US Economics Analyst

Good News and Bad News for the Manufacturing Supply Rebound (Hill)

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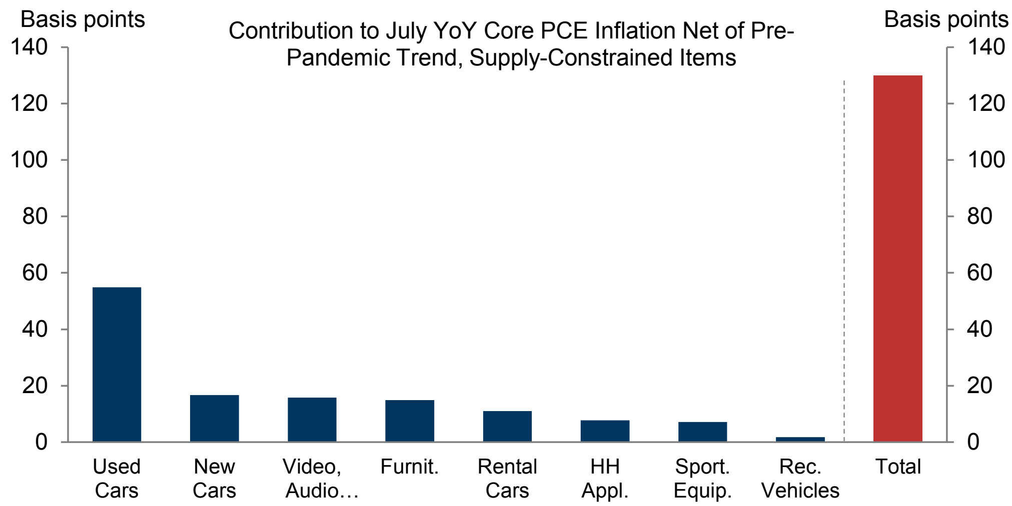
- Supply-constrained goods account for 80% percent of the 2021 inflation overshoot, owing largely to historic supply chain disruptions and other constraints on production. Exploring company-reported bottlenecks in the quarterly supplement of the industrial production report, we find that shortages of labor and intermediate goods inputs are the key constraint on the manufacturing sector, with the share of factories limiting production due to input scarcity nearly tripling in Q2 relative to pre-crisis.
- One key input in short supply is microchips. The shortage appears to be worsening again, with plant shutdowns in Southeast Asia leading US automakers to slash September production. Looking ahead, the sharp rise in vaccination rates and the tentative decline in lockdowns in the region are both encouraging, but we are nonetheless pushing back our assumption for improving chip supply from this fall to 1H22.
- Beyond that, the news is more encouraging. Only a quarter of manufacturing supply constraints reflect the combination of excess demand and underinvestment that is traditionally associated with persistent economic overheating. And even in segments with rapidly rising prices, we find that the equipment and structures currently in place could accommodate increases in production once labor and input supply increases.
- We also find that labor, shipping, and covid together account for roughly half of reported production constraints in US manufacturing, and we expect all three supply headwinds to ease in coming quarters. Demand for labor in the manufacturing and transportation sectors is only modestly above pre-crisis levels (+1% and +3%, respectively), and there are enough unemployed high school graduates and prime-age-males looking for full-time jobs to fill the majority of the 700k factory-worker shortages.
- Taken together, we estimate that normalizing labor supply and sequential improvement in microchip availability will boost manufacturing output by $100bn and contribute +0.5pp to GDP growth in 2022 (Q4/Q4). That being said, the uncertain timing of both the auto production rebound and the labor supply normalization raises the risk that economy-wide restocking could be minimal or even negative during the fall and winter.
- From an inflation perspective, continued drawdowns in auto inventories this fall

coupled with shortages of electronics, furniture, and other consumer products argue for upward pressure on core goods prices during the holiday season. Large price declines for semiconductor-dependent categories also no longer appear likely in the short-run.

Good News and Bad News for the Manufacturing Supply Rebound

Supply-constrained goods categories such as autos and consumer electronics are the main driver of high core inflation currently. As shown in Exhibit 1, eight such categories contributed +1.3pp to year-on-year core inflation in July, or 80% percent of the current overshoot relative to the 2% target (core PCE +3.6% yoy in July).

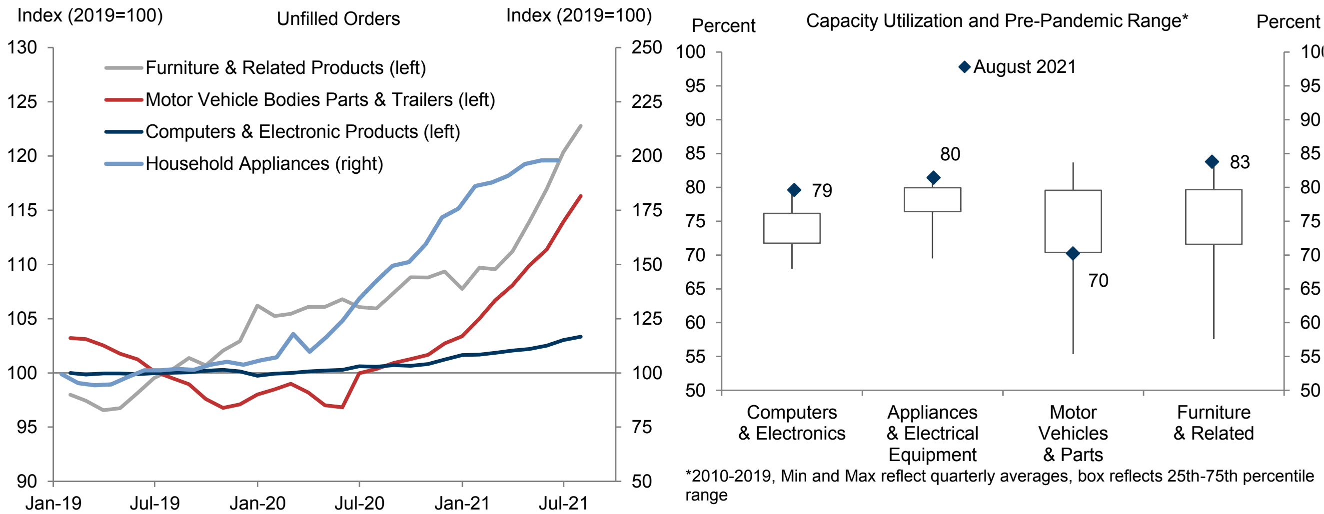
Exhibit 1: Supply-Constrained Goods Categories Are the Main Driver of High Inflation This Year



