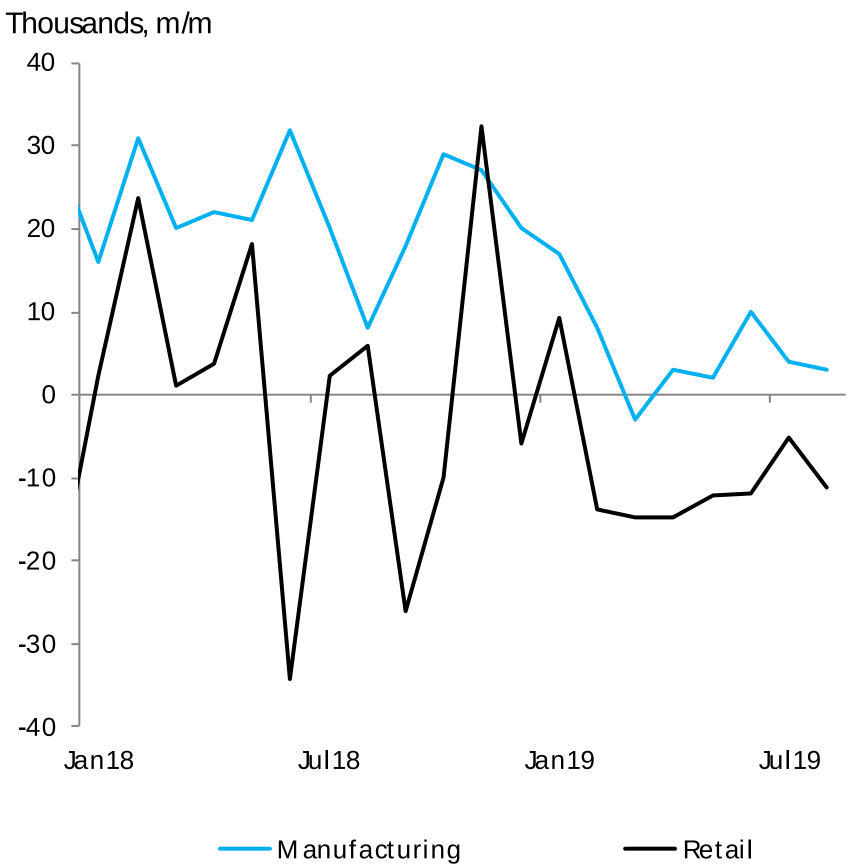
Source: UBS, BLS

UBS

Risks are to the downside as employment has already slowed

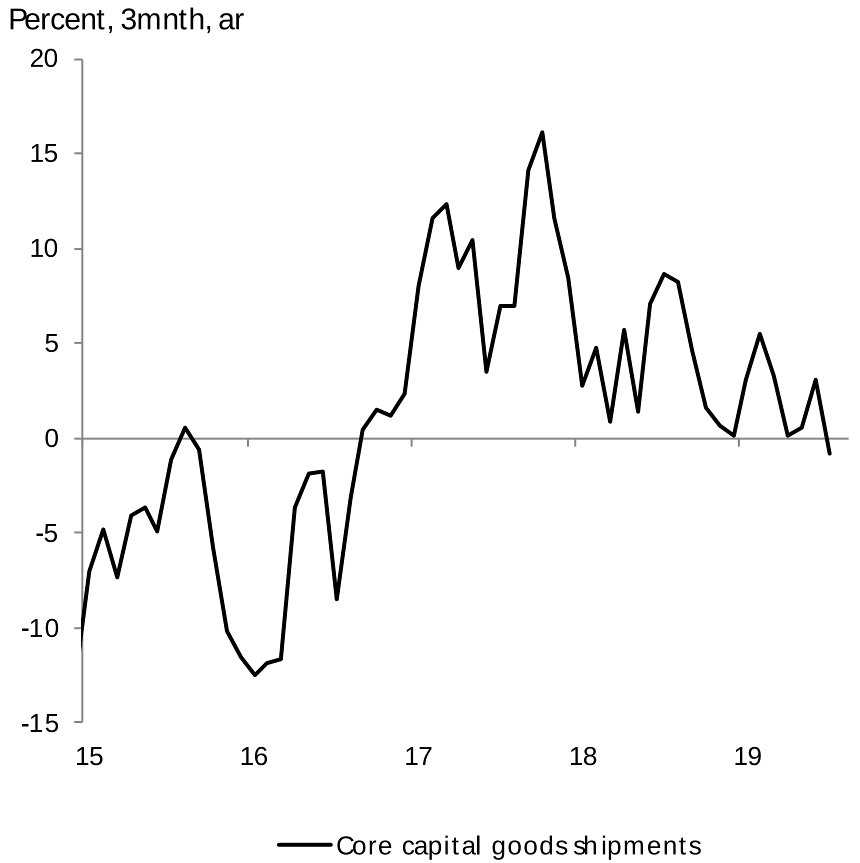
A weak economy has less ability to endure new shocks

Manufacturing and retail employment are especially vulnerable under the new tariffs; the two sectors are already reeling



Source: UBS, BLS

Consistent with weakness in manufacturing, core capital goods shipment growth has stalled

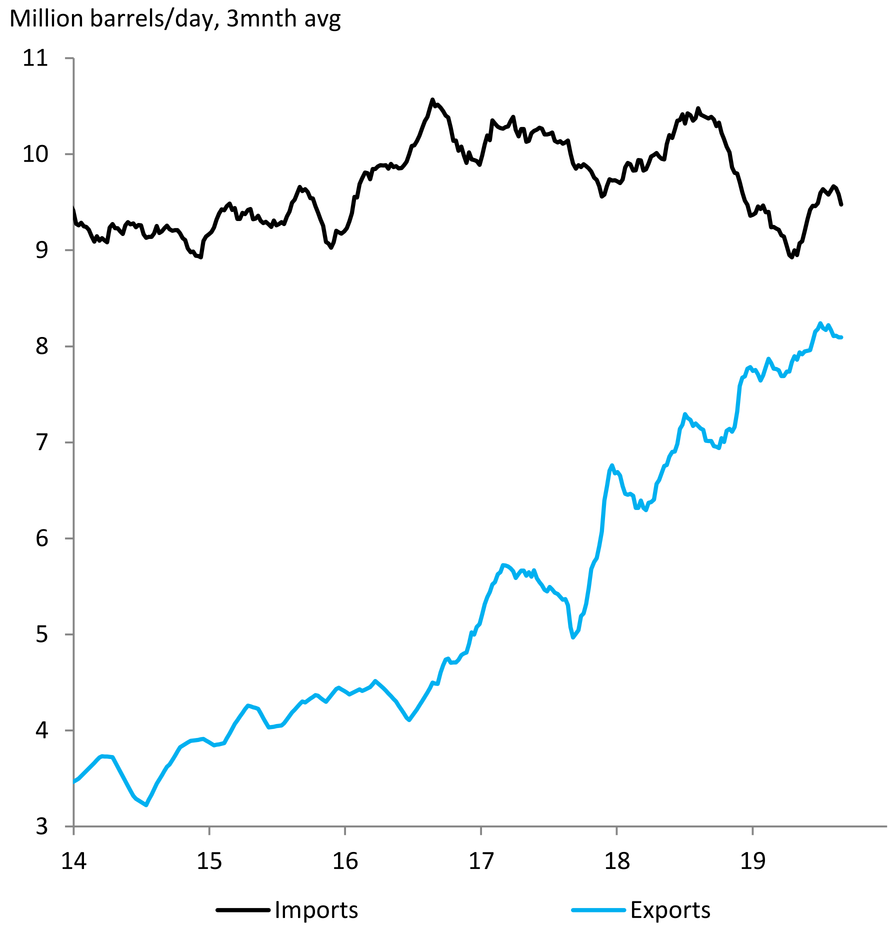


Source: Census, UBS

Cheap oil is a big risk; Lower demand will slow production

Following large positive contributions, energy likely subtracting from growth now

The world is consuming increasing amounts of US oil; the oil balance is closing



Source: UBS, EIA

The balance has shifted and the US is now more sensitive to downside oil than up

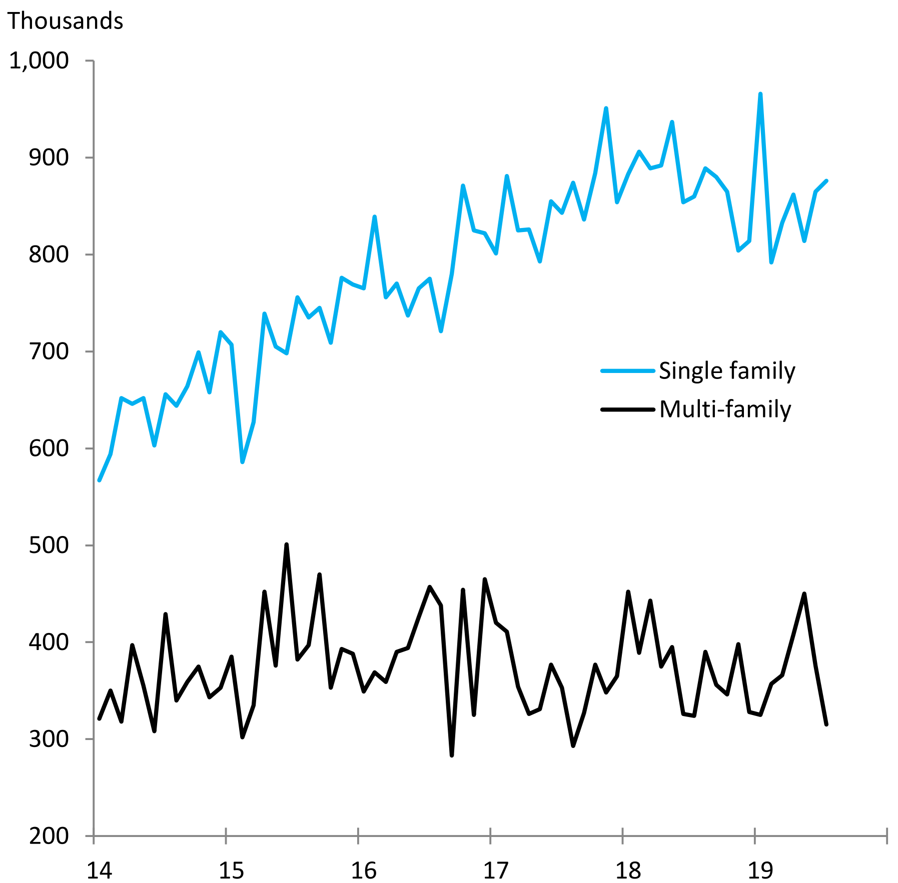
Source: UBS, Baker Hughes

UBS

Housing has been tepid for several years

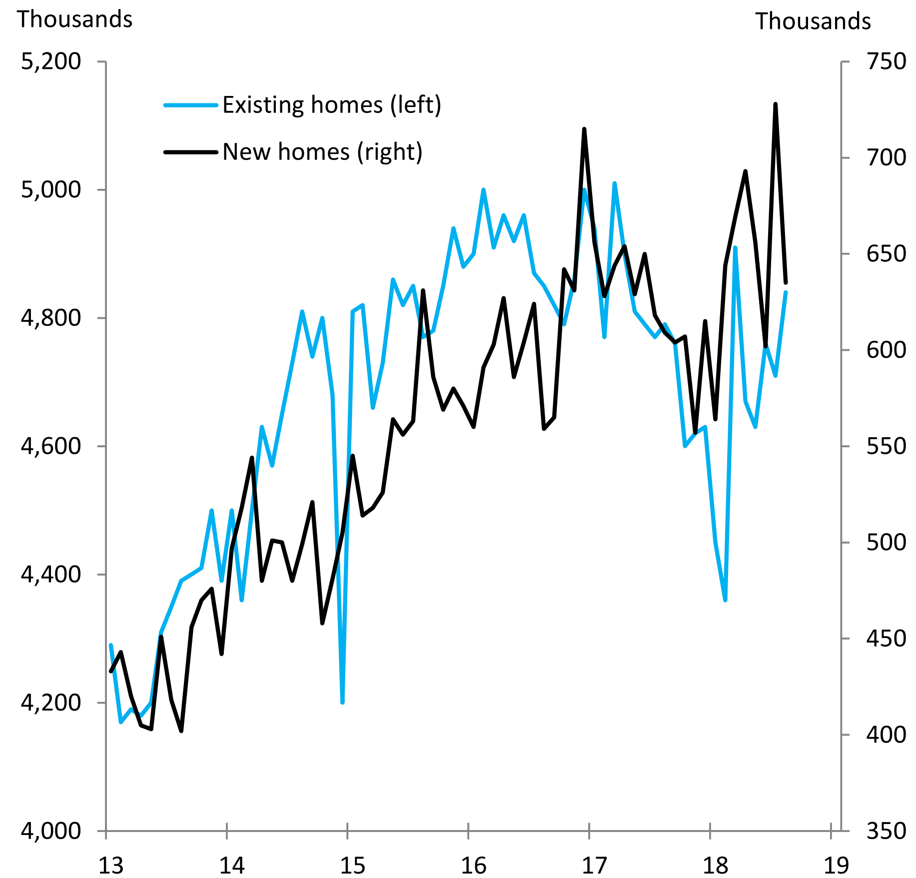
But does not pose an independent risk to the outlook

We expect starts to move lower with the weakness in activity



Source: Census, UBS

New home sales show current strength as rates have fallen and as early-year weakness was overstated



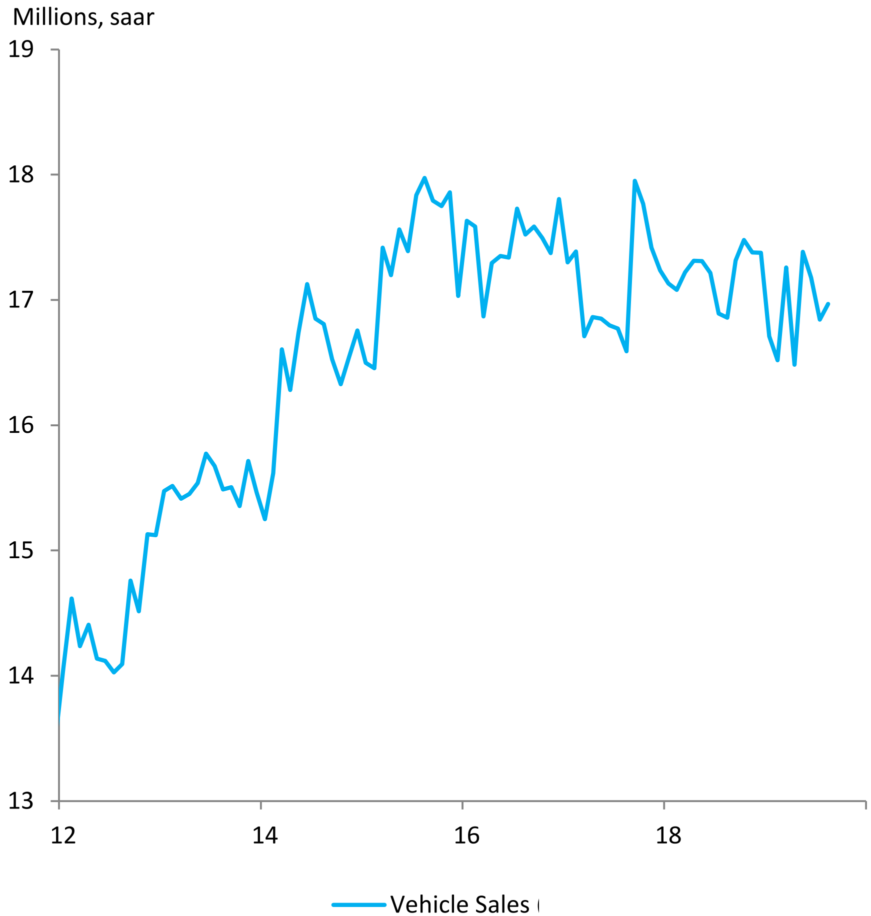
Source: NAR, Census, UBS

UBS

Auto sales have stabilized

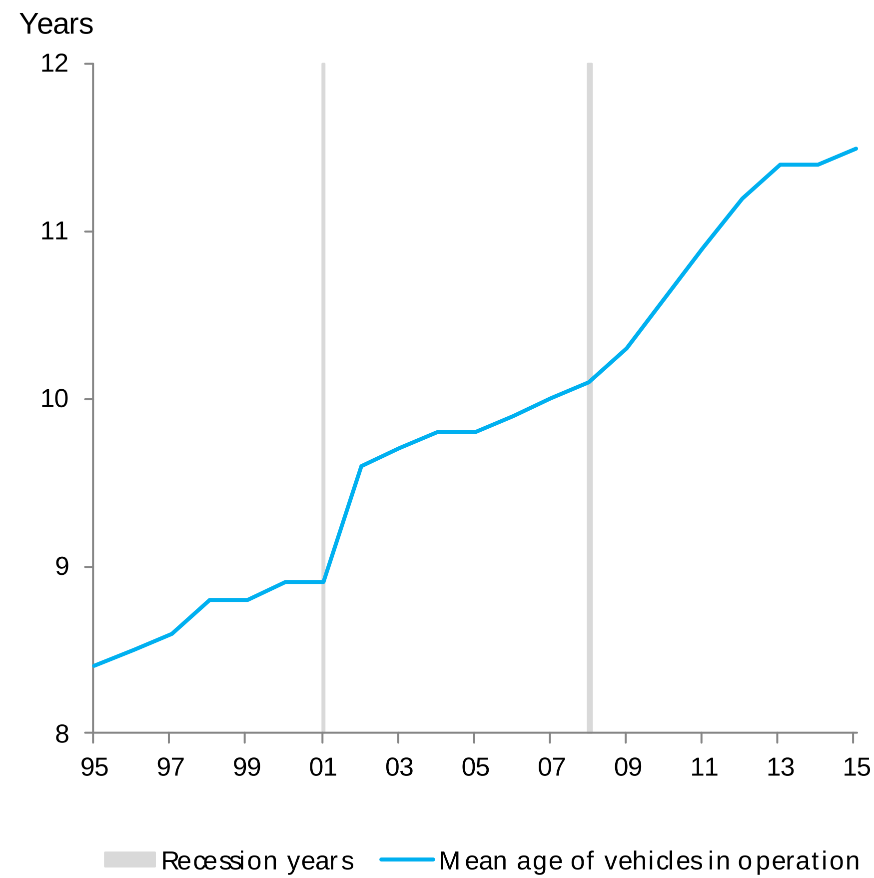
We expect slowing in early 2020

Auto sales seem to have stabilized around 17mln; we expect a low-water mark of about 16mln in H1 2020



Source: UBS, BEA

The mean age of light cars is approaching 12 years; will likely increase if sales slump



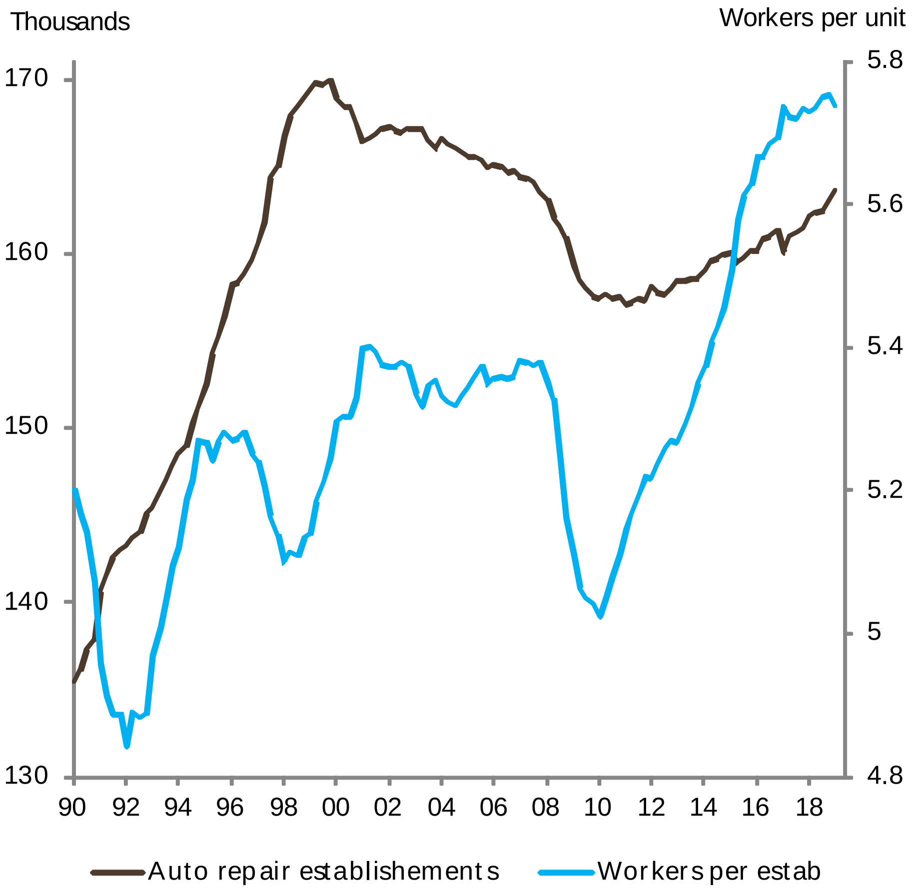
Source: UBS, US Census
For more detail see [Auto Aftermarket: A View from the investment community]

UBS

The number of repair establishments is rising

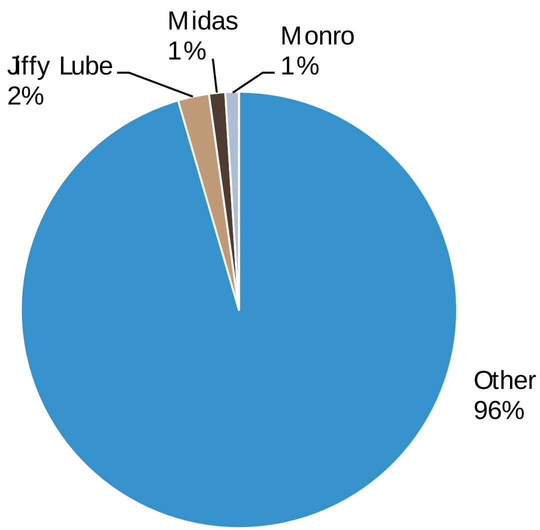
Size per establishment increased but the industry remains massively fragmented

The number of auto service repair establishments have risen



Source: UBS, Census

Market Share of Auto Mechanics Industry



Source: : IbisWorld, UBS
For more detail see [Auto Aftermarket: A View from the investment community]

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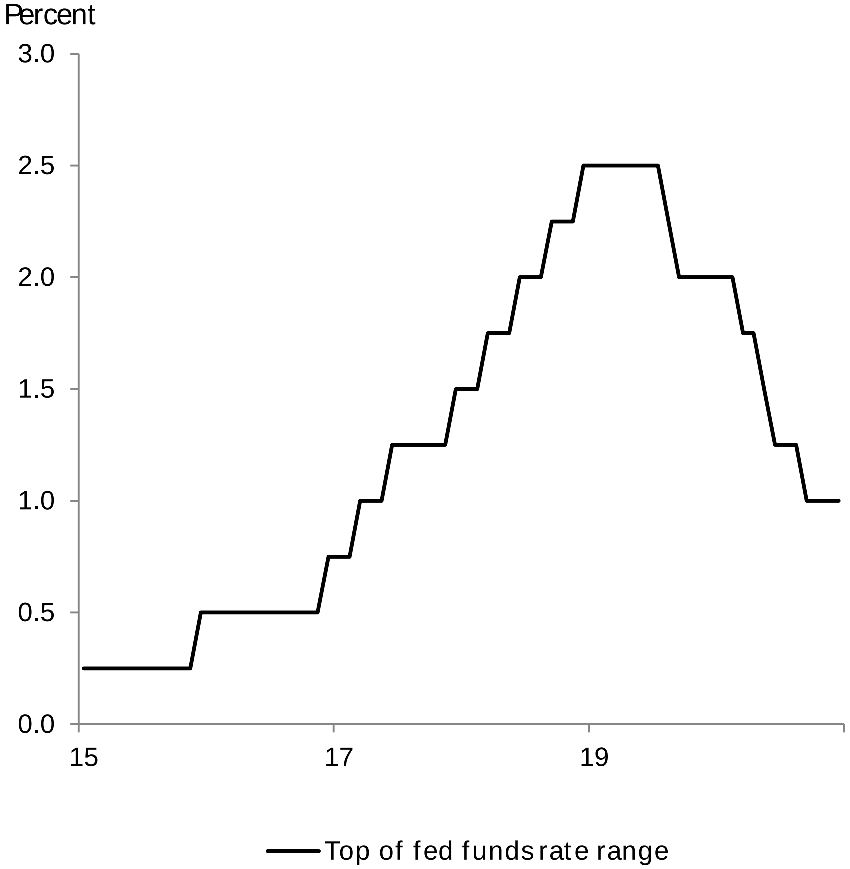
The Fed

4 cuts in 2020 following **2** cuts in 2019

The Fed cuts rates semi-aggressive in response to slowing

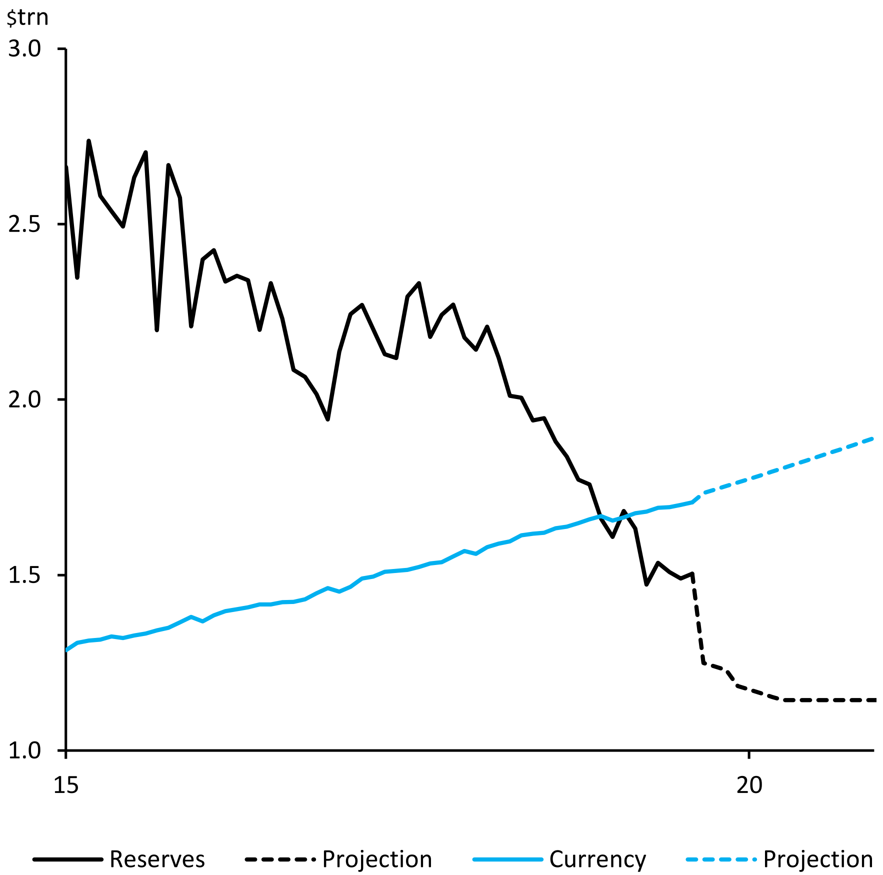
Does not adjust balance sheet policy from here

The FOMC's long-run unemployment rate forecast tends to follow the data



Source: UBS, Federal Reserve

Reserves and currency

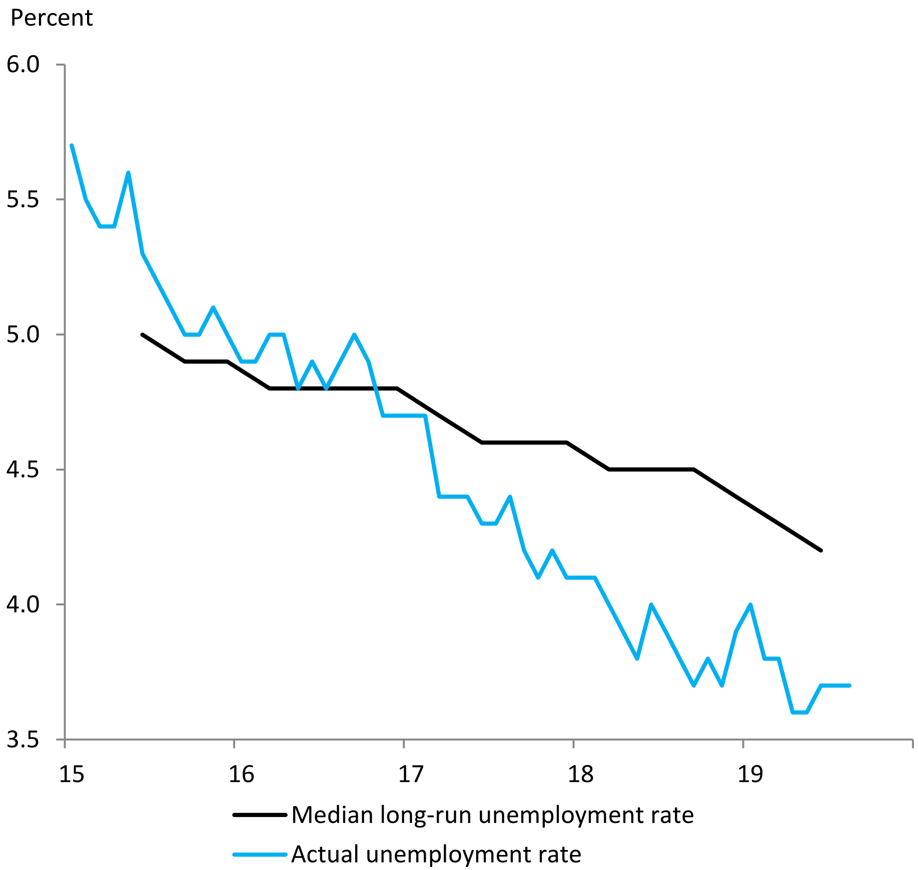


Source: UBS, FRB

Inflation is likely to be well below target this year

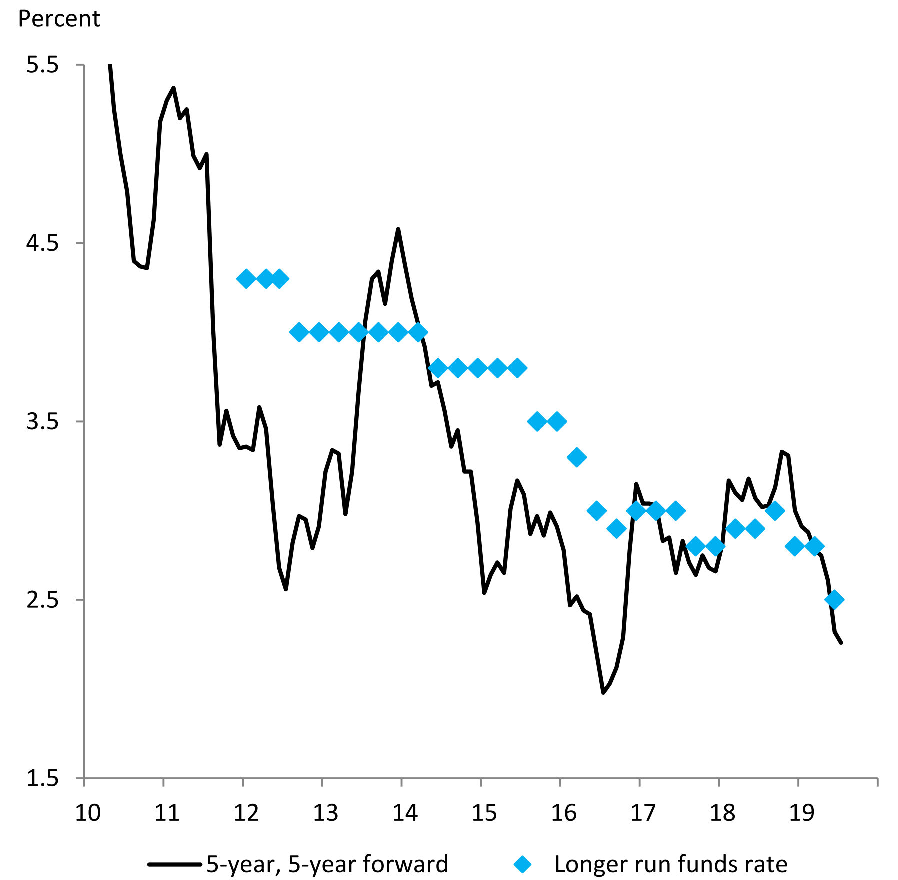
With unemployment rate below NAIRU, the FOMC will expect inflation to rise to target

The FOMC's long-run unemployment rate forecast tends to follow the data



Source: UBS, BLS, Federal Reserve

The longer-run dot fell to 2.5% in June. It has drifted notably lower since 2012, essentially following market interest rates



Source: UBS, Bloomberg, Federal Reserve

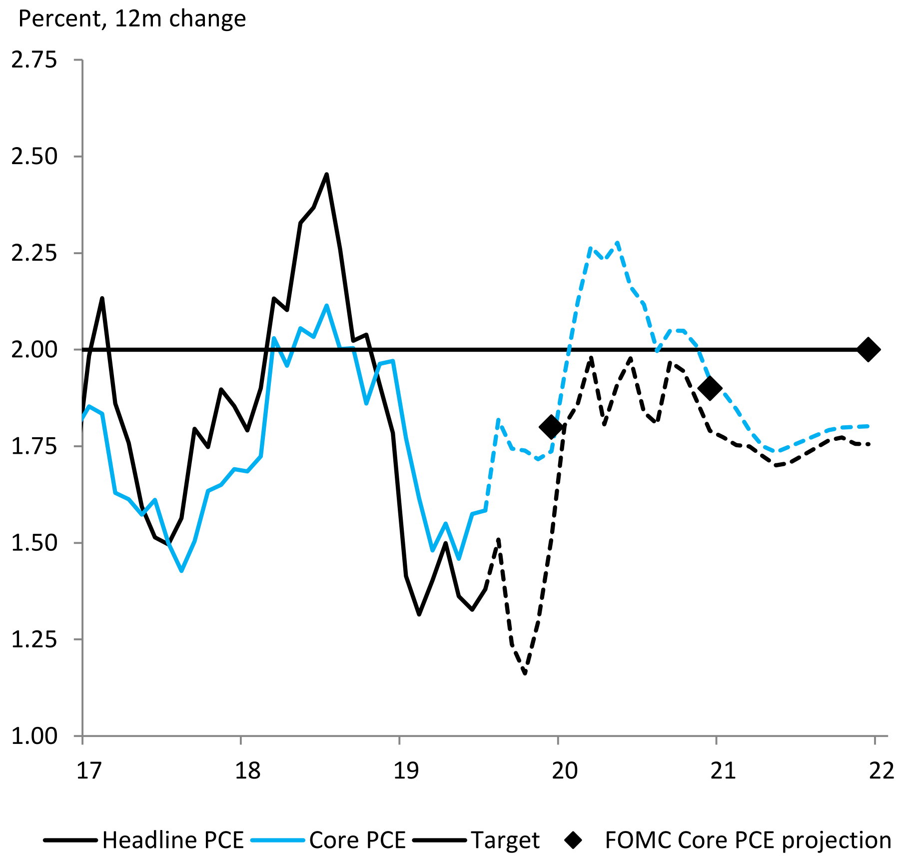
June FOMC: Rates and inflation lower, but real side little changed

Back in June, prior to the recent trade war escalation, the Committee saw real GDP growth at 2.1% this year

	Median			
	2019	2020	2021	Longer run
Change in real GDP	2.1	2.0	1.8	1.9
Mar. projection	2.1	1.9	1.8	1.9
Unemployment rate	3.6	3.7	3.8	4.2
Mar. projection	3.7	3.8	3.9	4.3
PCE inflation	1.5	1.9	2.0	2.0
Mar. projection	1.8	2.0	2.0	2.0
Core PCE inflation	1.8	1.9	2.0	
Mar. projection	2.0	2.0	2.0	
Federal funds rate	2.4	2.1	2.4	2.5
Mar. projection	2.4	2.6	2.6	2.8

Source: UBS, Federal Reserve

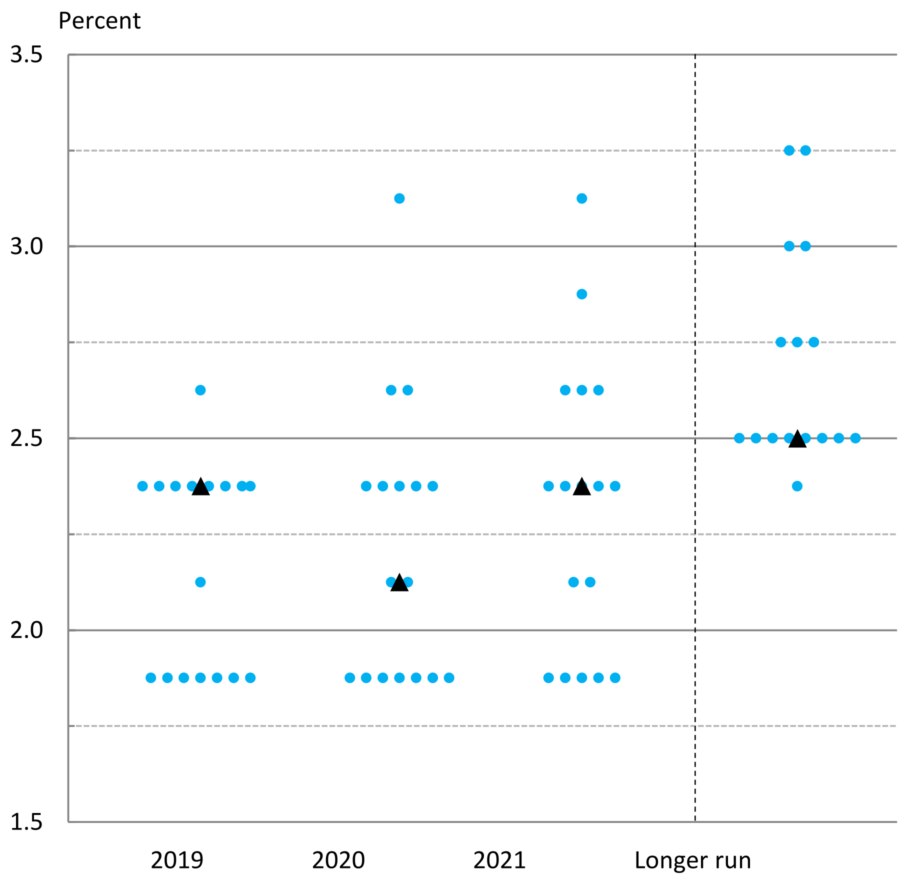
FOMC sees core inflation hitting 1.8% in 2019



Source: UBS, BEA, Federal Reserve

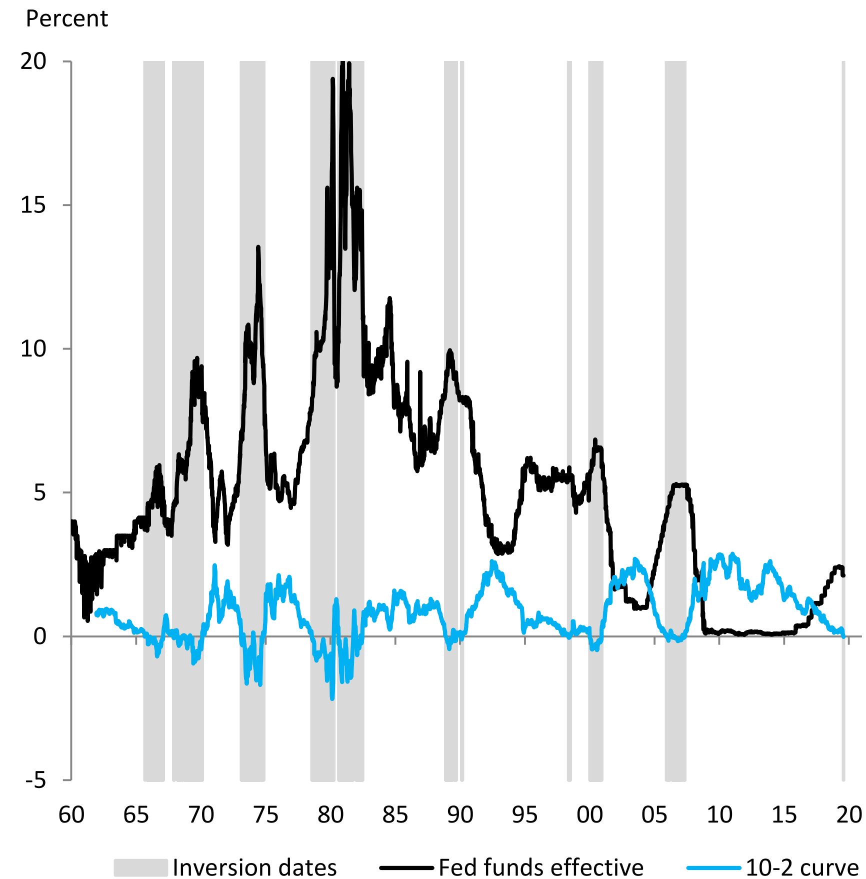
We expect the Fed to cut 25bp in September

A mass of the dots shifted downward at the June meeting



Source: UBS, Federal Reserve

Inversion of the yield curve has not always tightly predicted cuts in the past



Source: UBS, Federal Reserve

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Fed Balance – The unwind has ended

Unwind ended in August; Fed is now buying Treasuries in the secondary market

MBS continue to runoff, Fed is buying Treasuries to replace them

Reserves will likely continue to decline until next year; we expect $1.2 trillion

To hold reserves constant, the Fed will have to buy $20 billion or more in Treasuries each month

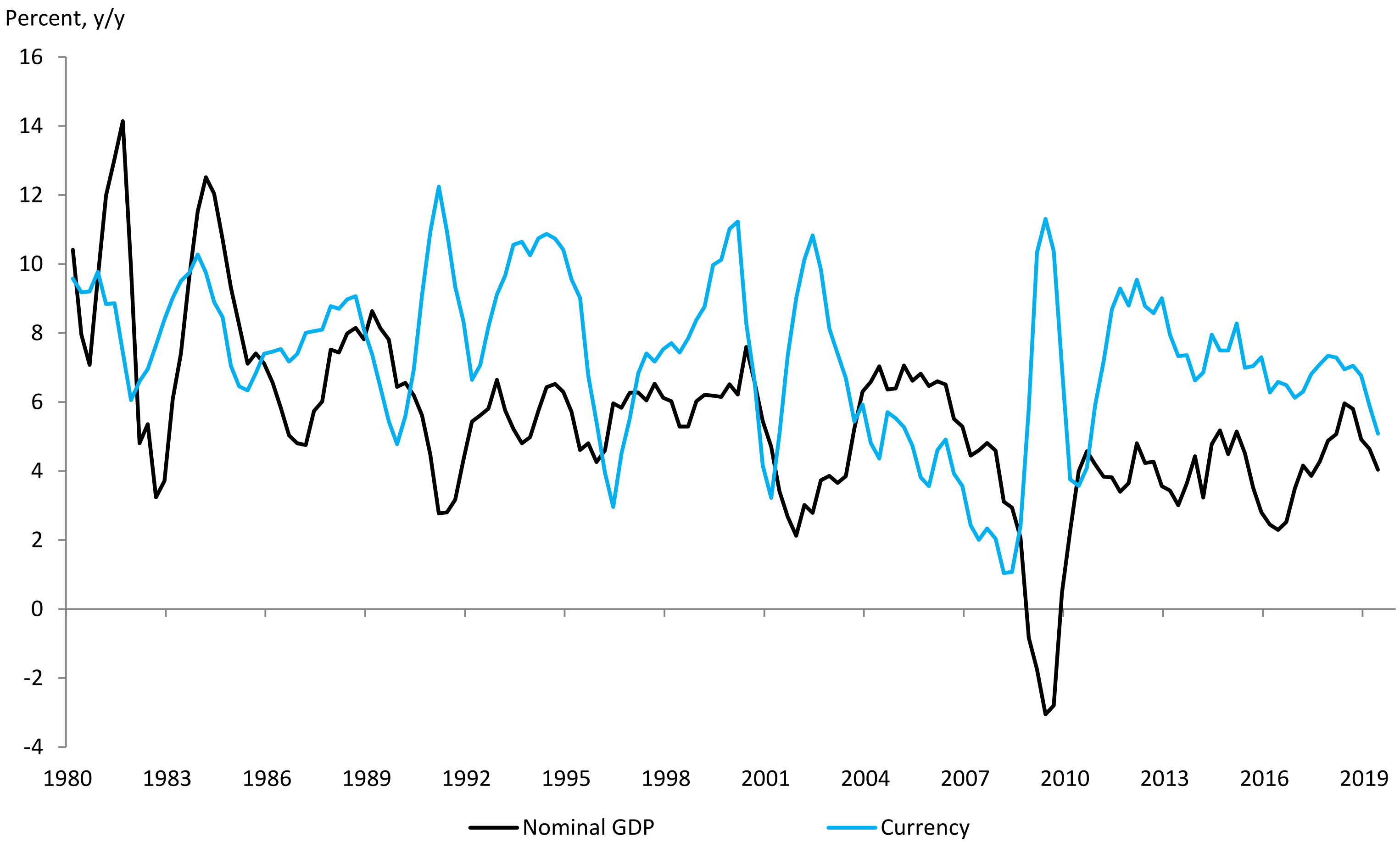
	Aug 8, 2007 Pre-crisis	Sep 2017 Pre-runoff	Aug 2019 Latest data	Mar 2020*
Total Assets	**0.9**	**4.5**	**3.8**	**3.8**
Treasuries	0.8	2.5	2.1	2.2
MBS	-	1.8	1.5	1.4
Other	-	0.2	0.2	0.2
Total Liabilities	**0.8**	**4.4**	**3.7**	**3.8**
Currency	0.8	1.5	1.7	1.8
Reserves	-	2.2	1.5	1.2
Reverse Repurchase Agreements	-	0.5	0.3	0.3
Treasury General Account	-	0.2	0.2	0.4
Other	-	-	-	-
Capital	-	-	-	-

Note: US$ trillions. *Projection.
Source: UBS, FRB

Currency and nominal GDP don't grow at the same rate

Currency has been growing close to 7% annually

Currency and Nominal GDP Growth

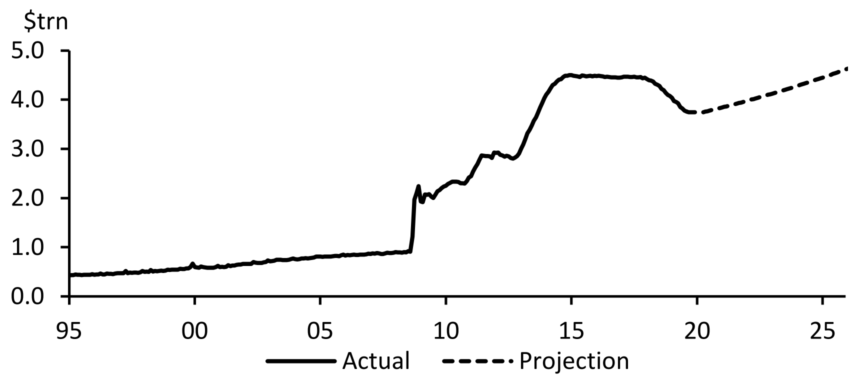


Source: UBS, FRB, BEA

The Fed's balance sheet hits a low of $3.8 trillion then rises again

Currency growth drives the balance sheet after mid-2020 (as it has always done)