Source: Bureau of Economic Analysis, Goldman Sachs Global Investment Research

Demand is elevated in several consumer goods categories—including autos, furniture, consumer electronics, and appliances—because of pandemic-driven preference shifts and because of large transfer payments to households that ended only recently (see left panel of Exhibit 2). However, capacity utilization data indicates that most factories have plenty of physical capacity available, with the manufacturing sector overall operating at 77% capacity in July (compared to 76% in 2019 and 78% in 2018). This is a crucial difference relative to the chronic overheating of the late 1960s and the 1972-73 business cycle, when manufacturing utilization rates rose over 10pp and averaged 85%.

Exhibit 2: Elevated Demand Is Clearly a Factor, but Factory Utilization Has Not Risen Above the Pre-Pandemic Range



*2010-2019, Min and Max reflect quarterly averages, box reflects 25th-75th percentile range

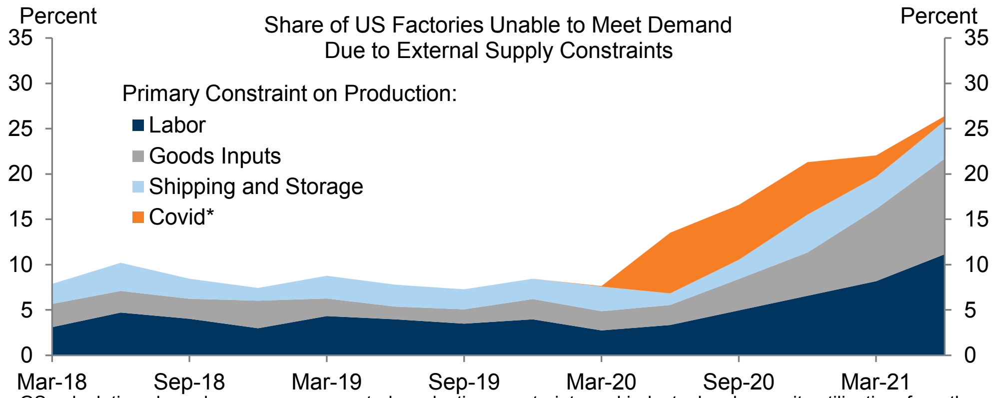
Source: Goldman Sachs Global Investment Research

Nor do utilization rates in these four industries signal a capacity problem. The auto industry is running at just 70% capacity, and the furniture, consumer electronics, and appliances industries are running at around 80% capacity—near but not above the peak utilization rates of the last business cycle (see right panel of Exhibit 2). The last business cycle did not exhibit strong inflationary pressures, and with inflation rates in all four categories already exceeding their prior-decade peaks—and by 5pp on average—insufficient equipment and structures investment is a poor candidate explanation. Relatedly, we find that across the entire manufacturing sector, only 10% of US factories are operating at or above physical capacity[1]—2pp *below* the pre-pandemic average (shown in Appendix).

Instead, the data indicate that factories are unable to fully utilize their plant and equipment stock because of labor and intermediate input shortages. In Exhibit 3, we explore data on company-reported production constraints from the quarterly supplement of the industrial production report. Plants operating below capacity are asked to report the primary constraint on production, for example "insufficient labor," "insufficient materials," or "environmental factors/work stoppages" such as a covid lockdown. As shown in Exhibit 3, these constraints have become increasingly binding over the last year and a half, with a quarter of the manufacturing sector operating below capacity in Q2 due to labor and input shortages.

[1] Some plants can temporarily operate above 100% capacity, for example by paying unsustainably high prices for overtime labor.

Exhibit 3: A Quarter of US Factories Are Operating Below Capacity Due to Labor and Input Shortages; Though Covid Is Now Much Less of a Constraint



GS calculations based on company-reported production constraints and industry level capacity utilization, from the industrial production report and its quarterly supplement, respectively. Weighted by 2019 IP Relative Importance
*Reflects the following responses less their 2019 average: [Production constrained by] "Work stoppage", "Environmental restrictions", or "Other"

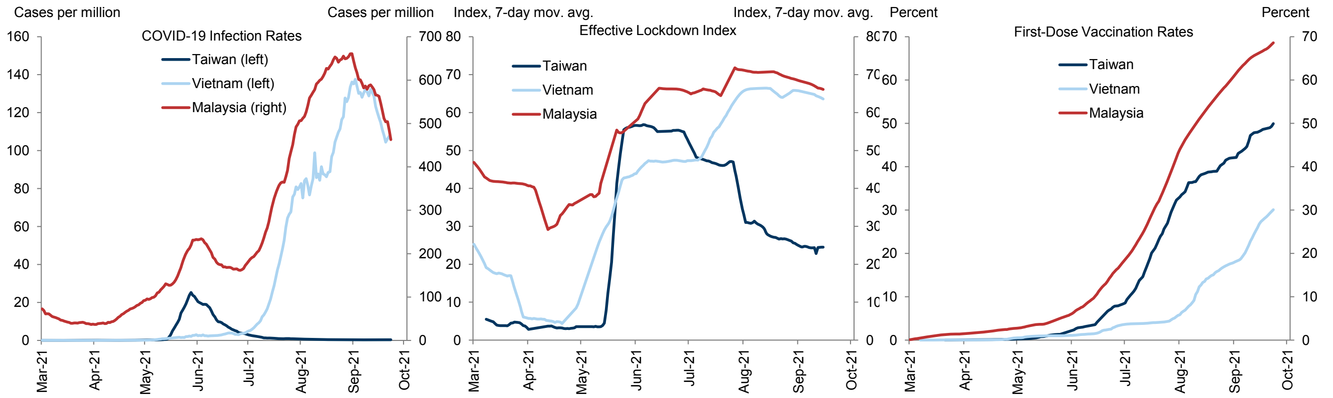
Source: Goldman Sachs Global Investment Research

The nature of the production constraints facing firms is important because some supply headwinds are likely to persist much longer than others. Physical capacity generally requires years to build and ramp up, and microchip producers face particularly long lead times. In contrast, covid factory disruptions are declining in the US, and the supply of labor could normalize with extended unemployment benefits now expired. This would in turn improve supply of other intermediate inputs such as lumber, freight, and metal products.

How the Delta Wave Worsened the Global Microchip Shortage

The string of bad luck for microchip-starved industries has continued, with plant shutdowns in Southeast Asia and power outages in eastern Germany. As shown in Exhibit 4, covid infection rates rose sharply in the late summer in Malaysia and Vietnam, echoing the May/June rise in Taiwan. More stringent covid control policies in those economies caused a significant increase in our Effective Lockdown Index (ELI), with closures of factories producing semiconductors, electronics, and tennis shoes. Because the region is a critical supplier of microchips, US automakers have already added additional plant downtime in September.

Exhibit 4: Factory Shutdowns in Southeast Asia Have Further Delayed the Rebound in Chip Supply

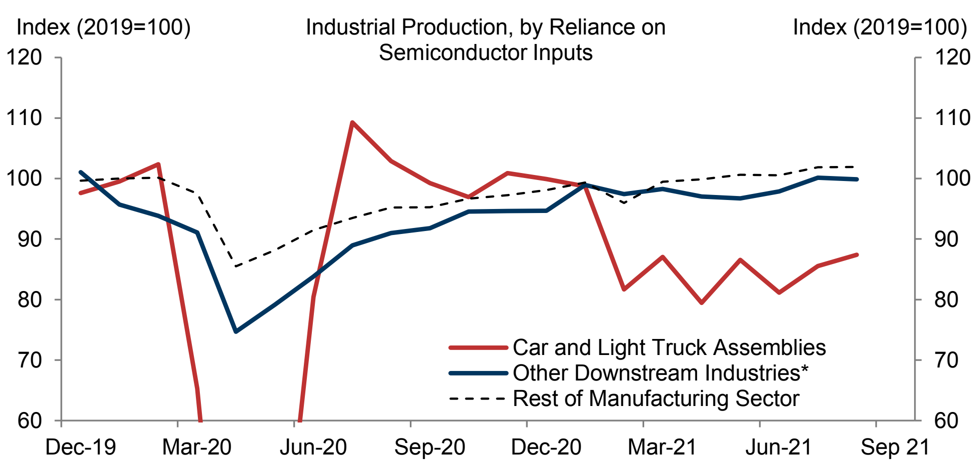


Source: Our World in Data, Goldman Sachs Global Investment Research

Looking ahead, we are encouraged by the sharp rise in vaccination rates in those countries and the likely peaks in the corresponding ELIs. But in the near-term, these developments will likely exacerbate supply-demand imbalances.

As shown in Exhibit 5, industrial production in the US auto sector had already underperformed since the chip shortage intensified in early 2021, and our auto analysts have lowered their production forecasts for next quarter and next year.

Exhibit 5: Chip Shortage Particularly Problematic for the Auto Sector

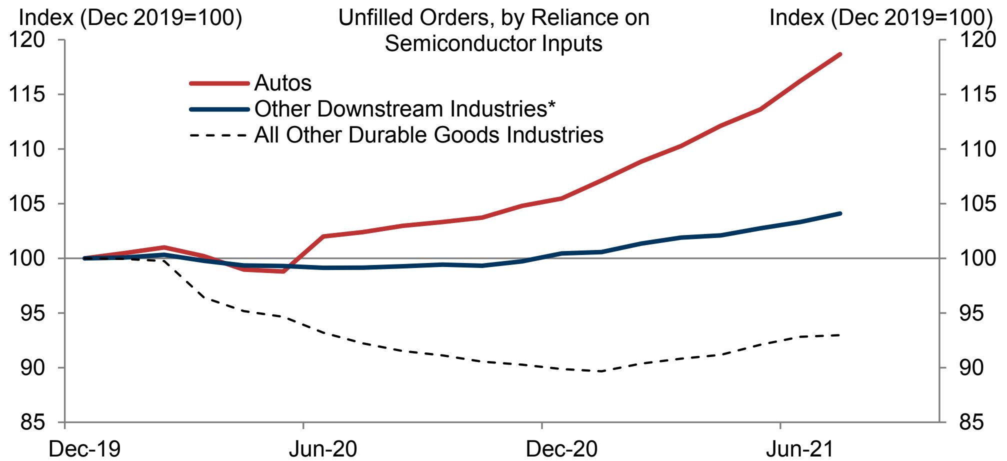


*Semiconductors and related products account for at least 5% of intermediate inputs obtained from other