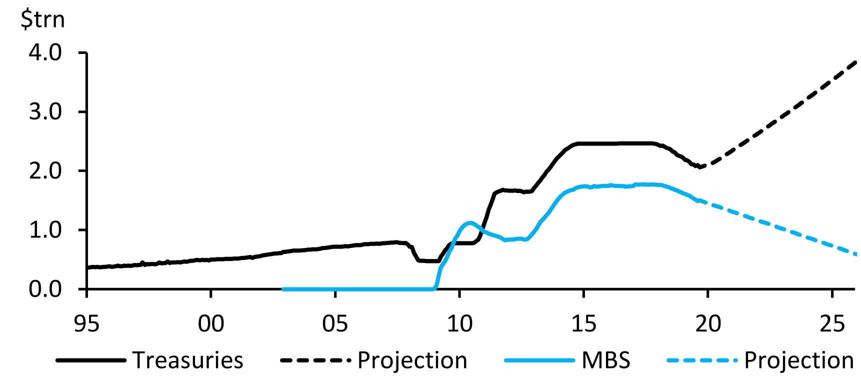
Total Assets



Source: UBS, FRB

Treasury securities and MBS A

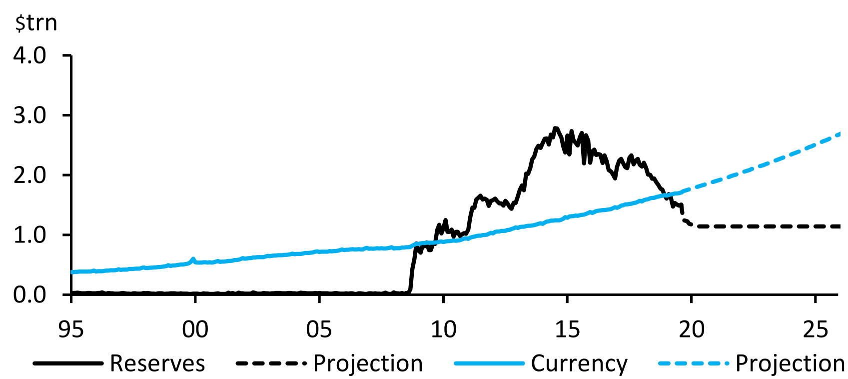
Treasury-MBS swap by the Fed



Source: UBS, FRB

Reserves and currency

Currency grows at the slowest pace we could envision



Source: UBS, FRB

UBS

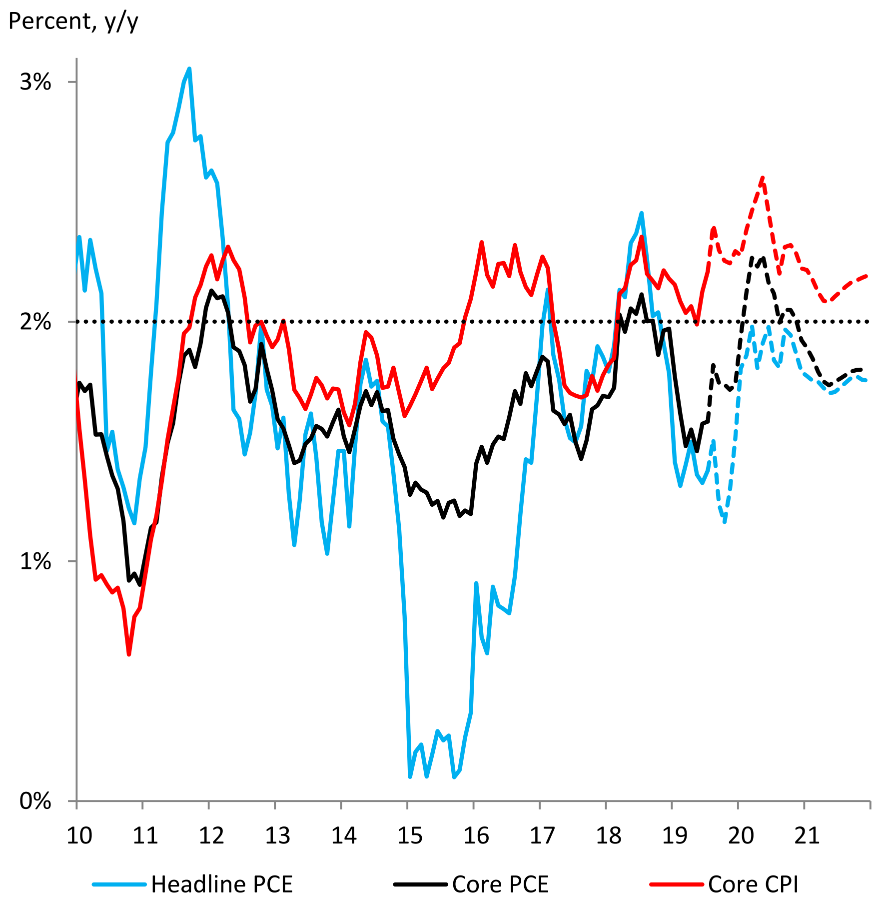
UBS

Inflation

Running below target

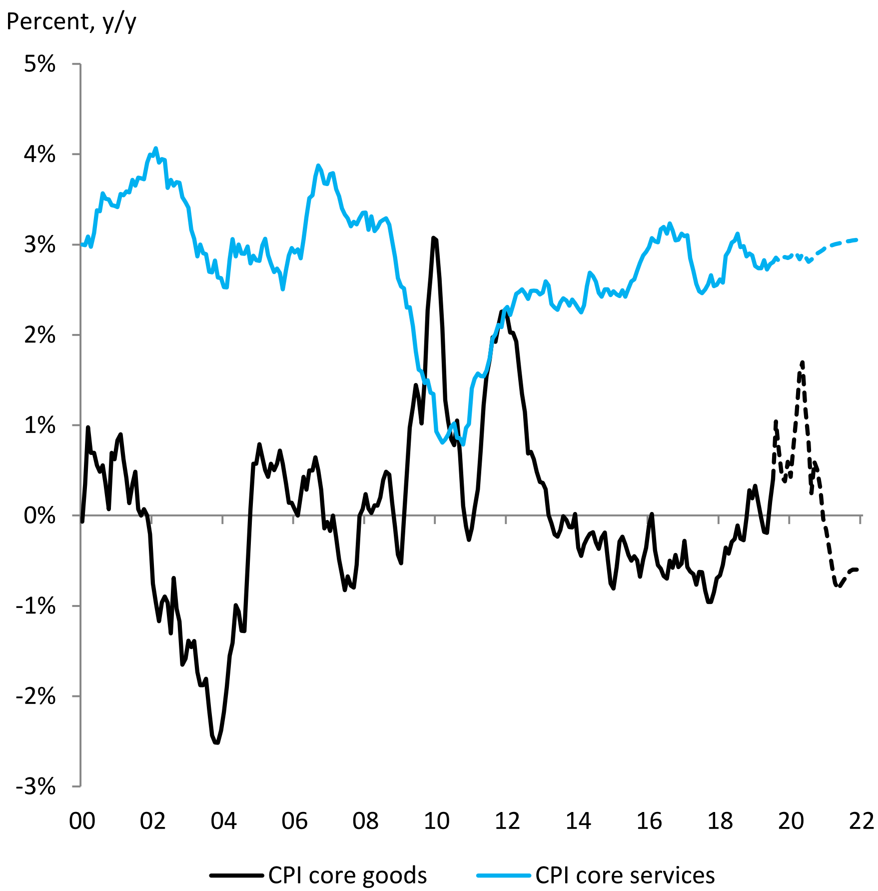
Tariffs have slightly boosted core inflation; oil has held down headline

With the hit to activity from tariffs, inflation settles below the Fed's target (once again) in 2021; tariffs raise prices not inflation



Source: UBS, BLS

Core goods inflation jumps higher with tariffs before returning to negative territory

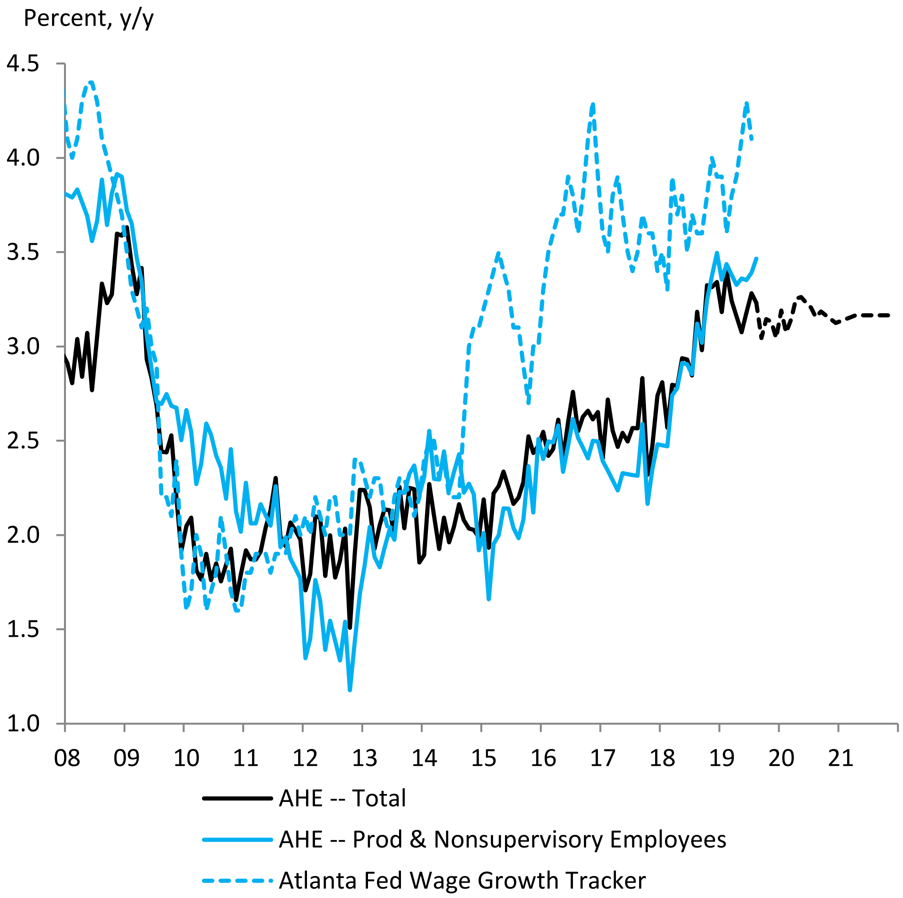


Source: UBS, BLS

Wage inflation accelerated over the past two years

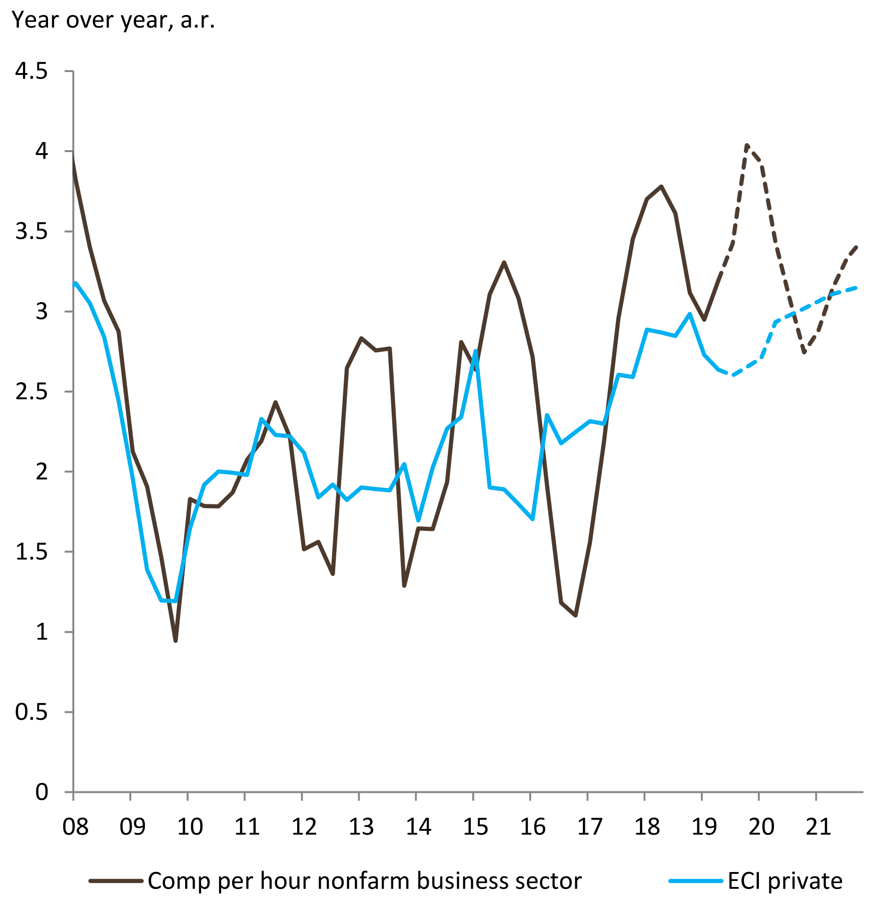
We expect stability at about 3% over next two

Hourly wages



Source: UBS, BLS

Hourly compensation



Source: UBS, BLS

UBS

The impact of the tariffs on inflation is expected to be temporary

Most of the effect of the tariffs implemented in 2018 has likely already passed through

Estimated effect of tariffs on consumer prices

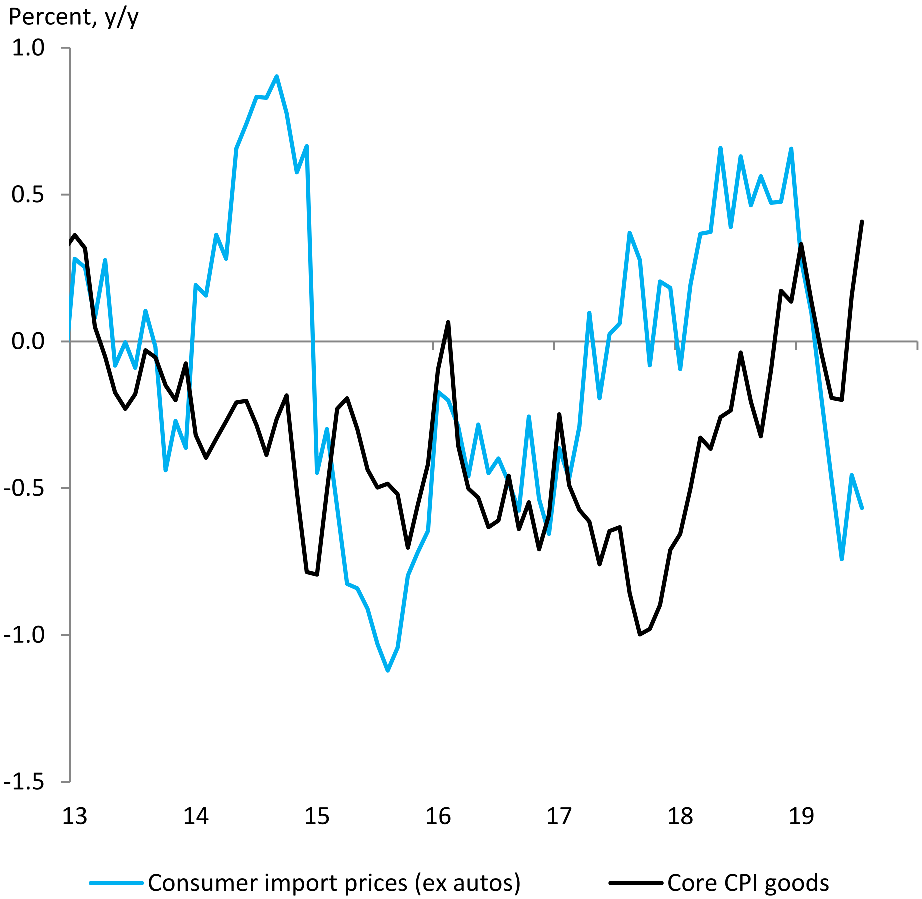
Tariffed item	Countries affected	Starting date	Size of tariff	$ imports (billions)	Pass-through rate	Core PCE price effect
2018 tariffs:						
Washing machines	Global	7-Feb-2018	20%	1.7	65%	0.002%
Solar panels	Global	7-Feb-2018	30%	7.3	65%	0.011%
Steel	Global w excp	1-Mar-2018	25%	9	65%	0.011%
Aluminum	Global w excp	1-Mar-2018	10%	13	65%	0.007%
Initial tranches of imports from China (tranche 1 and 2)	China	$34b 6-Jul-18; $16b 23-Aug-18	25%	50	13%	0.013%
$200b of imports from China to 10% (tranche 3)	China	24-Sep-2018	10%	200	29%	0.044%
Estimated effect of tariffs implemented in 2018				**381**		**0.09%**
2019 tariffs in our baseline:						
$200b of imports from China from 10% to 25%	China	10-May-2019	+15%	200	29%	0.066%
China tranche 4A	China	1-Sep-2019	15%	113	45%	0.058%
Additional 5% on tranches 1, 2, & 3	China	1-Oct-2019	+5%	250	26%	0.025%
China tranche 4B	China	15-Dec-2019	15%	157	84%	0.152%
Total of 2018 and 2019 tariffs						**0.39%**

Note: CPI effect calculated as size of tariff*pass-through rate*$ value of imports/$value of US GDP. Pass-through rate roughly based on share of imports coming from China.
Source: UBS

Inflation is low y/y but rising in the recent data

Core goods inflation has increased significantly since 2017

Core goods have risen on tariffs and consumer import prices (ex tariffs) have eased recently



Source: UBS, BLS

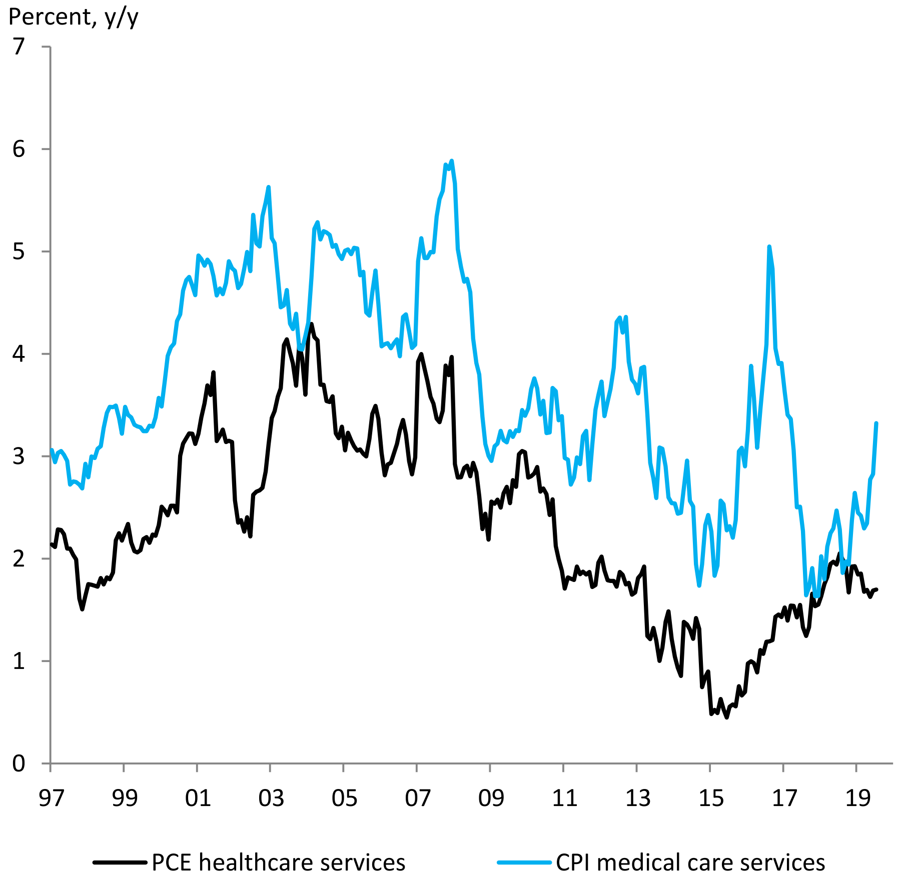
Core inflation has fallen this year, but is still above 2017 levels

	2017	2018	Jul-19	2019*	2020*	2021*
	12-month change					
Headline	**2.1**	**1.9**	**1.8**	**1.8**	**2.0**	**2.0**
Food	1.6	1.6	1.8			
Energy	6.9	-0.3	-2.0			
Core CPI	**1.8**	**2.2**	**2.2**	**2.3**	**2.2**	**2.2**
Core Services	**2.6**	**2.9**	**2.8**	**2.9**	**2.9**	**3.1**
OER	3.2	3.2	3.4			
Rent	3.7	3.5	3.8			
Lodging	0.6	0.7	4.6			
Medical care	1.6	2.6	3.3			
Airline	-4.0	-2.6	1.3			
Educ & comm	-1.7	0.2	0.6			
Core goods	**-0.7**	**0.1**	**0.4**	**0.6**	**0.0**	**-0.6**
Apparel	-1.6	-0.1	-0.5			
New vehicles	-0.5	-0.3	0.3			
Used Vehicles	-1.0	1.4	1.5			
Medical care	2.3	-0.5	-0.4			

Note: Yearly numbers are Dec over Dec. *Forecast.
Source: UBS, BLS

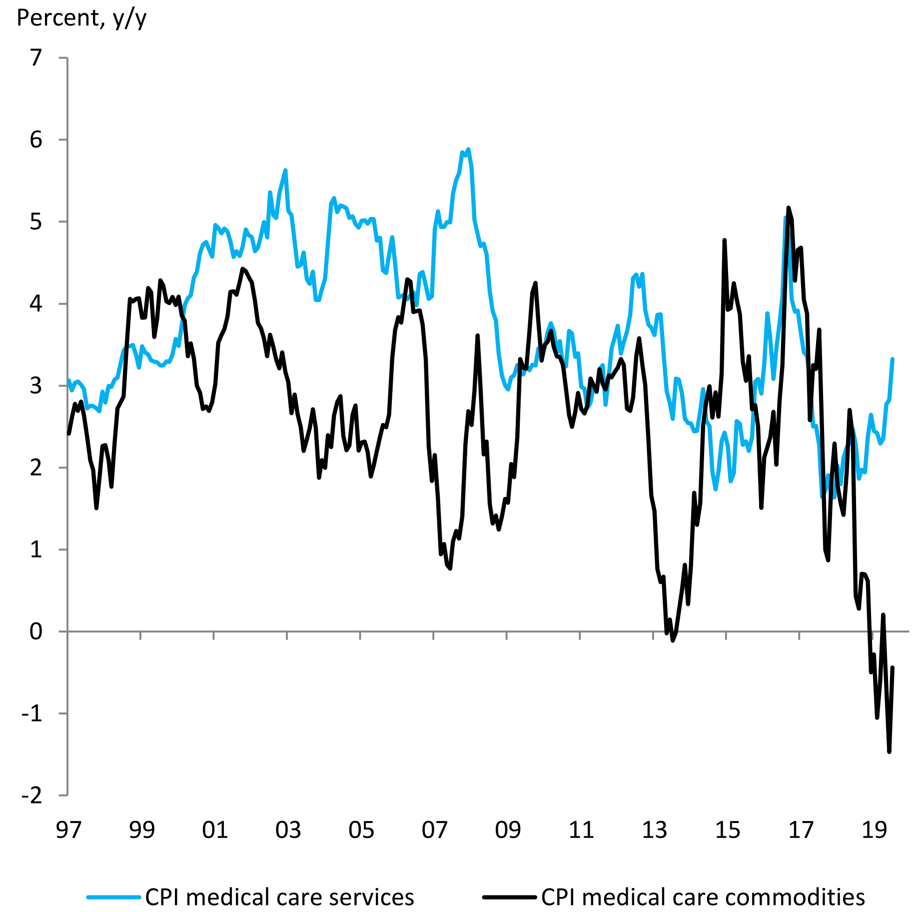
Medical services prices remain low compared to the previous expansion

CPI medical services inflation has been rising, while PCE healthcare service inflation has slowed