Source: Goldman Sachs Global Investment Research

While production of other industries dependent on semiconductors has underperformed more marginally (see blue line of the same exhibit), factory backlogs are now rising in those industries as well (see Exhibit 6). These subindustries represent 12% of the US manufacturing sector (GDP basis, vs. autos at 5%), and they include household appliances (unfilled orders +91% since 2019), HVAC/outdoor heating equipment (+37%), smartphones and other non-defense communication equipment (+10%).

Exhibit 6: ...But Backlogs Are Rising for Other Exposed Industries Too and Suggest Output Is Constrained in Other Downstream Industries Too

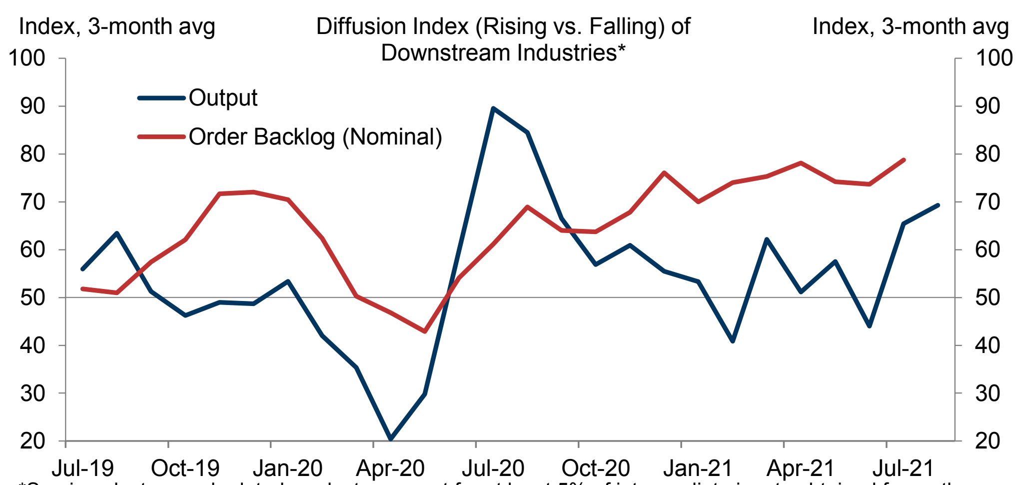


*Semiconductors and related products account for at least 5% of intermediate inputs obtained from other industries. Data weighted by 2019 GDP by industry.

Source: Goldman Sachs Global Investment Research

To gauge the more recent trend in the supply-demand imbalance, we construct a GDP-weighted diffusion index based on month-over-month growth rates of industrial production and nominal order backlogs. As shown in Exhibit 7, backlogs rose at an accelerating pace in July despite broad-based increases in production.

Exhibit 7: Output of Microchip-Reliant Industries Is Rebounding, But Not Enough to Improve Demand Imbalances



*Semiconductors and related products account for at least 5% of intermediate inputs obtained from other

Source: Goldman Sachs Global Investment Research

Given this, and given the Southeast Asian setback, we expect further increases in order backlogs as we enter the holiday season, with associated upward price pressures on affected categories. We are also pushing back our assumption of improving chip availability from this fall to 2022H1[2]. Our semiconductor analysts note that the industry

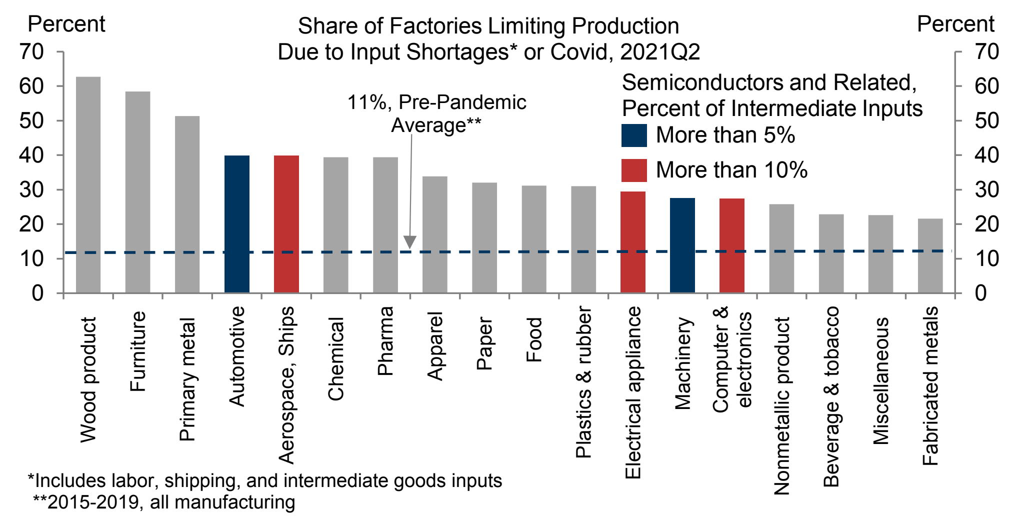
2 September and Q4 supply has also been impacted by 'hoarding' on the part of customers in an uncertain environment.

continues to aggressively add capacity, with new production lines coming online that should boost output and chip availability by early 2022.