Source: UBS, BLS, BEA

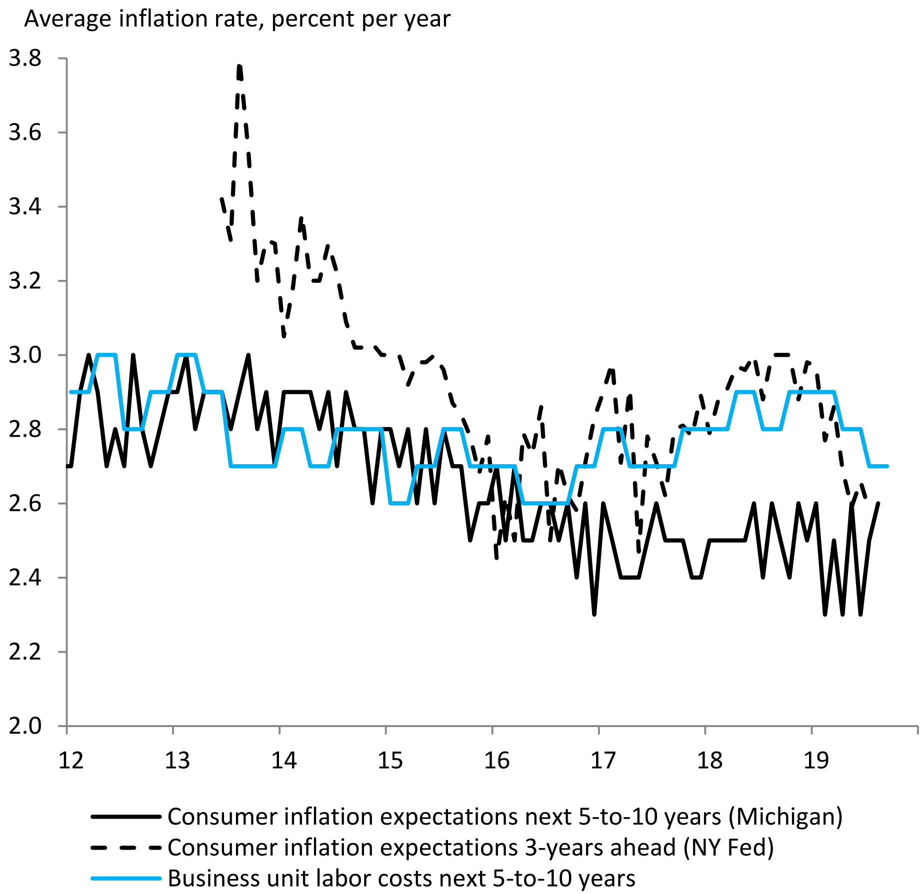
Medical care commodities inflation slowed last year



Source: UBS, US Census

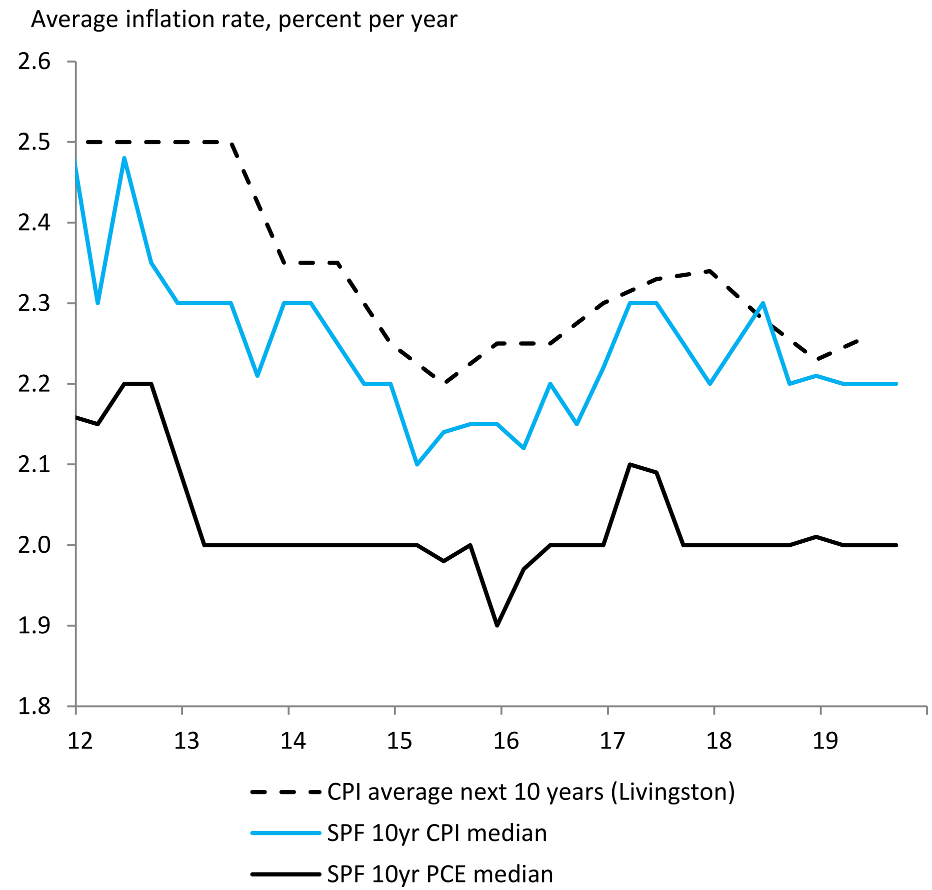
Some measures of long-run inflation expectations have eased

Inflation expectations of consumers and businesses have dipped since December



Source: UBS, Michigan SRC, Atlanta Fed, New York Fed

Long-term PCE expectations remain at the FOMC objective, but CPI expectations have slipped

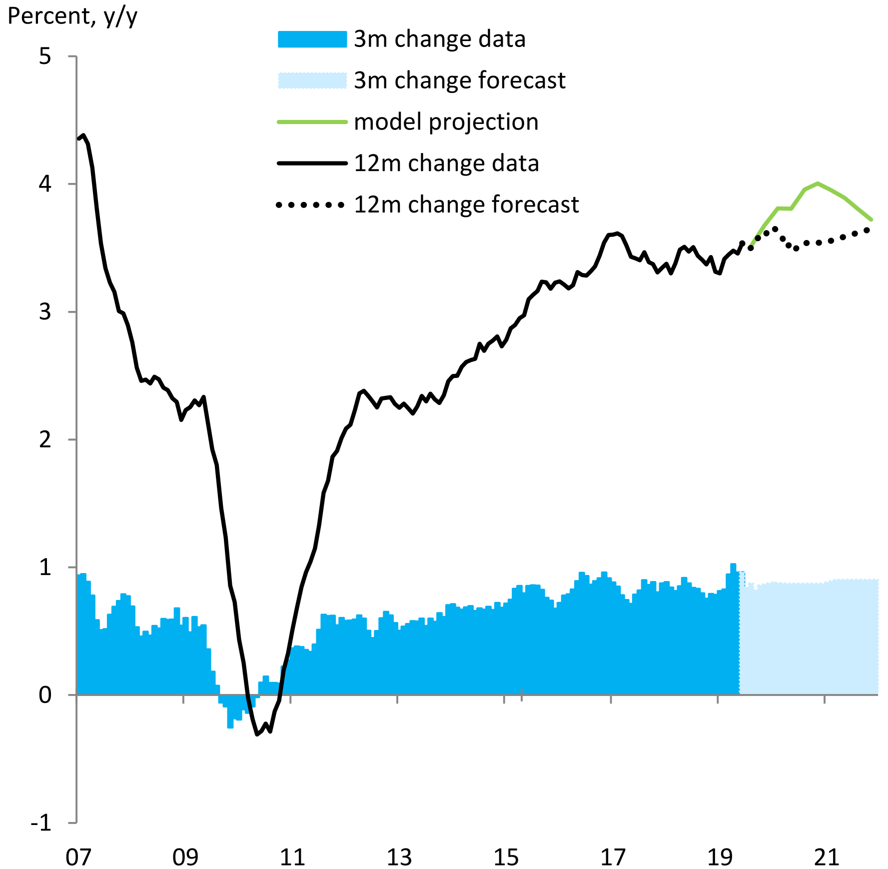


Source: UBS, Philadelphia Fed

Rising rents push overall inflation higher

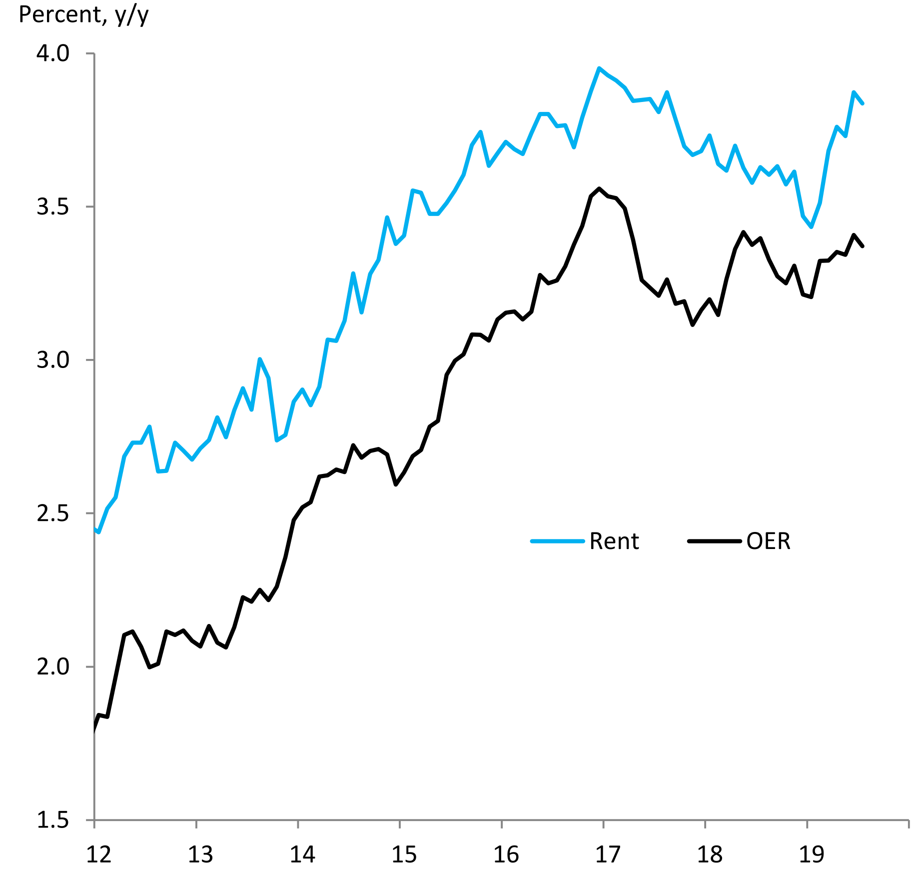
Rents are 40% of core CPI basket (18% of core PCE)

We expect housing rents to move up a little less than 4% per year amid low unemployment and continued low vacancy rates



Source: UBS, BLS

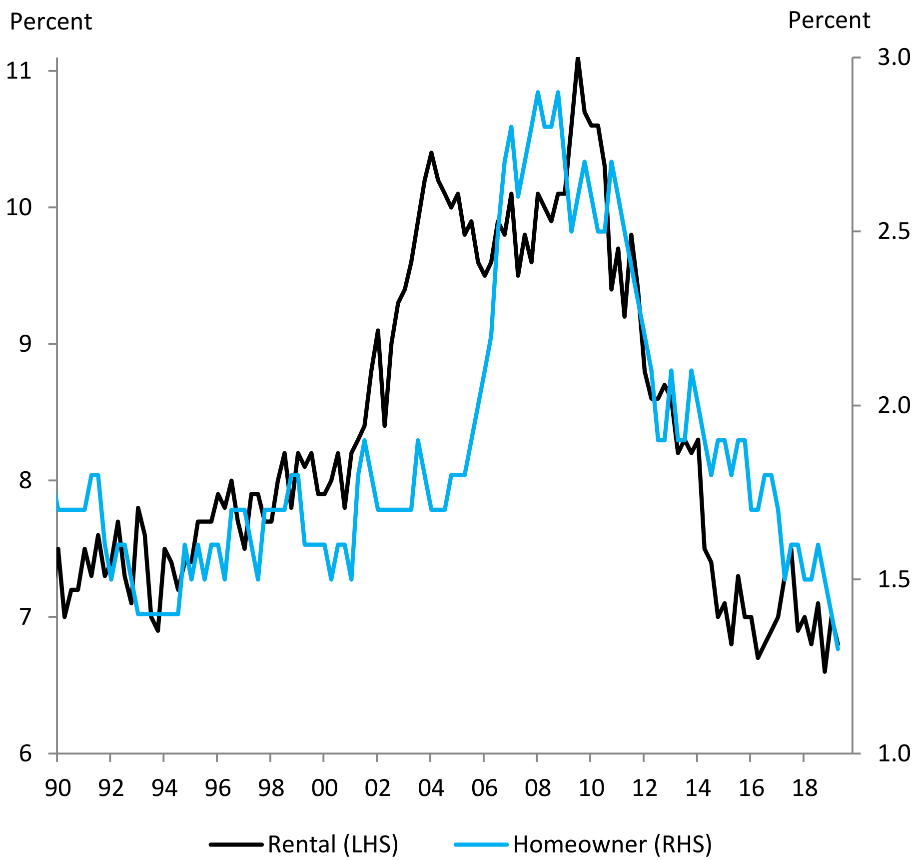
Both rents and OER have slowed slightly since early 2017



Source: UBS, BLS

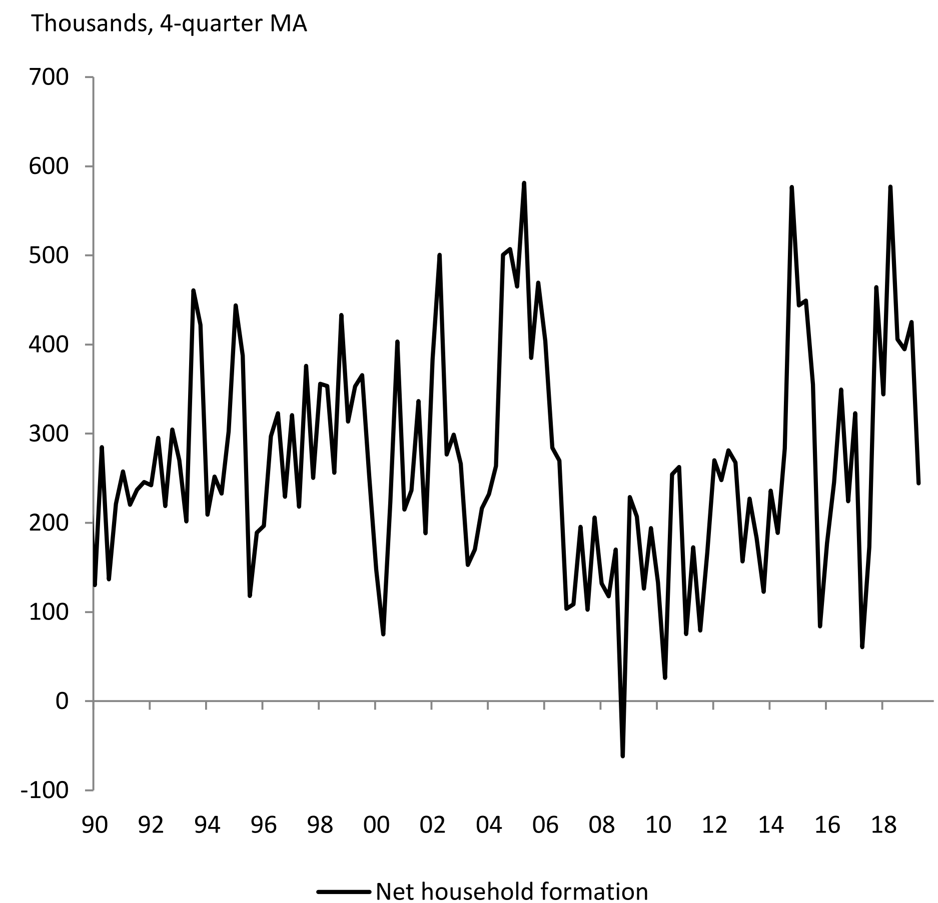
Vacancy rates remain low; household formation recovering

The low vacancy rate should put upward pressure on rents, house prices, and starts



Source: UBS, US Census

Household formation had stabilized but shows some hints of recent softness



Source: UBS, US Census

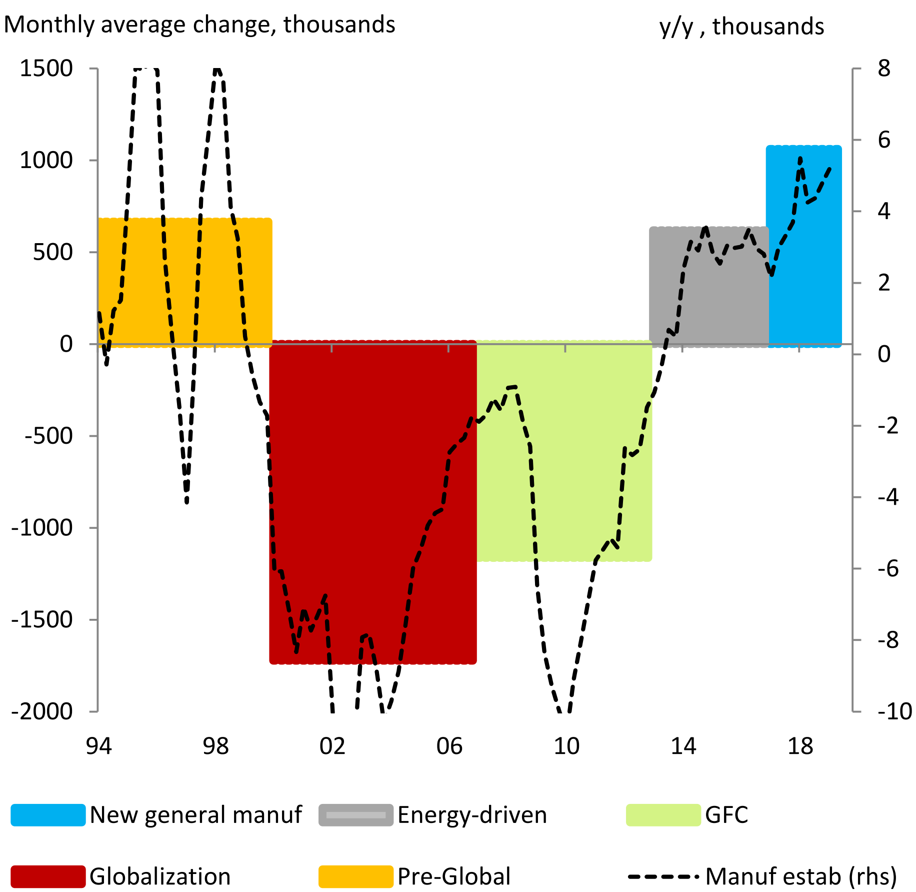
UBS

UBS

Supporting charts

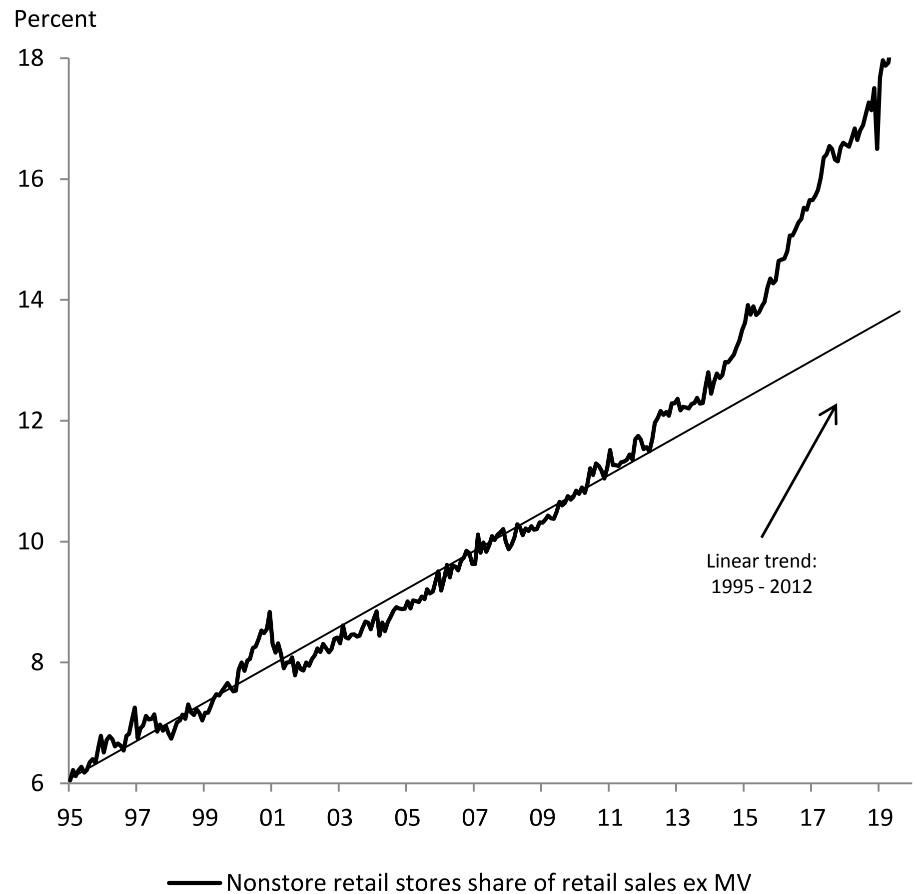
The expansion of manufacturing and the consolidation of the retail sector both play substantive rolls in our outlook

The US experienced a surge of new manufacturing establishments in 2017-18; the strongest gains since the 90s; these establishments are especially vulnerable to tariff shocks



Source: UBS, BLS

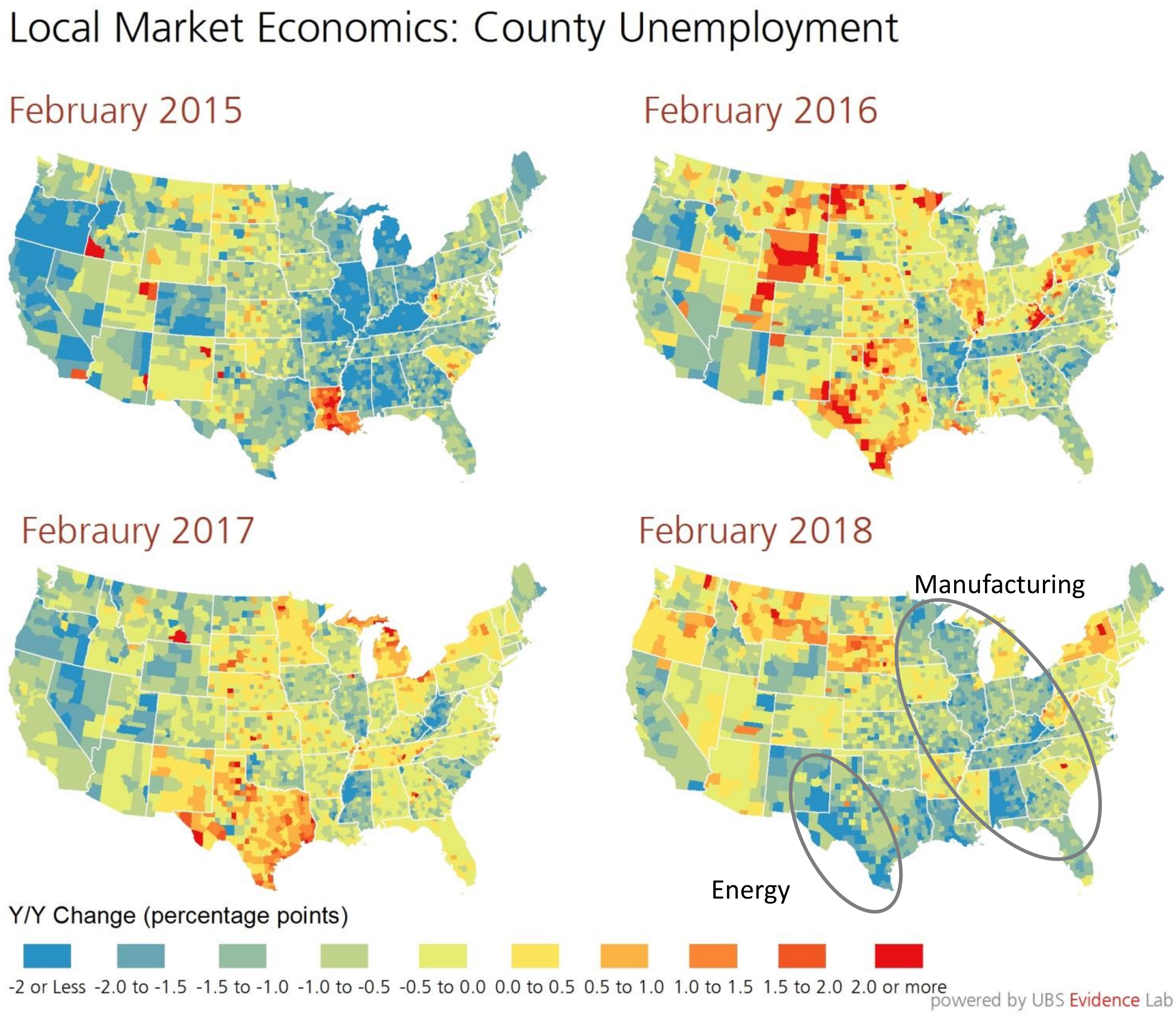
Consumers continue to shift purchases towards online only outlets; this shift is disruptive to traditional retailers