Shortages of Labor and Other Inputs

While the idiosyncrasies of the semiconductor shortage have garnered considerable attention, supply chain constraints have also become increasingly common in the broader manufacturing sector: 32% of non-microchip-reliant factories have reduced production due to input unavailability or covid disruptions/work stoppages—nearly three times the pre-pandemic average. According to the August ISM reports, commodities in short supply include a broad range of inputs such as paint, aluminum products, chicken wings, foam, ocean freight, resins, and steel (in addition to labor and microchips).

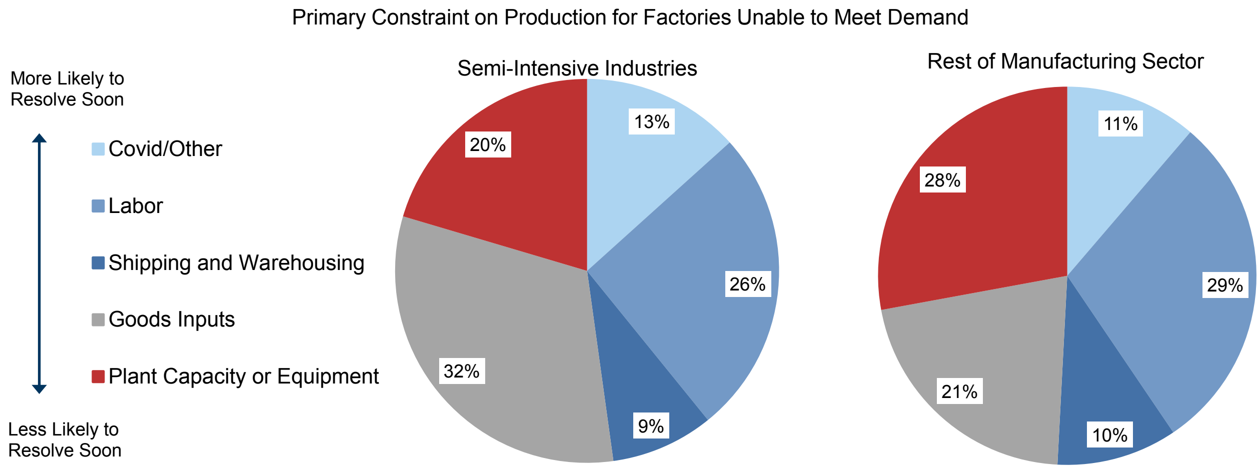
Exhibit 8: Chip Shortage an Important Factor for Transportation and Electronics Industries, But Other Production Constraints Are Widespread Too



Source: Goldman Sachs Global Investment Research

In Exhibit 9, we return to our original question about the duration of manufacturing supply constraints. Aggregating responses on a GDP-weighted basis, we find that around a quarter of manufacturing supply constraints reflect a lack of factory capacity or equipment, which due to long lead times is unlikely to abate in coming quarters. But beyond that, the data are generally encouraging. While production in a third of auto plants and other chip-reliant factories is constrained by the worsening microchip shortage, we see scope for meaningful easing for nearly half of the factories in these industries, whose constraints instead center around labor, covid, and shipping. And for the rest of the manufacturing sector, roughly two-thirds of today’s production constraints could conceivably ease in coming quarters, specifically those involving labor, covid, shipping, and non-microchip intermediate inputs.

Exhibit 9: Less than Half of the Supply Constraints Reflect Factory Capacity or Chip Constraints, and Many of the Others Could Ease in Coming Quarters



Source: Goldman Sachs Global Investment Research

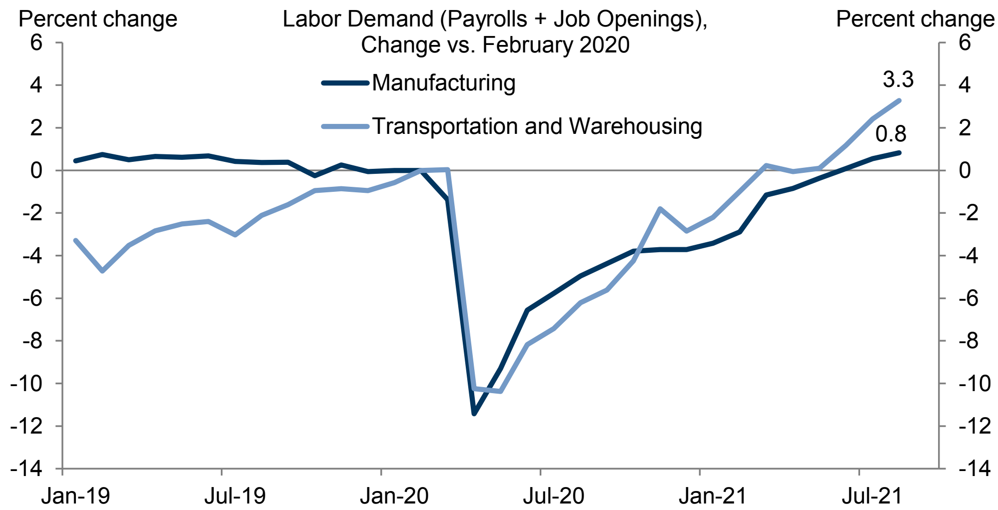
As shown earlier in Exhibit 3, covid factory disruptions have already fallen sharply, and we expect them to continue to decline with Delta case counts. And shortages of the remaining inputs—labor, shipping, and intermediate goods inputs—could ease substantially if the economy adds several million jobs by the spring and consumption shifts back toward services, as we forecast.