Source: UBS, US Census

UBS

The unemployment outlook has improved substantially in industrial states

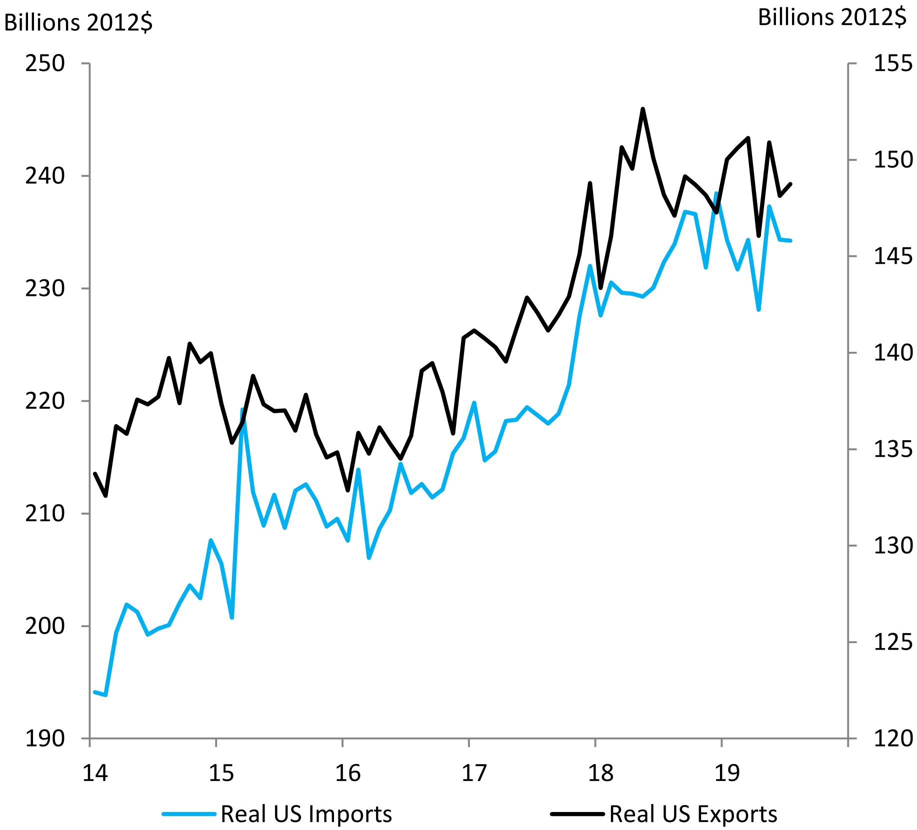


Source: UBS Evidence Lab, UBS, Census

Tariffed goods drive trade weakness

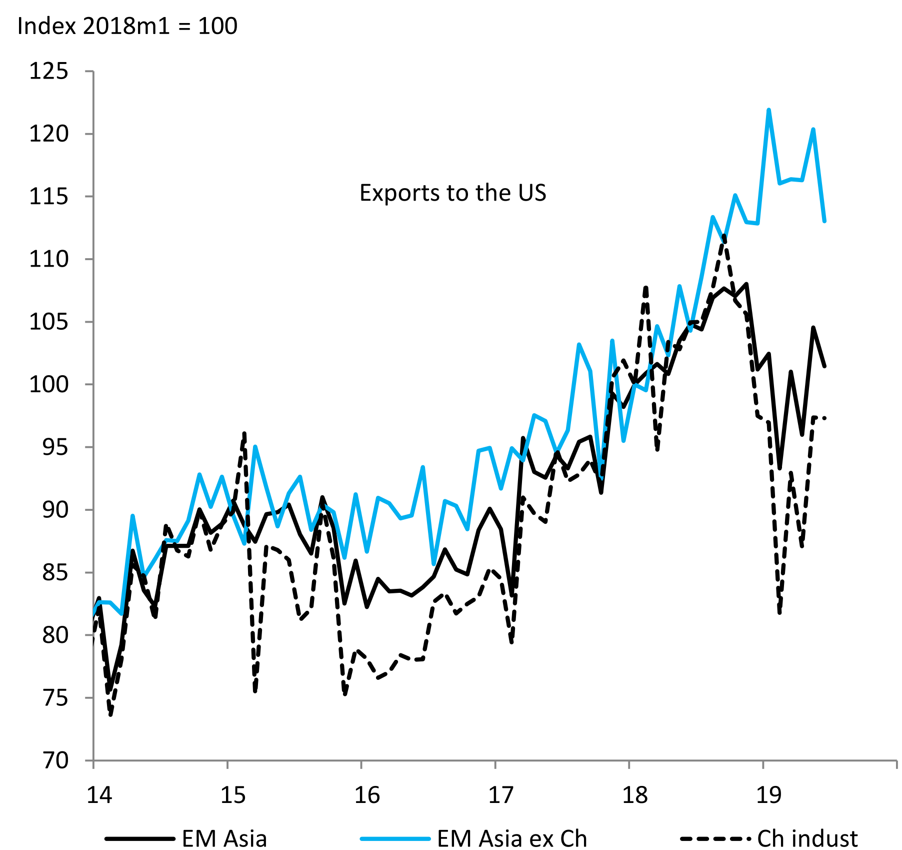
Excluding China trade volumes continue to expand

Real imports and exports have been moving roughly sideways since mid-2018



Source: US Census, UBS

Exports from non-Chinese, EM Asian sources continue to rise at about their pre-tariff pace

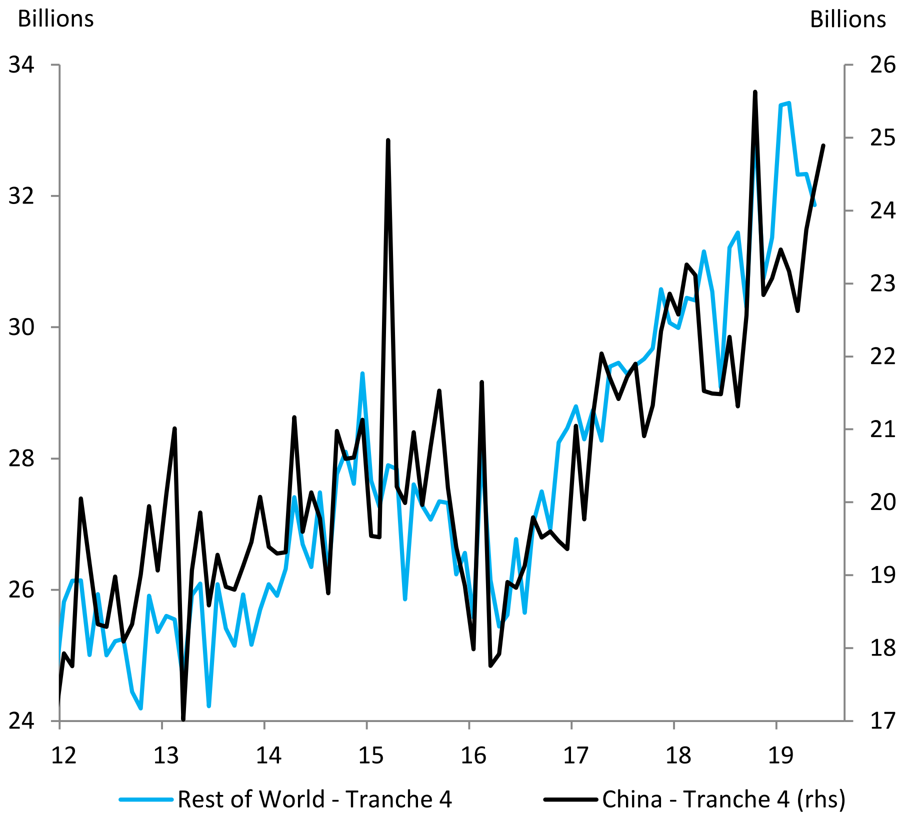


Source: Haver Analytics, UBS

UBS

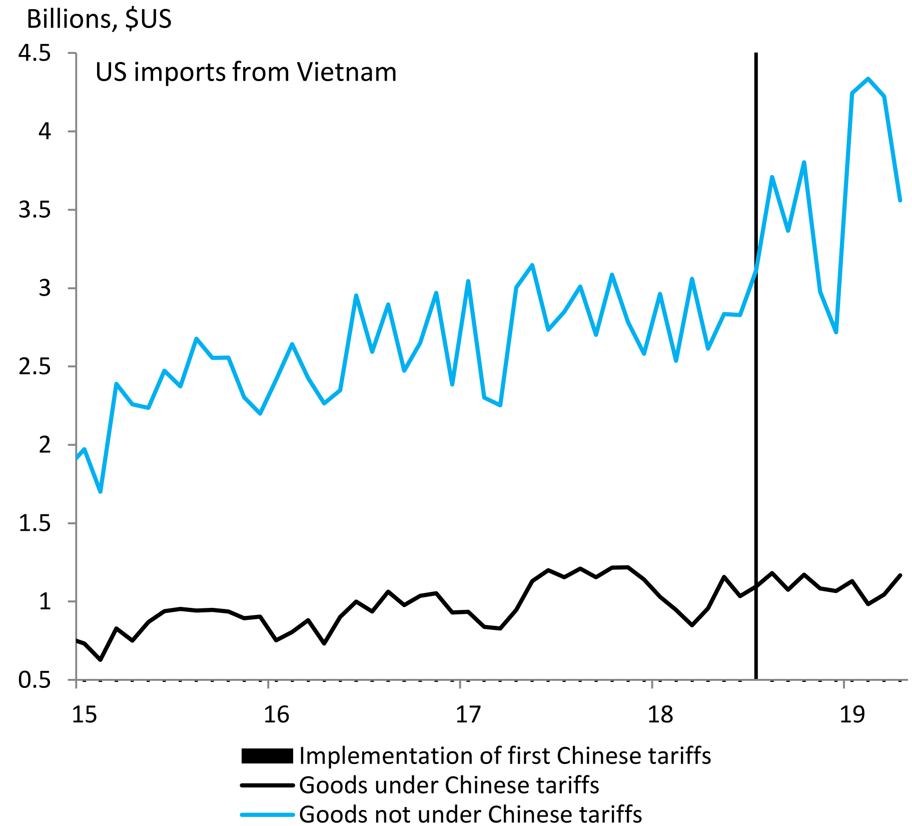
Even from China, items not yet tariffed continue to grow at a normal(ish) pace

Fourth tranche ($300bn): US imports from China have not fallen so far



Source: US Census, UBS

No evidence that Vietnam is a transshipping hub for tariffed goods

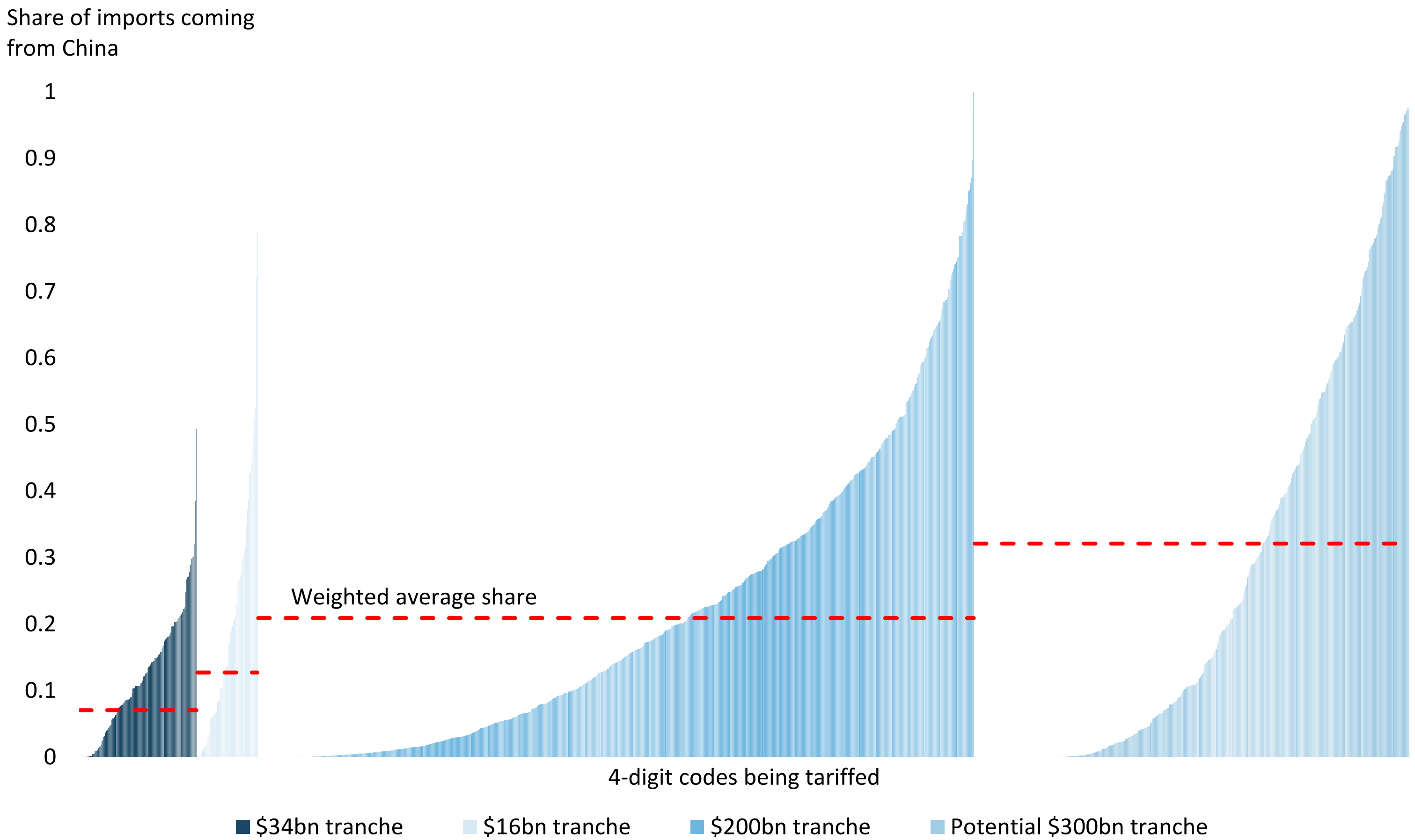


Source: US Census, UBS

Tariffs on the $200bn tranche increased to 25% in May

Tariffs of 10% will be implemented on the $300bn tranche in Sept and Dec

Each tranche of tariffed goods has a higher share of US imports coming from China

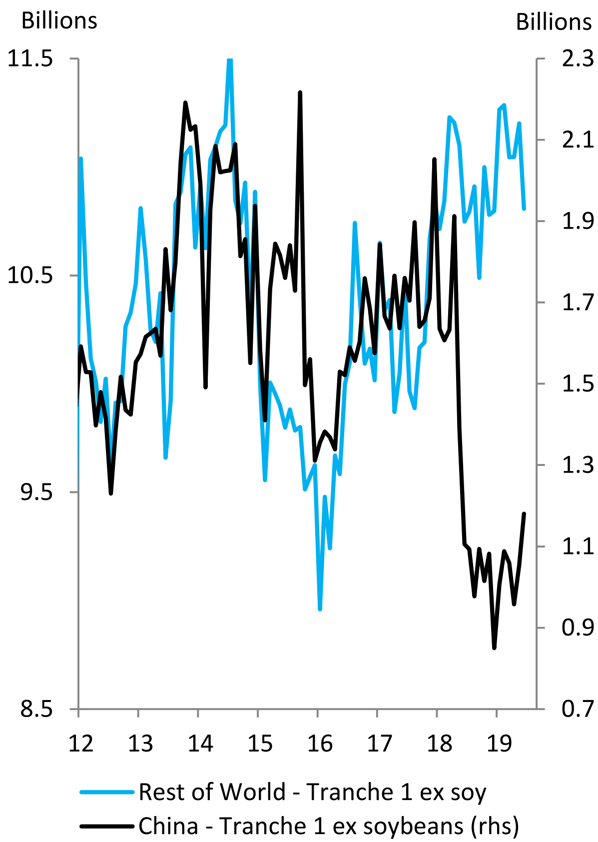


Source: US Census, UBS

UBS

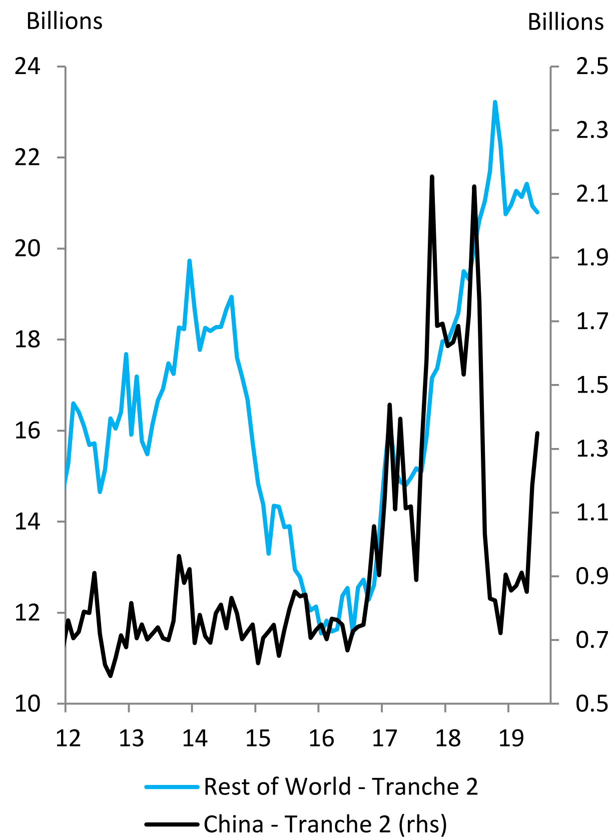
US exports to China are also seeing pain on retaliation

Retaliation to first tranche: US exports down sharply (though decline started before tariffs)



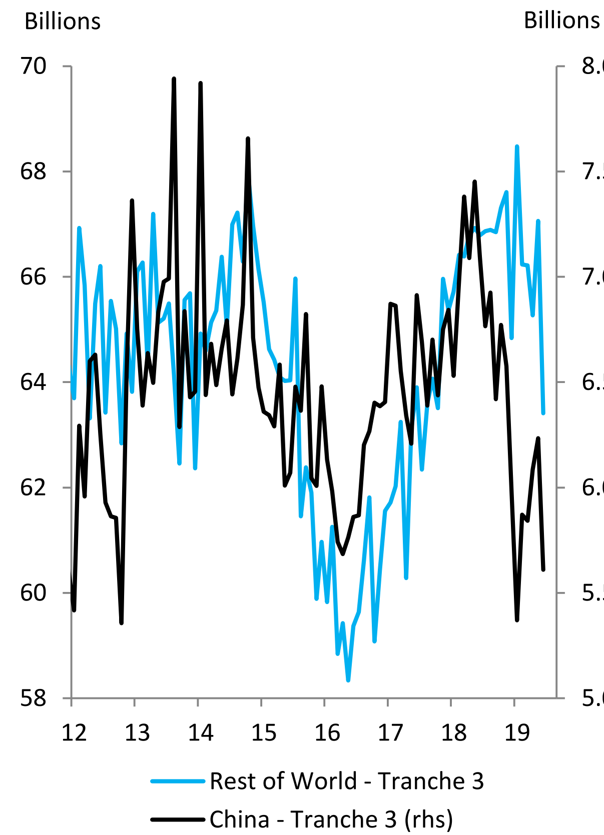
Source: US Census, UBS

Retaliation to second tranche: US exports down significantly; acceleration pre-tariff was too early to be just front-running



Source: US Census, UBS

Retaliation to third tranche: Hit peak well before tariffs. Weakness: both tariff effects and pre-existing weakness in Chinese demand

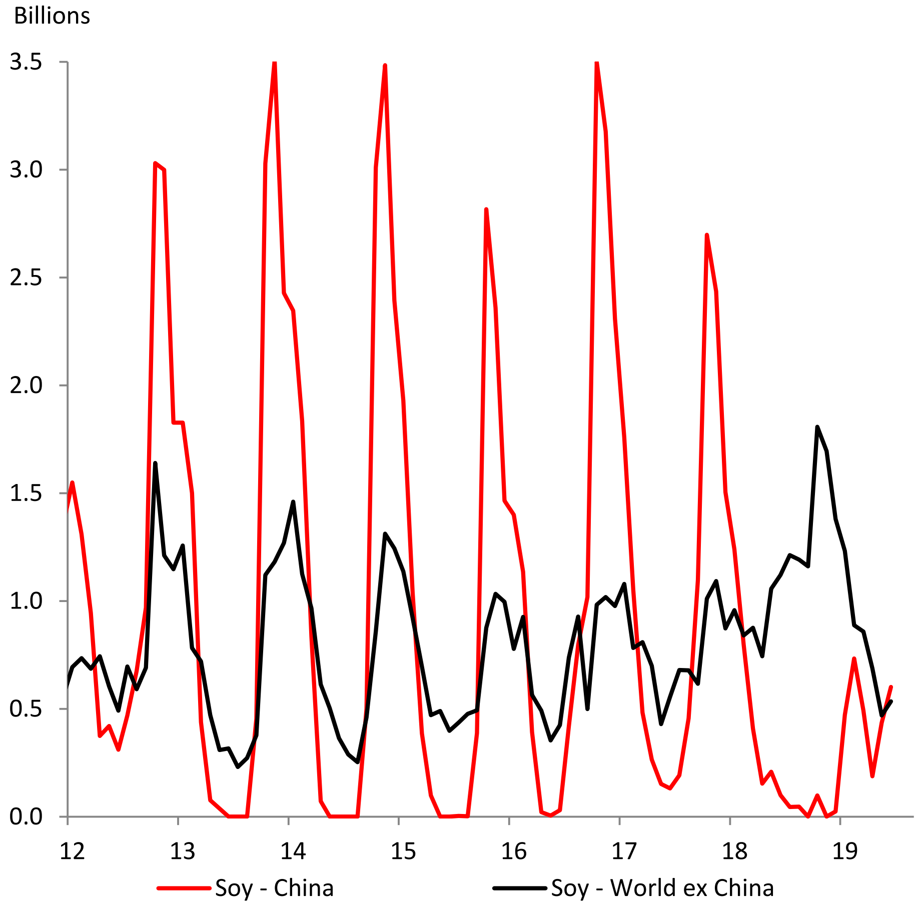


Source: US Census, UBS

UBS

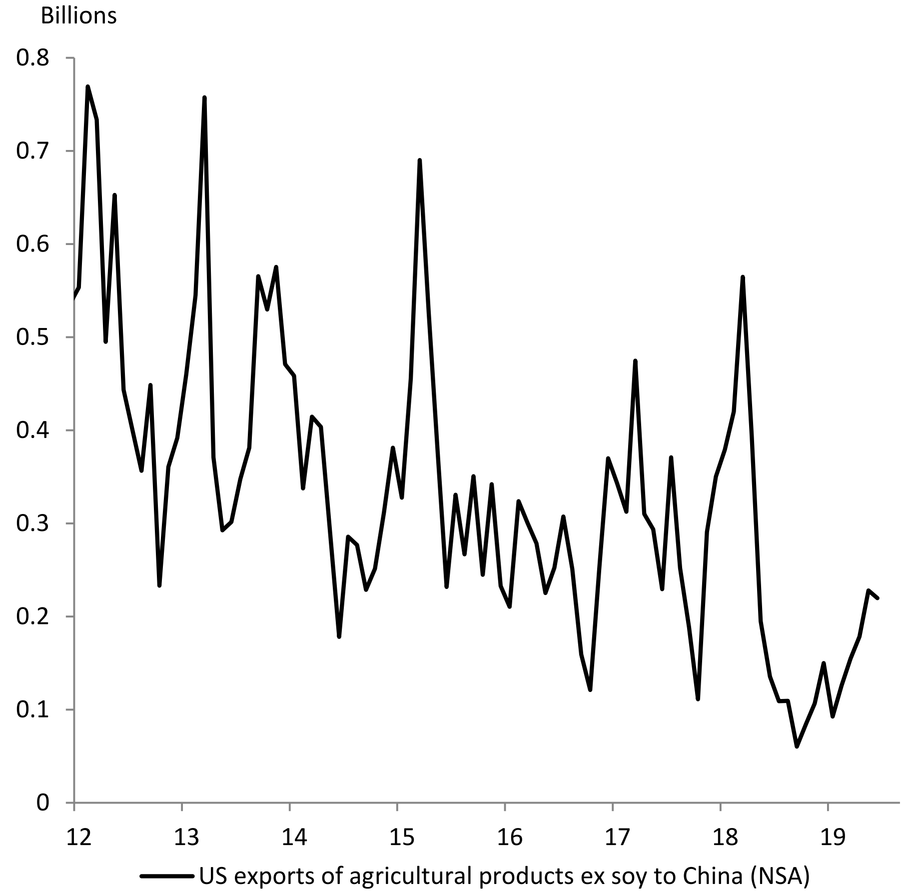
China: "No further imports of ag product"