The Scope for Easing Supply Constraints

We conclude by estimating the possible GDP contribution of easing manufacturing supply constraints next year. As shown in Exhibit 10, demand for manufacturing labor—as estimated by the sum of manufacturing payrolls and manufacturing job openings—is only modestly above pre-crisis levels (+0.8%). This argues against persistent labor shortages for the remainder of the business cycle.

Labor demand is somewhat more stretched in the transportation industry (+3.3%), but it is not significantly above trend either. Could the economy accommodate this level of labor demand if the wind-down of emergency income-support programs and improving public health brings sidelined workers back to the job?

Exhibit 10: Demand for Manufacturing Labor Only Modestly Above Pre-Crisis Levels

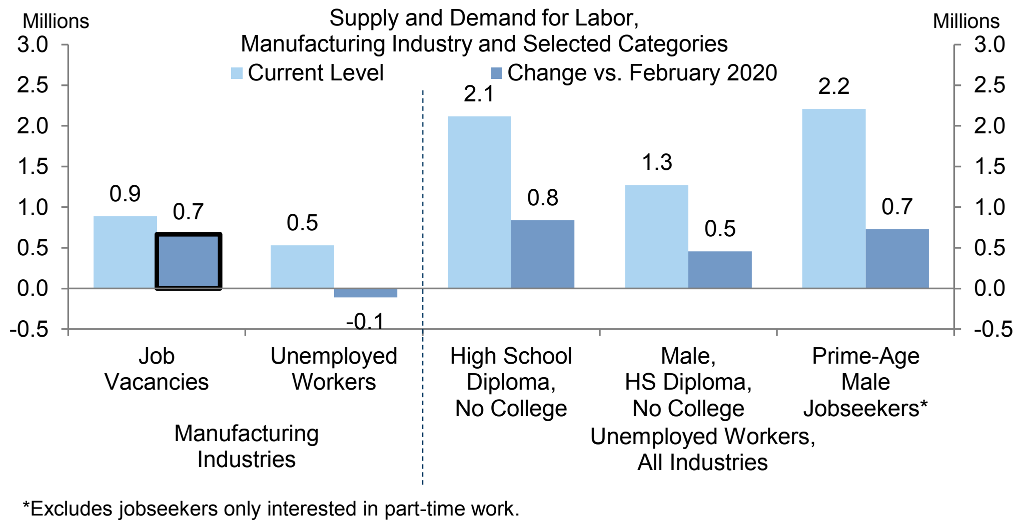


Source: Goldman Sachs Global Investment Research

Looking at the manufacturing sector specifically, JOLTS data indicate 900k job openings, up 700k since February 2020 (see Exhibit 11). As shown in the second column, the industry has already reabsorbed most pre-crisis factory workers who are currently willing to work (unemployed manufacturing laborers -100k vs. Feb 2020). This argues against the rapid increases in industry-level payrolls that we expect in the leisure and hospitality sector. But with the broader unemployment rate still somewhat elevated at 5.2% and with labor force participation also likely to rebound, we expect incremental labor supply to flow towards the relatively high-paying manufacturing sector ($24 average hourly wage for production workers). In terms of potential candidate pools, we note 2.1mn unemployed high school graduates (+800k vs. pre-crisis), over half of whom are male (1.3mn, +500k vs. pre-crisis). More broadly, there are 2.2 million prime-age males actively seeking full-time work (+700k vs. pre-crisis).[3]

[3] An additional 200k males want a job but have left the labor force specifically because of the pandemic.

Exhibit 11: Pre-Crisis Manufacturing Workforce Has Largely Returned, but Other Large Labor Pools Available to Fill Some of the 700k New Job Vacancies



Source: Goldman Sachs Global Investment Research

Taken together, we believe over half of manufacturing job vacancies are likely to be filled in coming quarters, given the end of enhanced benefits and our expectation that higher vaccination rates and declining infections will reduce covid disruptions and health concerns.

In Exhibit 12, we estimate the GDP effects of easing supply constraints in the US manufacturing sector next year. We assume labor supply begins to ease in the fourth quarter, with 3.5 million jobs created by the spring, including 0.5mn manufacturing jobs. This should in turn improve the supply of intermediate inputs currently constrained by labor shortages, such as metal products, ocean shipping, and trucking. We expect a slower recovery for idiosyncratic shortages, with no improvement in US microchip supply in Q4 and a more gradual normalization in lumber and wood product availability. Based on our analysts' updated auto production forecast, we expect an 18% rebound in an auto output that contributes $30bn to US GDP growth next year.

Exhibit 12: Normalizing Labor Supply and Sequential Improvement in Chip Production and Public Health to Boost Manufacturing Output by $100bn Next Year

	GDP Effects of Easing Manufacturing Supply Constraints in 2022	
Labor Supply		
	Manufacturing Vacancies Filled (k)	500
	Percent of Sector Employment	*4.0*
×	Labor Intensity of Production	0.67
=	Output Effect (%)	2.7
	GDP, Ex-Auto Manufacturing ($bn)	2,261
=	**GDP Impact ($bn)**	**61**
Automotive Chip Supply		
	Auto SAAR Production Rebound (%)	18
×	GDP, Motor Vehicle and Parts ($bn)	183
=	**GDP Impact ($bn)**	**32**
Intermediate Inputs and Public Health		
	Monthly Sales, Ex-Auto Business Sector ($bn)	1,480
×	Inventory-Sales Ratio, Feb '20	1.35
÷	Inventory-Sales Ratio, Jul '21	1.25
=	Implied Inventory Shortfall ($bn)	141
-	Assumed Labor Effect	61
=	Inventory Shortage Unrelated to Labor	80
×	Factories Constrained by Goods Inputs, Shipping, or Covid	46%
×	Easing of These Constraints Expected in 2022	50%
=	**GDP Impact ($bn)**	**18**
	Combined GDP Impact ($bn)	**111**
	Percent of GDP (%)	0.5

Source: Goldman Sachs Global Investment Research

We do not assume a meaningful increase in manufacturing capacity outside of semiconductors, but we do assume that roughly half of the remaining pandemic restrictions on US factories wind down. In the final table of the exhibit, we estimate a roughly $80 billion shortfall of inventory in the ex-auto business sector. Manufacturers report that just under half of production constraints reflect non-labor inputs or covid, implying scope for another $20bn of incremental output with our other assumptions.

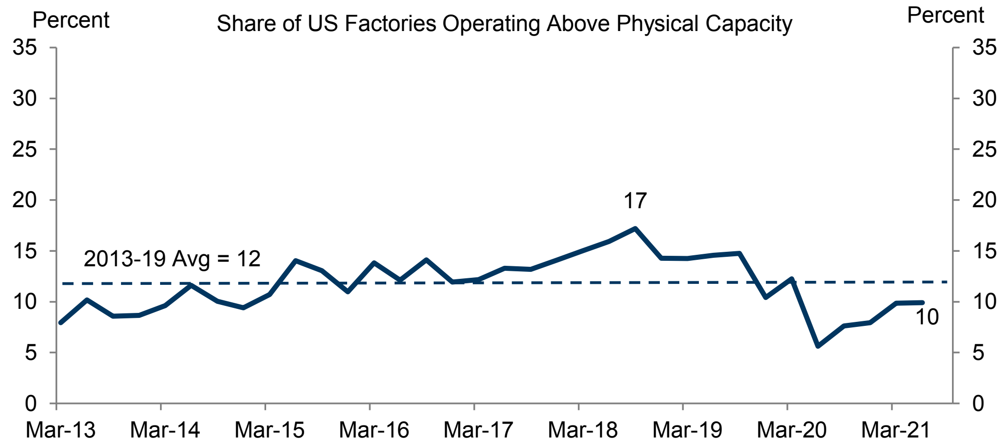
Taken together, we estimate that normalizing labor supply and sequential improvement in microchip availability will boost manufacturing output by $100bn and contribute +0.5pp to 2022 GDP growth (Q4/Q4). That being said, the uncertain timing of both the auto production rebound and the labor supply normalization raises the risk that economy-wide restocking could be minimal or even negative during the fall and winter.

From an inflation perspective, continued drawdowns in auto inventories this fall coupled with shortages of electronics, furniture, and other consumer products argue for upward pressure on core goods prices during the holiday season. And while we continue to expect chip availability to improve in the first half of 2022, large price declines for semiconductor-dependent categories are no longer likely in the short-run.

Spencer Hill

Appendix

Exhibit 13: Today's Manufacturing Bottlenecks Mostly Reflect Labor and Input Shortages—Not Insufficient Plant and Equipment Investment



Note: Assumes plant capacity utilization is normally distributed around industry average, with standard deviation

Source: Goldman Sachs Global Investment Research

The US Economic and Financial Outlook

THE US ECONOMIC AND FINANCIAL OUTLOOK
(% change on previous period, annualized, except where noted)