Shipments of soy to non-traditional fall buyers increased as China demand fell to zero



Source: US Census, UBS

Exports of other ag products have trended lower but are still substantial

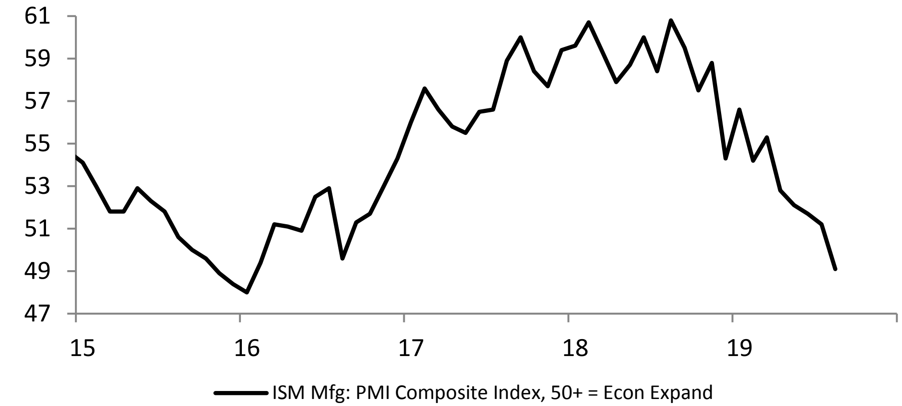


Source: US Census, UBS

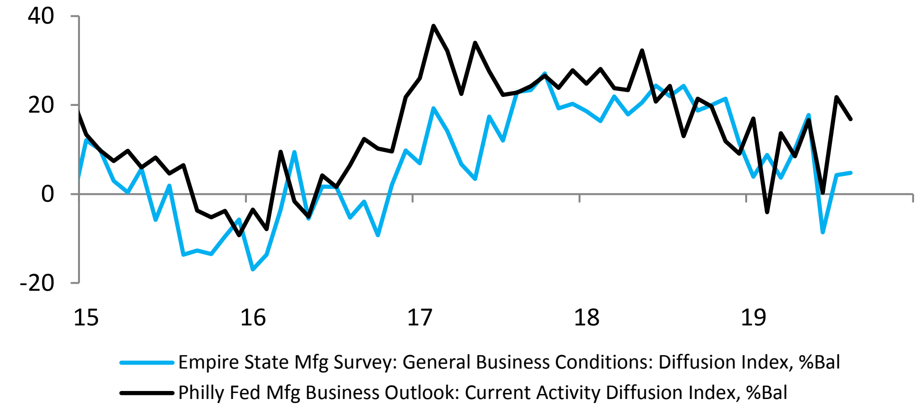
Note: US farmers continue to face outsized tariff headwinds; but, they have managed to find alternative sources of demand for some product s. While shipments of soy to China were near zero last fall, exports of soy to the rest of the world were elevated, much as we expected shortly after tariffs were announced (Link). We also note that, while purchases are not sufficient to make up for lost volumes last fall, exports to China in 2019 are very large for time of year. The US has shipped soy to China at a pace just below 0.5bln per month, well above the zero shipments typically observed in the first few months of the year.

UBS

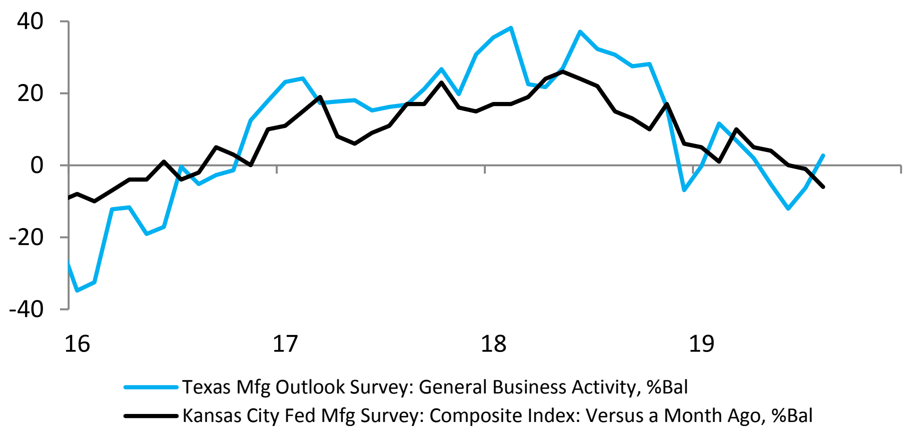
Manufacturing sentiment has been weakening



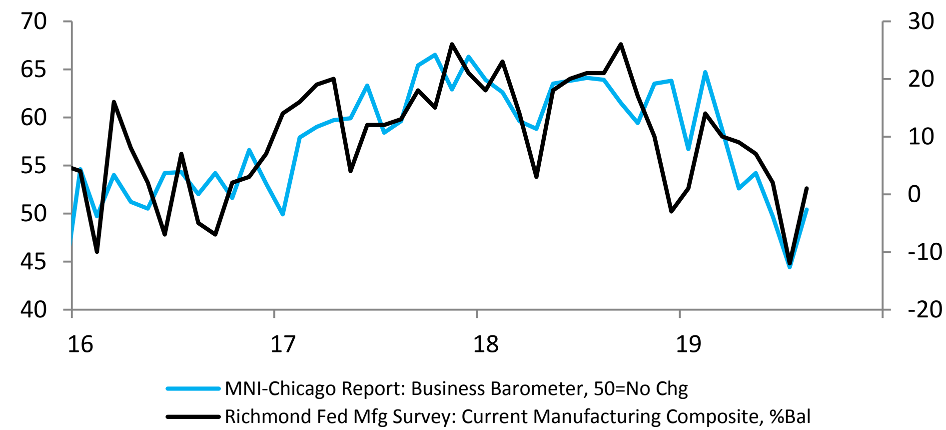
Source: ISM, UBS



Source: NY Fed, Philly Fed, UBS



Source: Dallas Fed, Kansas City Fed, UBS

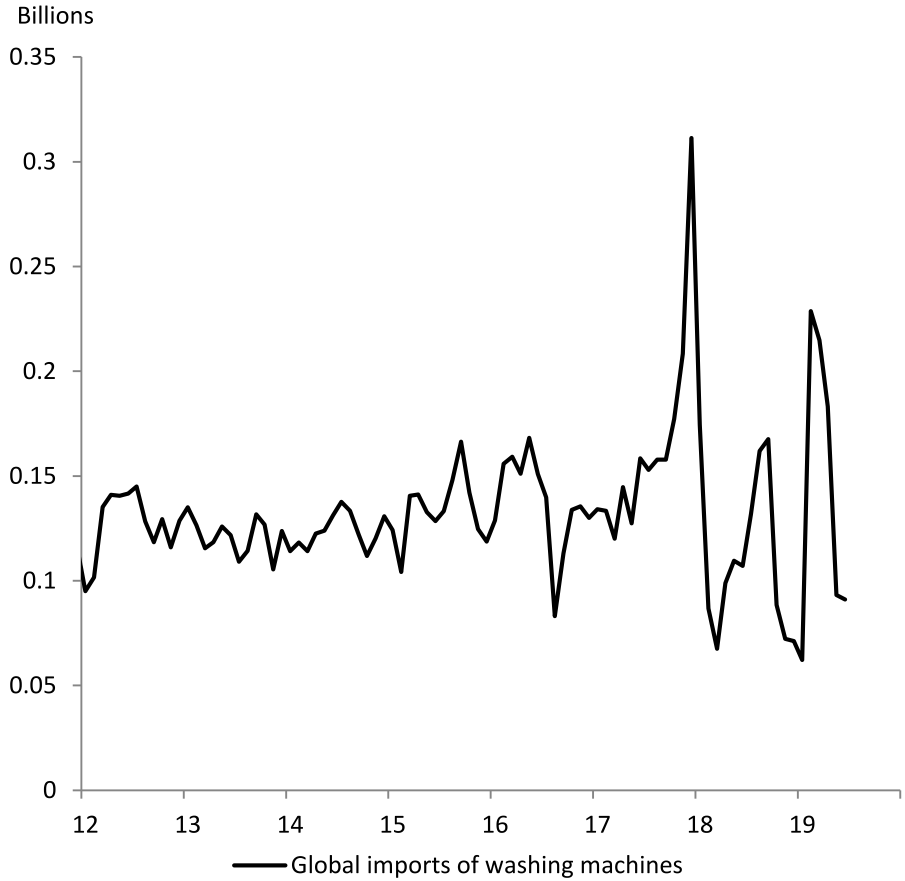


Source: Richmond Fed, Dallas Fed, Kansas City Fed, UBS

A case study on washing machines

Our macro forecast is guided, in part, by the response of washing machines to tariffs

Washing machine imports soared pre-tariff, as manufacturers knew tariffs were coming



Source: UBS, US Census

Prices of laundry equipment, washing machines and dryers, jumped 20% post-tariff, retracing

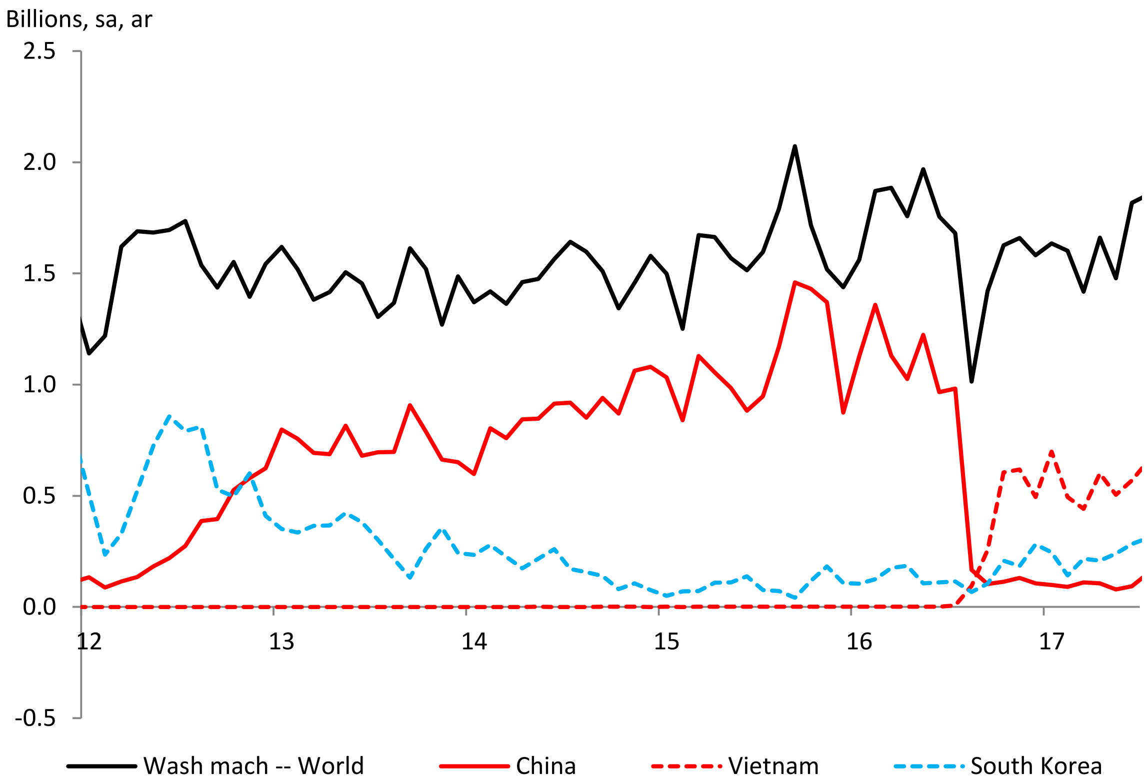
Source: UBS, BLS

UBS

A case study on washing machines

Our macro forecast is guided, in part, by the response of washing machines to tariffs

Tariffs on Chinese washing machines led to an immediate substitution to Vietnamese imports



Source: UBS, US Census

Mapping energy into the national economy

Everything in picture is energy-related; nothing is counted as such in national accounts

Imagery ©2017 Google, Map data ©2017 Google United States

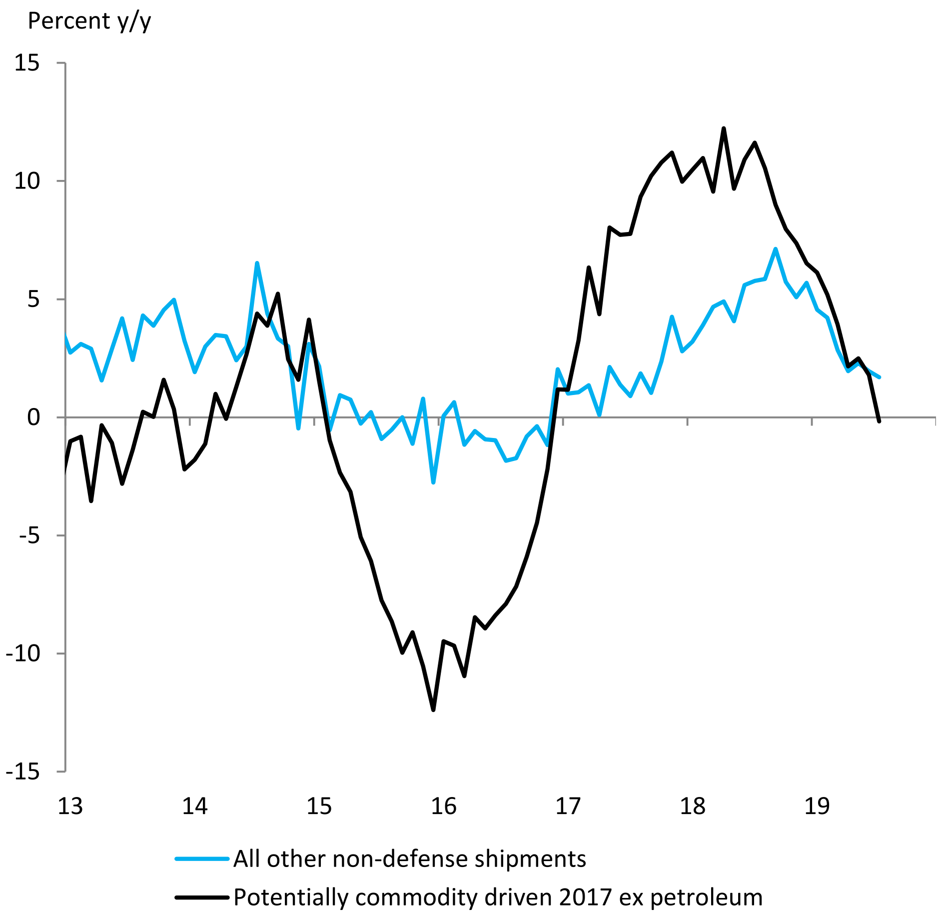
Source: Google maps -- 14207 U.S. 2, Williston, ND 58801 , UBS Note: 1, hotel construction; 2, oil rig assembled but not active; 3, construction machinery; 4, heavy duty trucks; 5, light trucks; 6, machinery shop; 7, pumps for oil but not active; 8, rig pieces ready to be assembled.

UBS

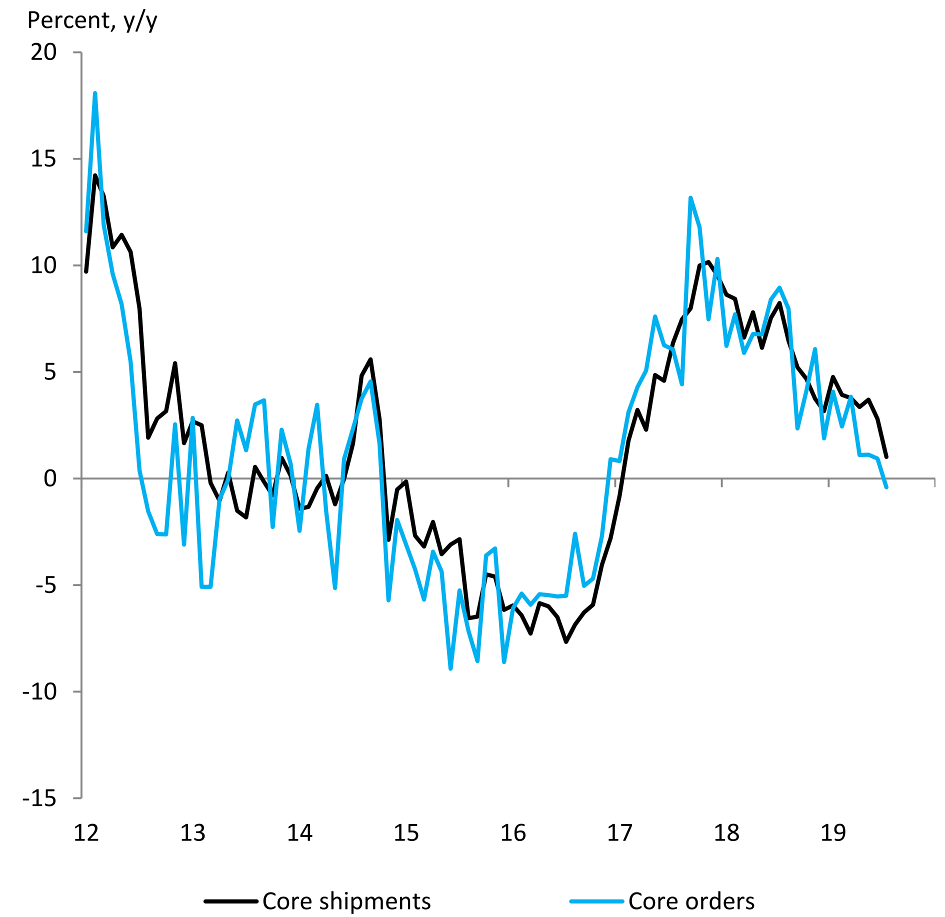
The initial rise in capital goods shipments was driven by energy

We have seen a rise in non-energy shipments driven by manufacturing

Non-energy shipments slowed post tariffs; energy weakening rapidly



The slowing in capital goods shipments intensified late last year

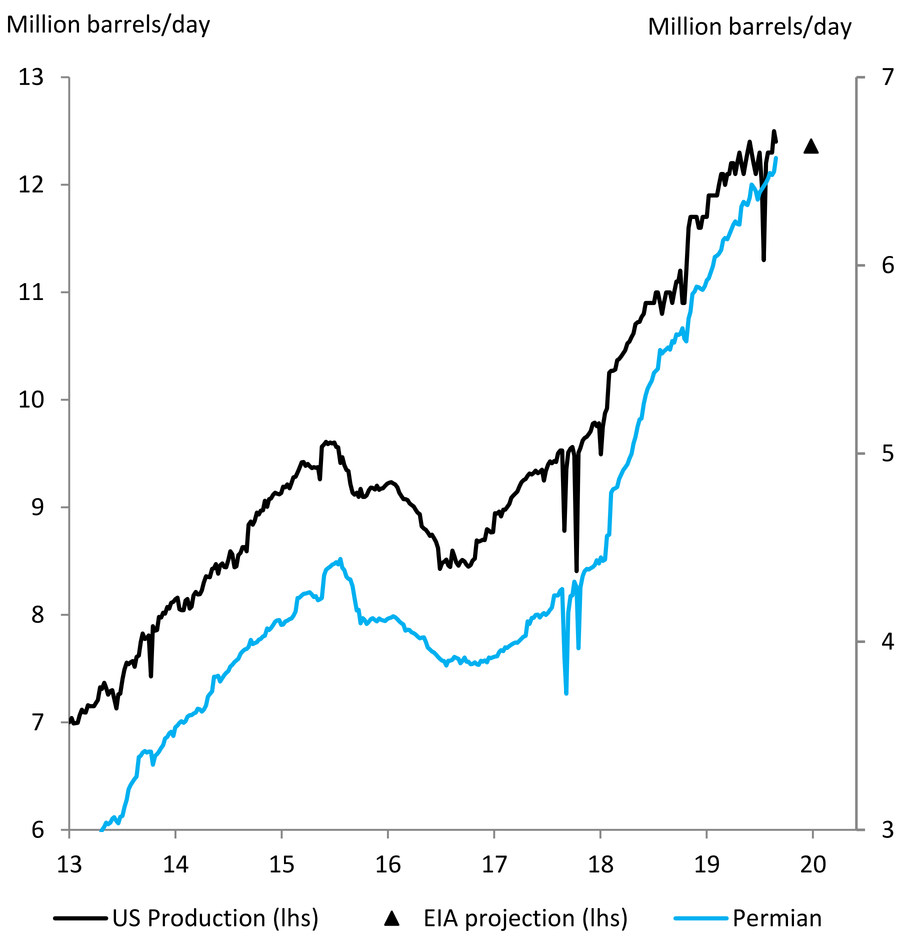


Note: Potentially commodity driven categories include primary metals, fabricated metal products, construction machinery, mining, oil, and gas field machinery, industrial machinery, ventilation, heating & air conditioning, metalworking machinery, turbines and other power generating machinery, heavy duty trucks, petroleum and coal products, electric equip excluding appliances, batteries, and electric lighting.
Source: UBS, US Census

Energy output continues to rise

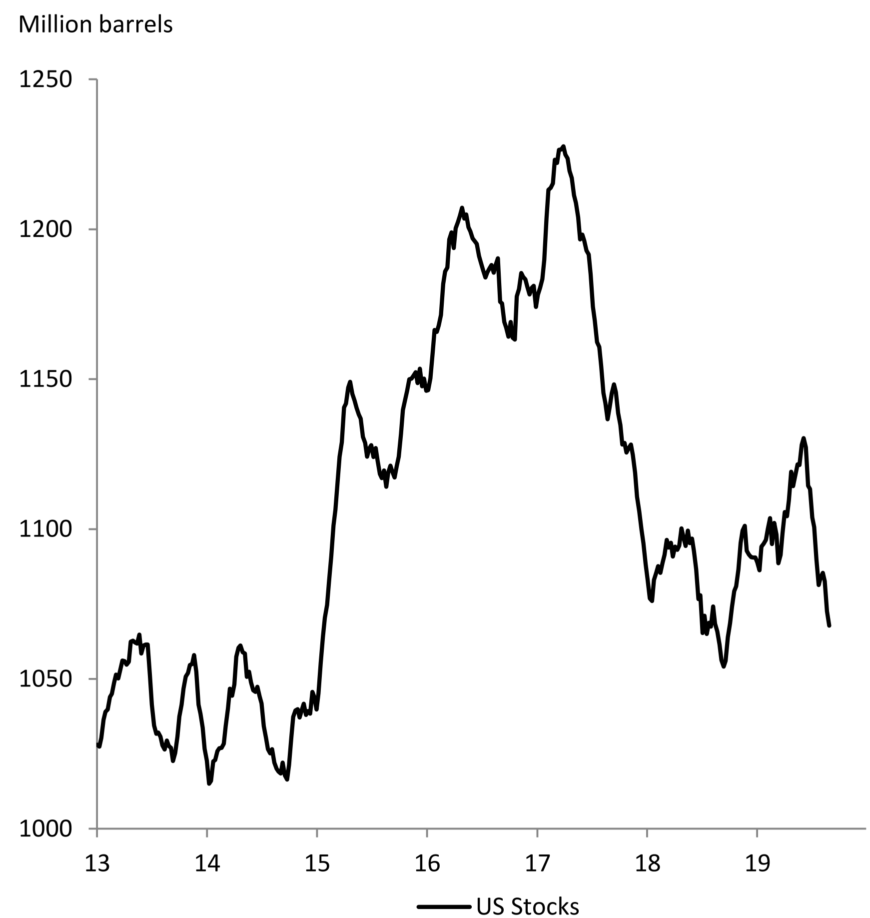
But we have growing concerns over the health of the sector

Petroleum production is surging; Permian may hit supply constraints but not yet



Source: UBS, EIA

Inventories of oil are falling again



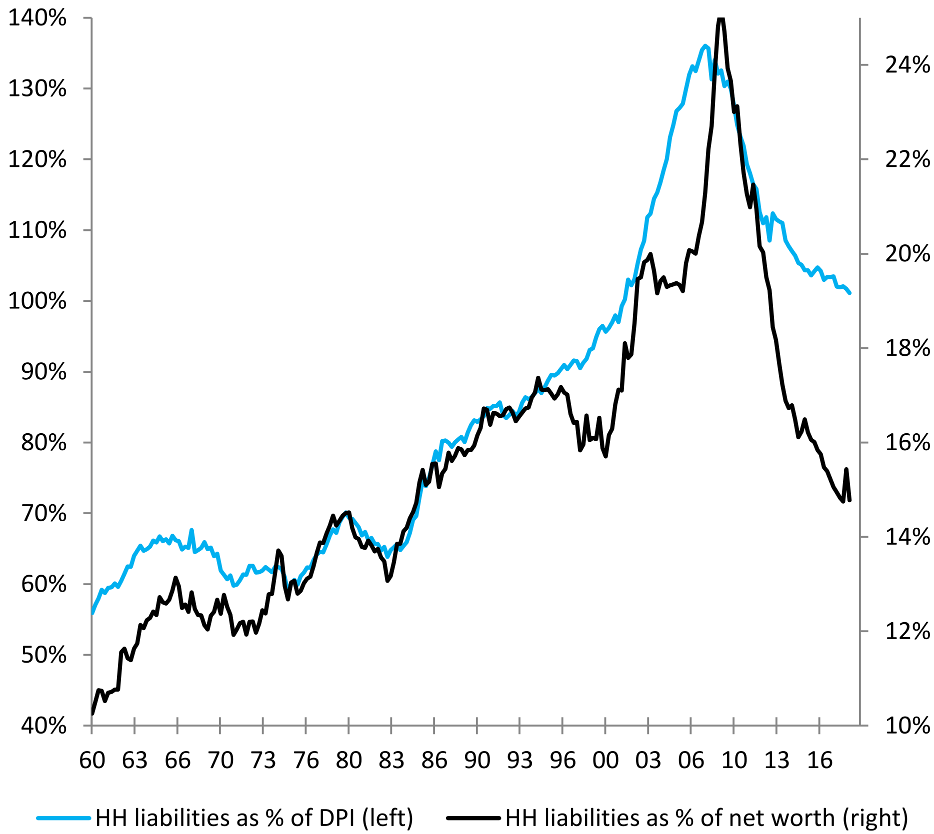
Source: UBS, EIA

UBS

Consumer balance sheets look broadly healthy

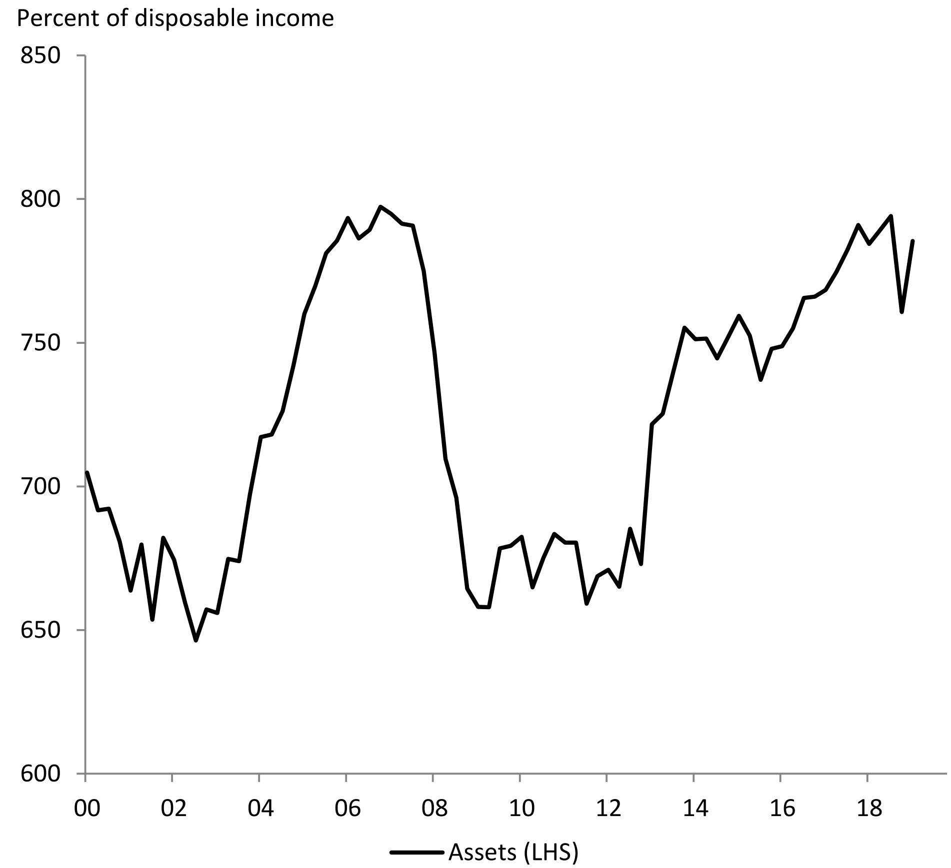
Households appear in good shape to weather a temporary growth slowdown

HH liabilities are falling as a percentage of income and net worth



Source: Federal Reserve, UBS

Assets had been rising healthily as a share of income but took a hit in Q4



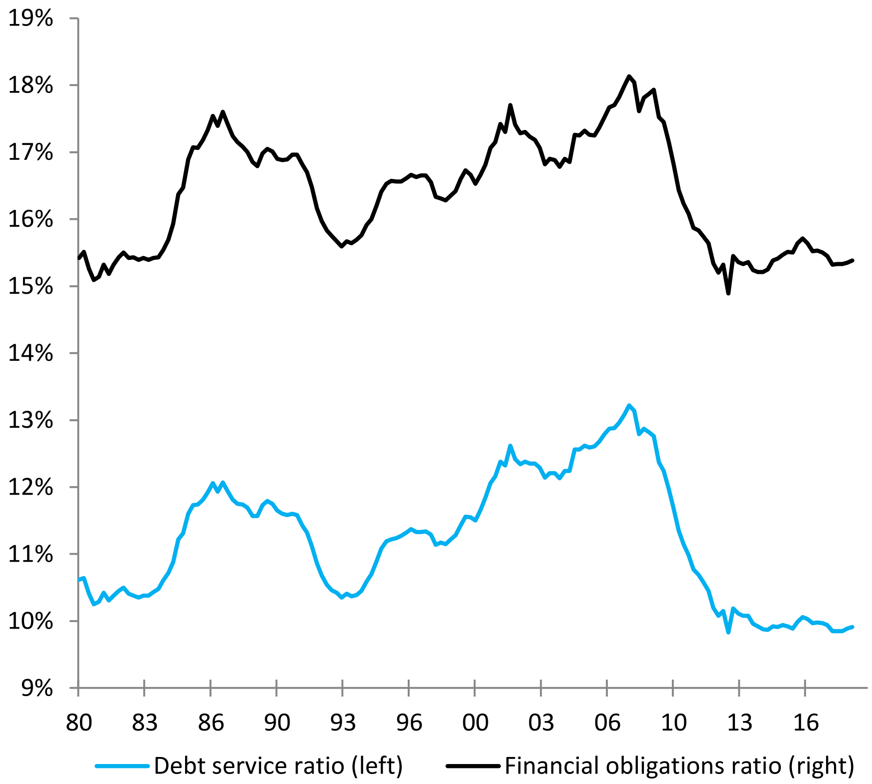
Source: Federal Reserve, BEA, UBS

UBS

Consumer balance sheets look broadly healthy

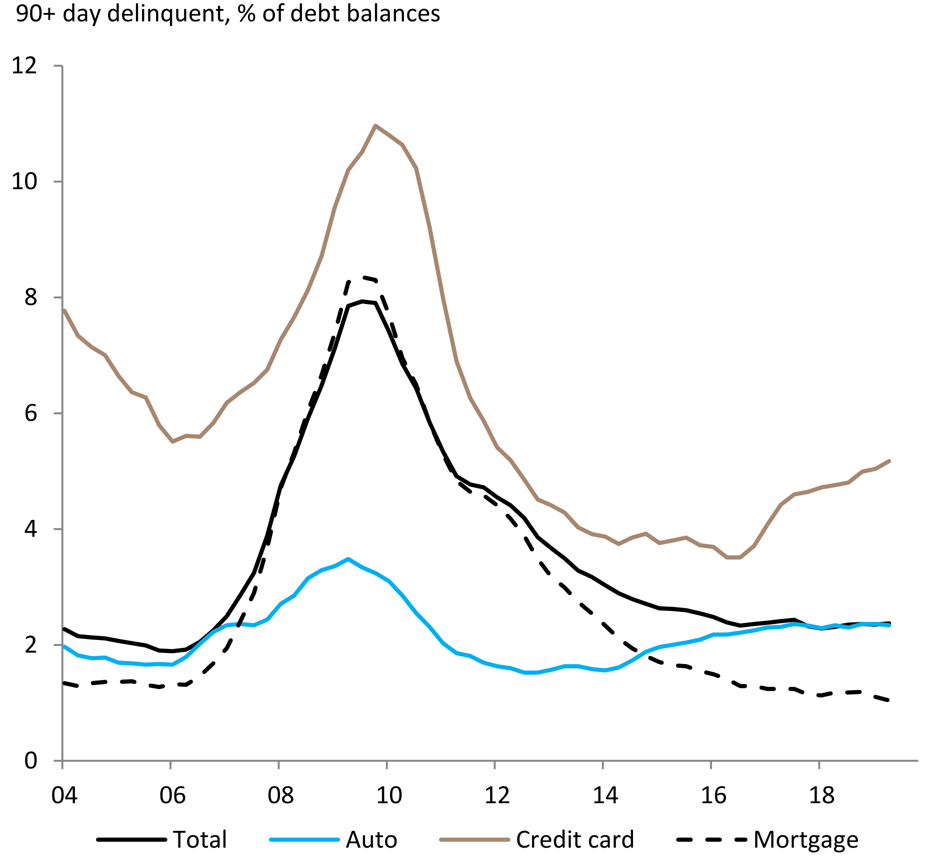
Households appear in good shape to weather a temporary growth slowdown

Debt service levels remain low despite interest rate increases



Source: Federal Reserve, UBS

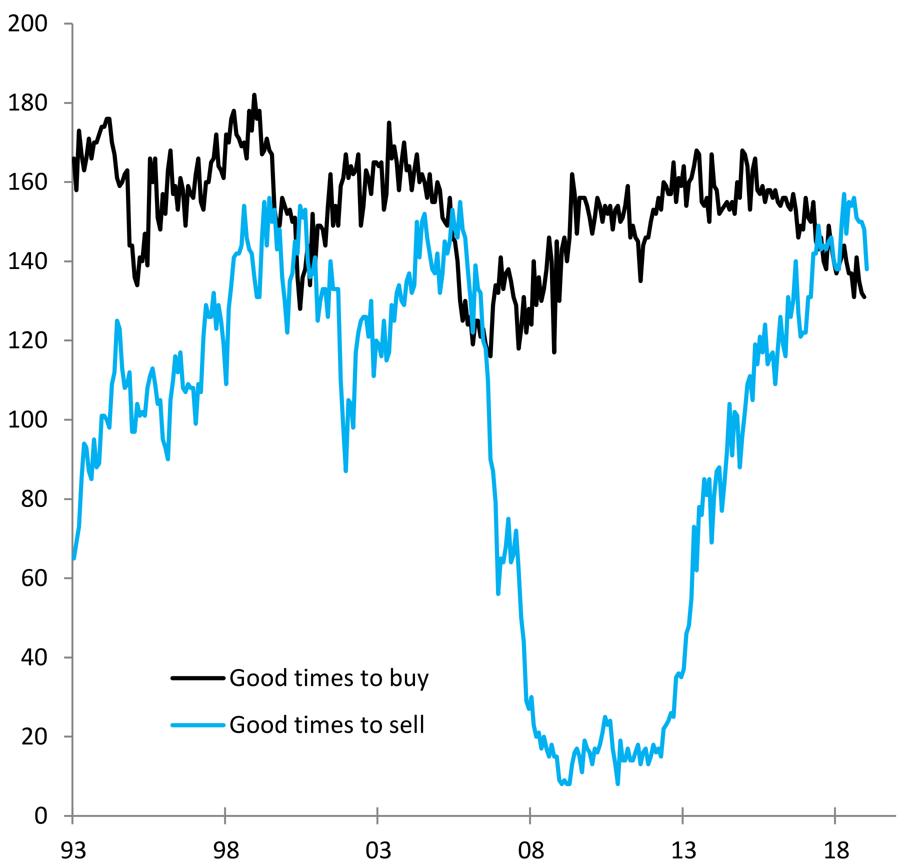
Delinquency rates on cards and auto moved higher



Source: FRBNY, UBS

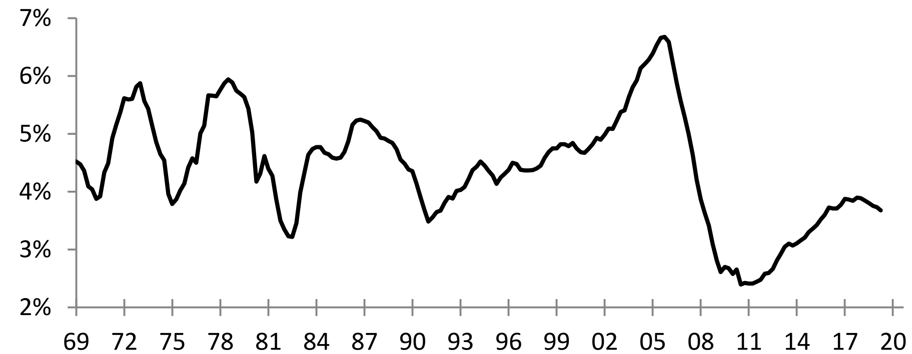
Housing remains weak

Most households think it is a better time to sell than buy, which has preceded the past two recessions



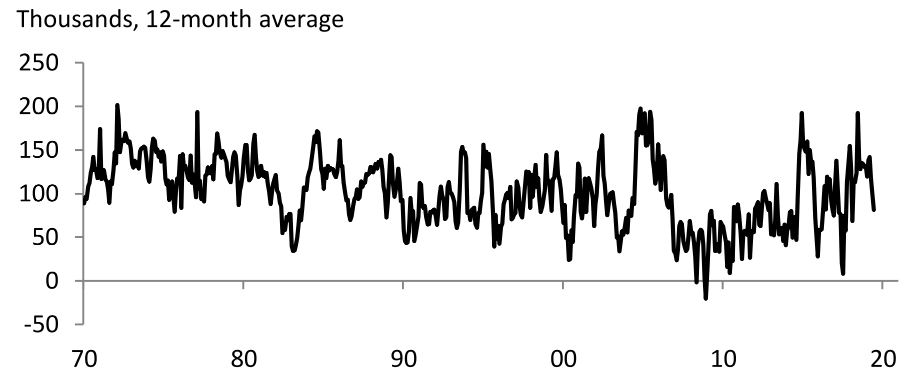
Source: NAR, Census, UBS

But housing a much smaller share of GDP



Source: BEA, UBS

…and household formation is rising

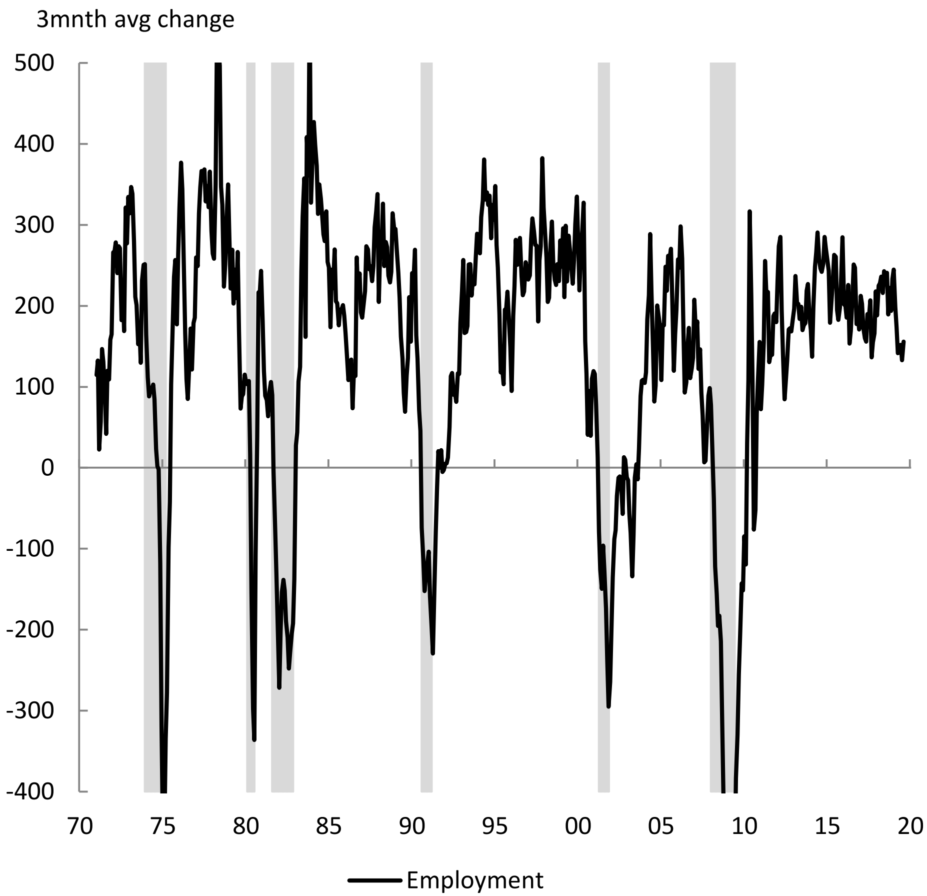


Source: Census, UBS

UBS

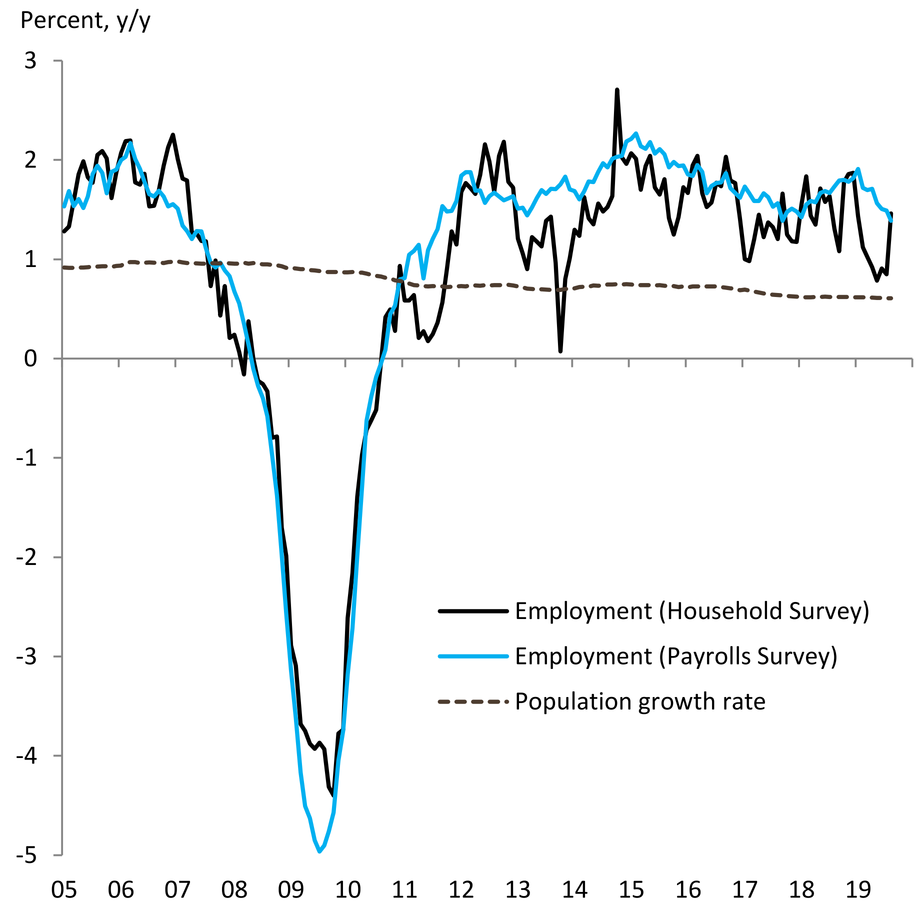
Employment growth is a key indicator for the US

Employment growth tends to remain steady until just before US recessions; no soft landings



Source: UBS, BLS

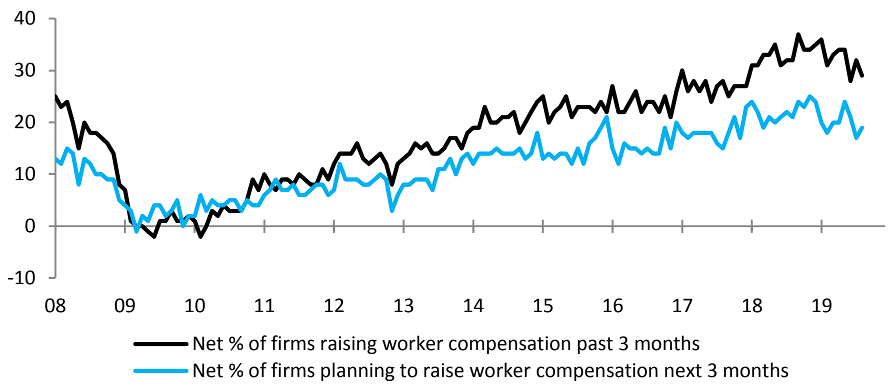
Employment growth is slowing



Source: UBS, BLS

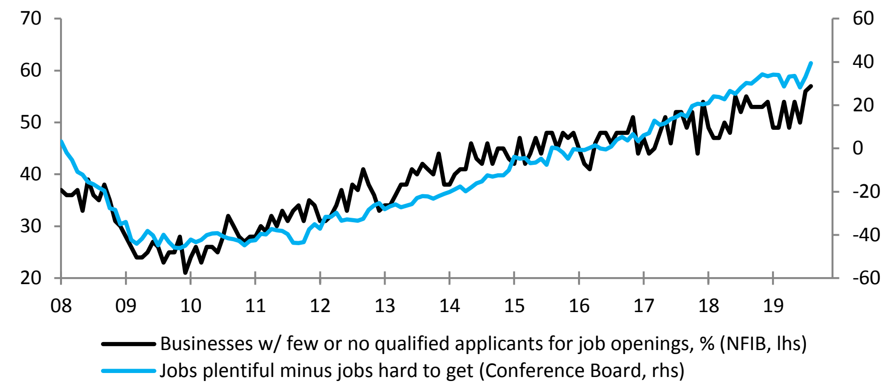
Survey measures continue to be indicative of increasing wage growth

NFIB wage growth



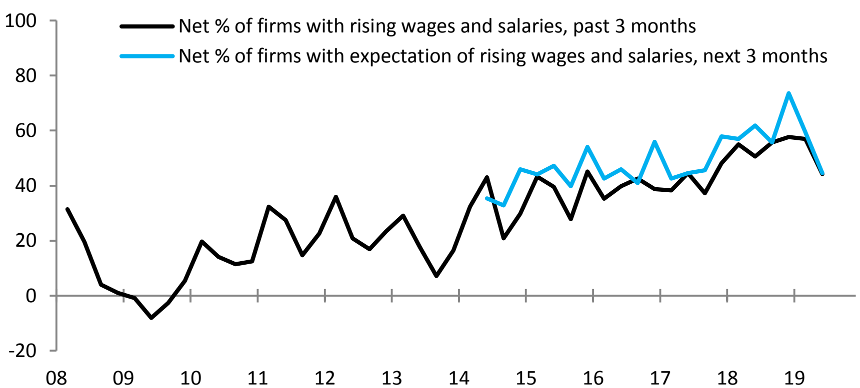
Source: NFIB, UBS

NFIB and Conference Board tightness



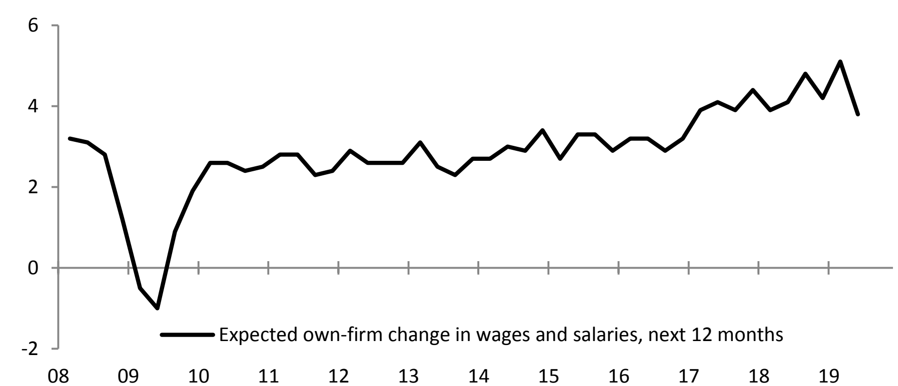
Source: NFIB, Conference Board, UBS

NABE wage growth



Source: UBS, NABE

Duke/CFO Magazine Outlook

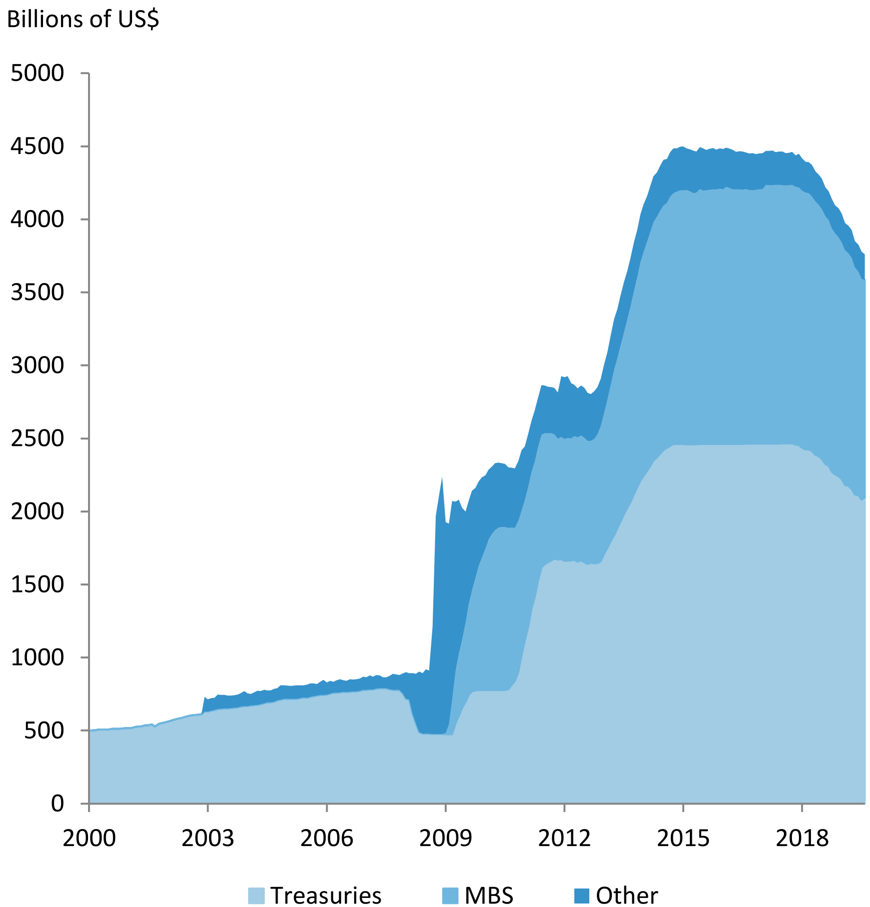


Source: UBS, Duke/CFO Magazine

The Fed's balance sheet has changed dramatically since the crisis

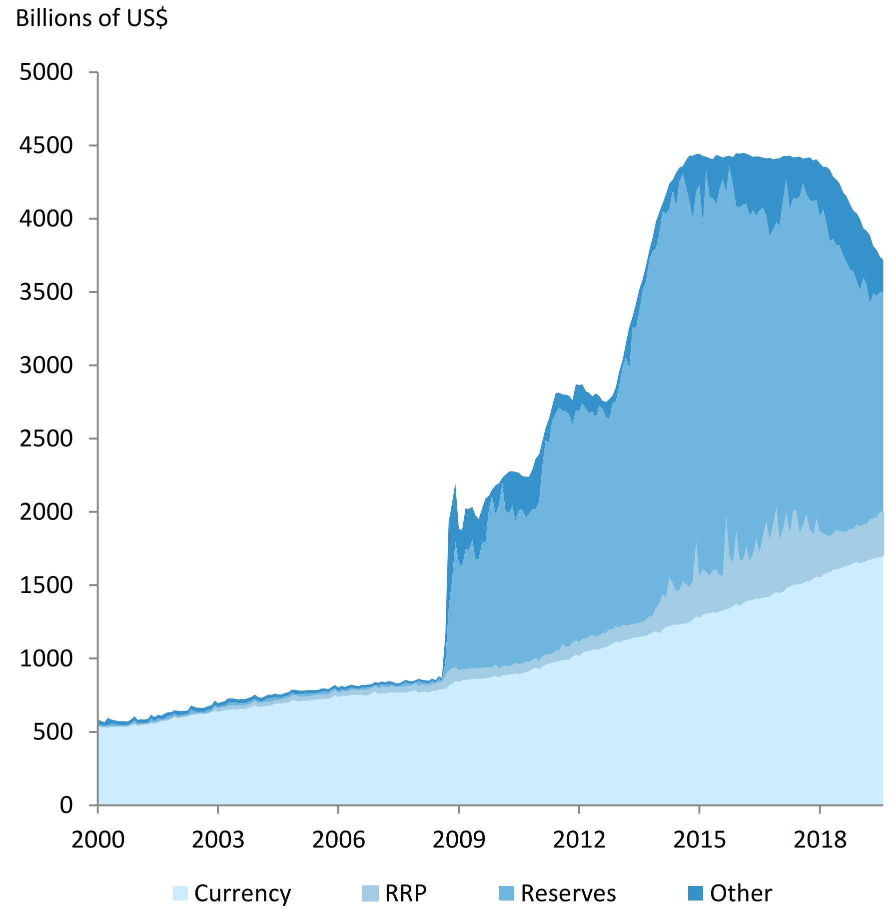
It used to be liability driven; post-crisis, it's been asset driven

Assets



Source: UBS, Federal Reserve

Liabilities



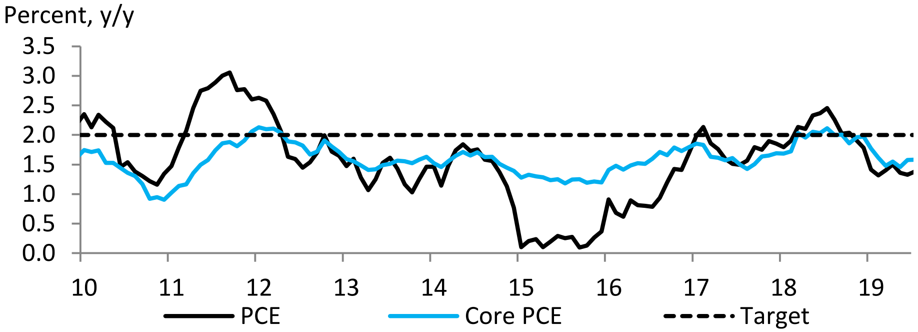
Source: UBS, Federal Reserve

UBS

The discussion of monetary frameworks will take time

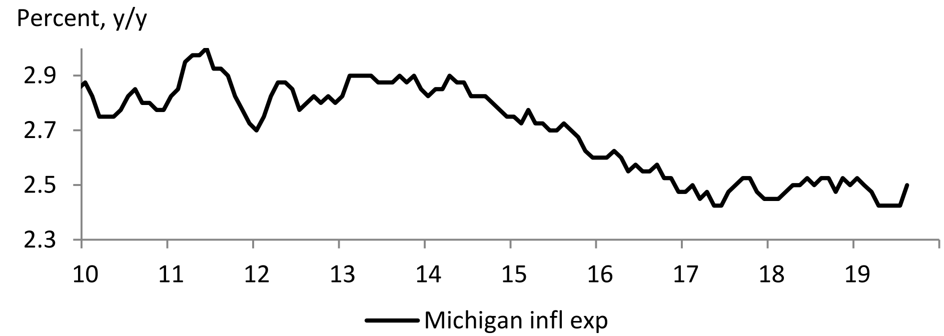
Inflation averaging is popular, but the devil is in the details

Core and headline inflation have persistently undershot the Fed's target, despite the decline in the unemployment rate



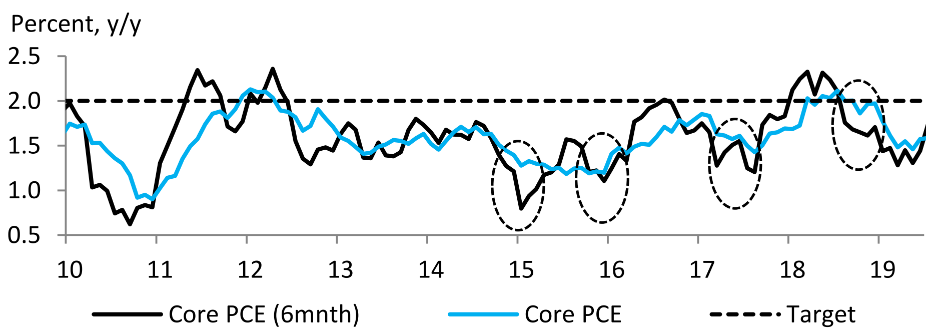
Source: BEA, UBS

The FOMC is worried that persistent shortfalls of inflation are lowering inflation expectations



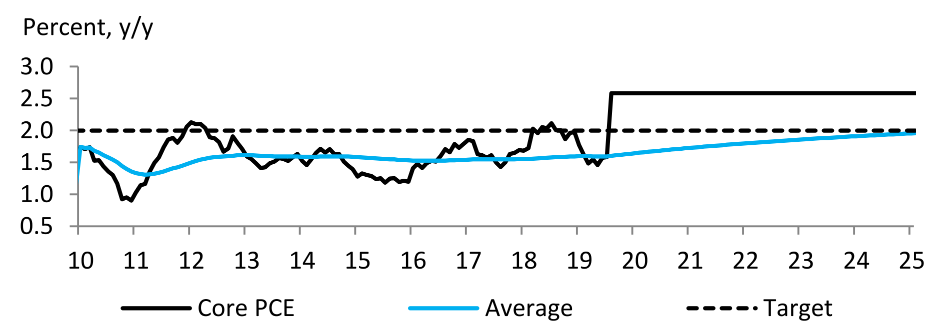
Source: University of Michigan, UBS

The seasonality in sentiment seems to be related to seasonality in core PCE inflation; PCE tends to underperform late in the year and outperform early



Source: BEA, UBS

Correcting 10 years of persistent inflation undershoots requires substantial overshoots of the target, even assuming an instant shift in inflation

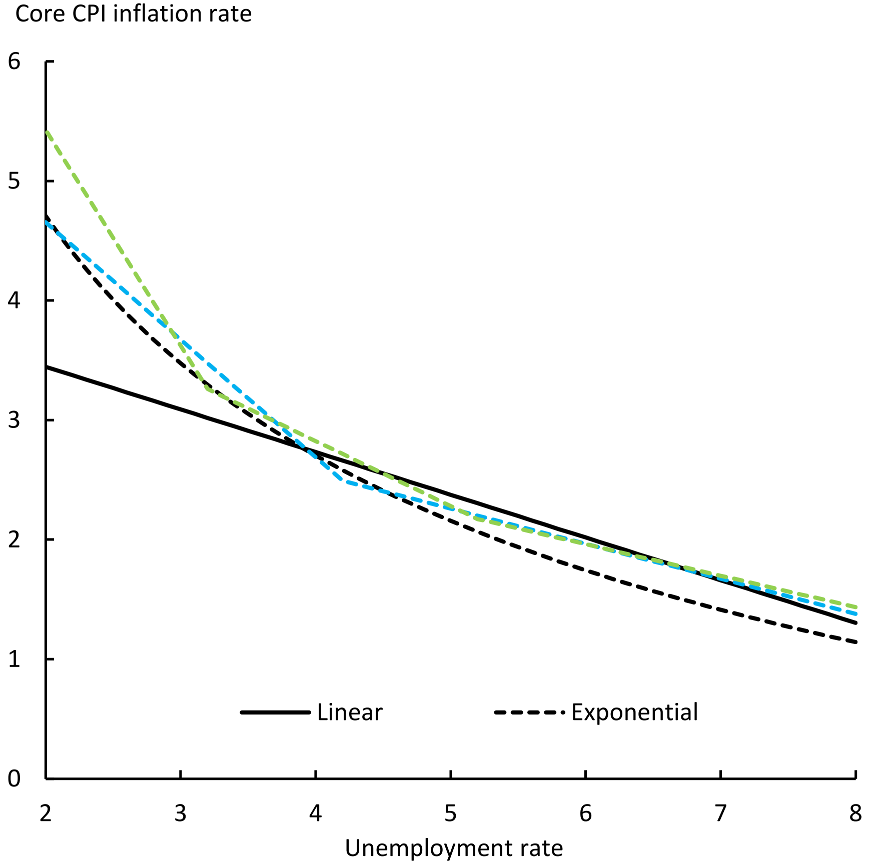


Source: BEA, UBS

UBS

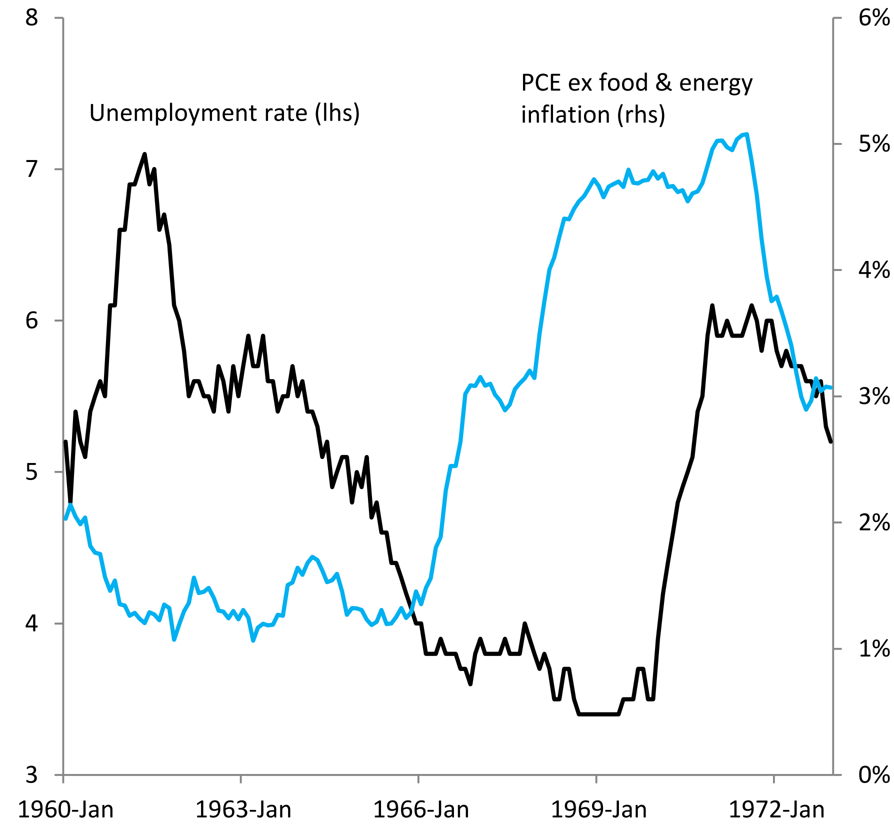
A sharp, nonlinear pickup in inflation is an upside risk if the unemployment rate continues falling

Metropolitan data over the last 20 years shows only moderate nonlinearity, and we have brought that into our baseline



Source: UBS based on Babb and Detmeister (2017)

The 1960s experience suggests a much larger upside risk



Source: UBS, BLS

UBS

Treasury issuance

Coupon issuance should remain unchanged this year

Coupon issuance should remain unchanged in 2019

Given current auction sizes, our deficit forecast and the fact that the Fed is fully reinvesting maturing securities, the Treasury should be fairly well funded

With bills outstanding quite low as a share of issuance, an upside surprise to funding needs would bring little need to adjust coupons

We expect auction sizes to remain unchanged in 2020 too

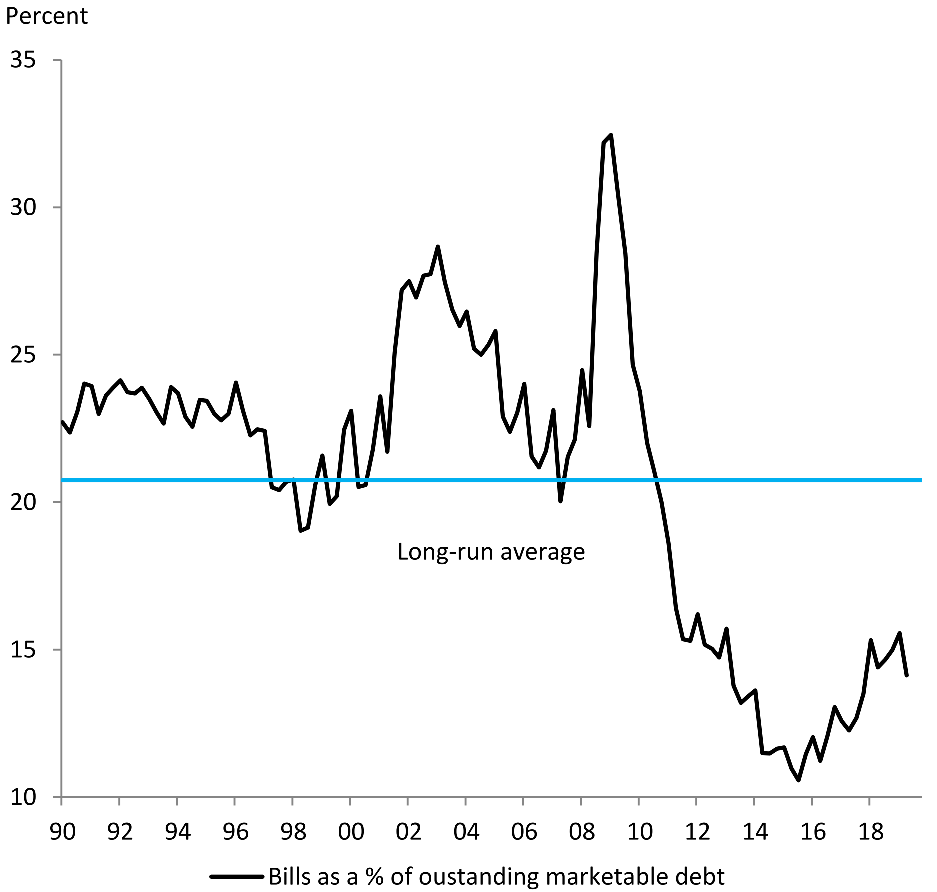
		2y	3y	5y	7y	10y	30y	FRNs (2y)	5y TIPS	10y TIPS	30y TIPS	Total to market	Total maturing to market	Net market takedown	Total maturing	Fed balance sheet rolloff	SOMA add-ons	(1) Fed purchases in secondary markets	(1.a) Purchases due to MBS reinvestments	(1.b) Purchases due to currency growth
*	Jan-19	40	38	41	32	24	16	20	0	13	0	224	161	63	177	16	0	0	0	0
*	Feb-19	40	38	41	32	27	19	18	0	0	8	223	136	87	192	30	26	0	0	0
*	Mar-19	40	38	41	32	24	16	18	0	11	0	220	2	218	24	22	0	0	0	0
*	Apr-19	40	38	41	32	24	16	20	17	0	0	228	279	-51	311	30	2	0	0	0
*	May-19	40	38	41	32	27	19	18	0	11	0	226	128	98	187	15	44	0	0	0
*	Jun-19	40	38	41	32	24	16	18	15	0	0	224	3	221	24	21	0	0	0	0
*	Jul-19	40	38	41	32	24	16	20	0	14	0	225	251	-26	272	8	13	0	0	0
	Aug-19	40	38	41	32	27	19	18	0	0	6	221	57	164	112	0	55	8	8	0
	Sep-19	40	38	41	32	24	16	18	0	12	0	221	180	41	208	0	28	8	8	0
	Oct-19	40	38	41	32	24	16	20	17	0	0	228	140	88	156	0	16	8	8	0
	Nov-19	40	38	41	32	27	19	18	0	12	0	227	61	166	100	0	40	8	8	0
	Dec-19	40	38	41	32	24	16	18	15	0	0	224	190	34	209	0	19	8	8	0
	Total	**480**	**456**	**492**	**384**	**300**	**204**	**224**	**64**	**73**	**14**	**2,691**	**1,587**	**1,104**	**1,972**	**143**	**241**	**39**	**39**	**0**

Note: *Actual.
Source: US Treasury, UBS

Bills as a % of marketable debt to stay low before moving higher

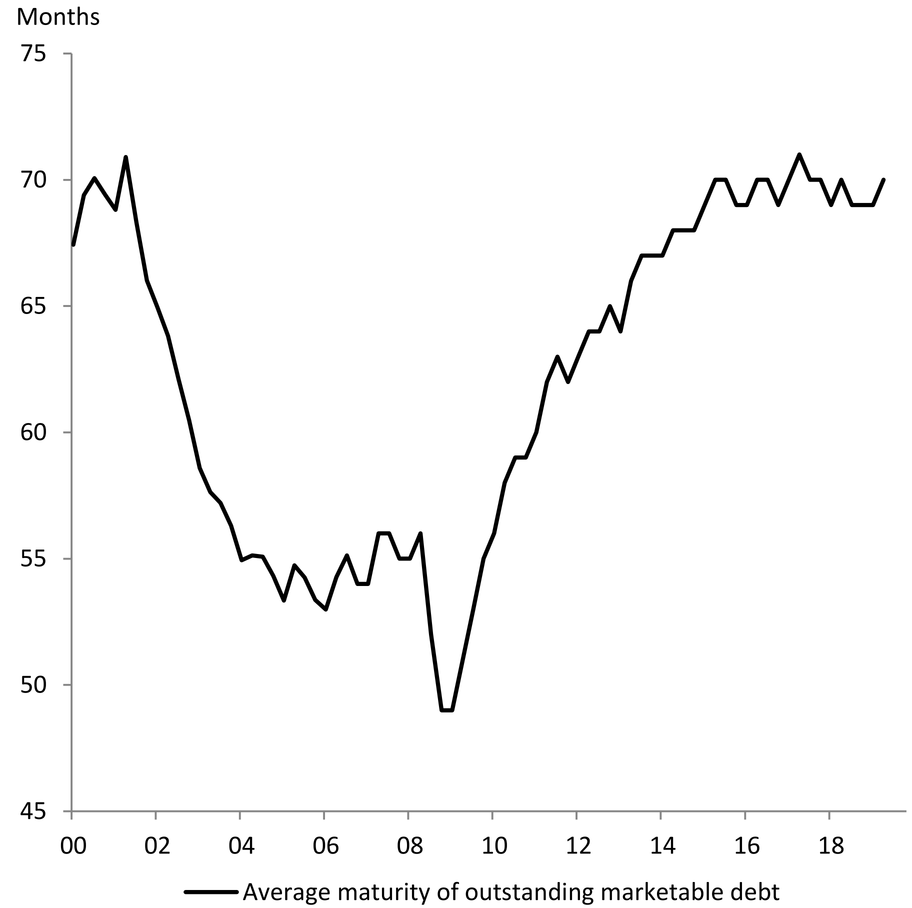
With earlier end to balance sheet unwind, Treasury will see need for modestly smaller bills auction sizes

Bills as a % of marketable debt is below the historical average of about 20%



Source: UBS, BLS

The average maturity outstanding marketable debt has been flat for some time



Source: UBS, BLS

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