	2019	2020	2021	2022	2023	2024		2021				2022		
			(f)	(f)	(f)	(f)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
OUTPUT AND SPENDING														
Real GDP	**2.3**	**-3.4**	*5.8*	*4.5*	*2.0*	*2.0*	**6.3**	**6.6**	*4.5*	*5.0*	*5.0*	*4.5*	*3.5*	*1.5*
Real GDP (annual=Q4/Q4, quarterly=yoy)	**2.6**	**-2.3**	*5.6*	*3.6*	*1.7*	*2.1*	**0.5**	**12.2**	*5.5*	*5.6*	*5.3*	*4.7*	*4.5*	*3.6*
Consumer Expenditures	**2.2**	**-3.8**	*7.8*	*3.7*	*2.0*	*2.1*	**11.4**	**11.9**	*0.9*	*3.5*	*4.5*	*3.5*	*2.5*	*2.0*
Residential Fixed Investment	**-0.9**	**6.8**	*10.7*	*2.8*	*2.6*	*2.0*	**13.3**	**-11.5**	*0.9*	*6.0*	*4.0*	*4.0*	*3.0*	*3.0*
Business Fixed Investment	**4.3**	**-5.3**	*8.1*	*5.9*	*4.1*	*3.9*	**12.9**	**9.3**	*5.4*	*6.4*	*6.1*	*5.6*	*5.1*	*4.2*
Structures	**2.1**	**-12.5**	*-7.3*	*2.7*	*4.9*	*3.4*	**5.4**	**-5.4**	*0.5*	*2.0*	*2.0*	*4.0*	*8.0*	*6.0*
Equipment	**3.3**	**-8.3**	*14.1*	*6.4*	*3.0*	*2.8*	**14.1**	**11.6**	*3.4*	*7.0*	*8.0*	*7.0*	*4.0*	*2.5*
Intellectual Property Products	**7.2**	**2.8**	*10.5*	*7.0*	*5.0*	*5.2*	**15.6**	**14.6**	*10.0*	*8.0*	*6.0*	*5.0*	*5.0*	*5.0*
Federal Government	**3.8**	**5.0**	*0.9*	*-1.2*	*0.0*	*0.0*	**11.3**	**-5.2**	*-4.0*	*-2.0*	*0.0*	*0.0*	*0.0*	*0.0*
State & Local Government	**1.3**	**0.9**	*0.9*	*3.3*	*0.6*	*0.5*	**-0.1**	**0.3**	*5.2*	*5.0*	*5.0*	*2.0*	*0.5*	*0.5*
Net Exports ($bn, '12)	**-905**	**-943**	*-1,238*	*-1,274*	*-1,256*	*-1,230*	**-1226**	**-1247**	*-1233*	*-1248*	*-1266*	*-1274*	*-1278*	*-1280*
Inventory Investment ($bn, '12)	**75**	**-42**	*-63*	*150*	*96*	*60*	**-88**	**-169**	*-45*	*50*	*75*	*150*	*200*	*175*
Industrial Production, Mfg.	**-2.0**	**-6.6**	*6.1*	*4.8*	*1.9*	*1.7*	**2.8**	**4.5**	*3.6*	*4.9*	*5.4*	*5.9*	*4.5*	*1.9*
HOUSING MARKET														
Housing Starts (units, thous)	**1,292**	**1,397**	*1,624*	*1,676*	--	--	**1,599**	**1,588**	*1,662*	*1,645*	*1,653*	*1,682*	*1,686*	*1,685*
New Home Sales (units, thous)	**683**	**828**	*860*	*918*	*977*	*978*	**896**	**738**	*876*	*928*	*913*	*901*	*908*	*951*
Existing Home Sales (units, thous)	**5,327**	**5,658**	*5,972*	*5,964*	*6,086*	*6,210*	**6,303**	**5,833**	*5,862*	*5,891*	*5,920*	*5,949*	*5,979*	*6,009*
Case-Shiller Home Prices (%yoy)*	**3.4**	**9.9**	*9.4*	*7.6*	*6.2*	--	**11.7**	**15.2**	*11.7*	*9.4*	8.1	6.1	7.8	7.6
INFLATION (% ch, yr/yr)														
Consumer Price Index (CPI)**	**2.3**	**1.3**	*5.0*	*2.2*	*2.4*	*2.4*	**1.9**	**4.8**	*5.2*	*5.1*	*4.7*	*3.2*	*2.2*	*2.2*
Core CPI **	**2.2**	**1.6**	*4.2*	*2.5*	*2.5*	*2.5*	**1.4**	**3.7**	*4.0*	*4.1*	*4.4*	*3.0*	*2.4*	*2.5*
Core PCE** †	**1.6**	**1.5**	*3.81*	*2.00*	*2.15*	*2.20*	**1.7**	**3.4**	*3.6*	*3.9*	*3.6*	*2.6*	*2.0*	*2.0*
LABOR MARKET														
Unemployment Rate (%)^	**3.6**	**6.7**	*4.2*	*3.5*	*3.3*	*3.2*	**6.0**	**5.9**	*5.0*	*4.2*	*3.8*	*3.7*	*3.6*	*3.5*
U6 Underemployment Rate (%)^	**6.8**	**11.7**	*7.6*	*6.8*	*6.4*	*6.2*	**10.7**	**9.7**	*8.7*	*7.6*	*7.2*	*7.0*	*6.8*	*6.8*
Payrolls (thous, monthly rate)	**168**	**-785**	*620*	*215*	*123*	*100*	**518**	**615**	*679*	*667*	*317*	*213*	*179*	*150*
Employment-Population Ratio (%)^	**61.0**	**57.4**	*59.6*	*60.2*	*60.2*	*60.2*	**57.8**	**58.1**	*59.0*	*59.8*	*59.8*	*60.0*	*60.1*	*60.2*
Labor Force Participation Rate (%)^	**63.3**	**61.5**	*62.2*	*62.4*	*62.3*	*62.2*	**61.5**	**61.6**	*61.9*	*62.2*	*62.2*	*62.3*	*62.4*	*62.4*
GOVERNMENT FINANCE														
Federal Budget (FY, $bn)	**-984**	**-3,132**	*-3,000*	*-1,300*	*-1,100*	*-1,200*	--	--	--	--	--	--	--	--
FINANCIAL INDICATORS														
FF Target Range (Bottom-Top, %)^	**1.5-1.75**	**0-0.25**	*0-0.25*	*0-0.25*	*0.25-0.5*	*0.75-1*	**0-0.25**	**0-0.25**	*0-0.25*	*0-0.25*	*0-0.25*	*0-0.25*	*0-0.25*	*0-0.25*
10-Year Treasury Note^	**1.92**	**0.93**	*1.60*	*1.80*	*2.30*	*2.45*	**1.74**	**1.45**	*1.40*	*1.60*	*1.60*	*1.60*	*1.60*	*1.80*
Euro (€/$)^	**1.12**	**1.22**	*1.20*	*1.25*	*1.30*	*1.30*	**1.17**	**1.18**	*1.17*	*1.20*	*1.23*	*1.24*	*1.25*	*1.25*
Yen ($/¥)^	**109**	**103**	*110*	*105*	*102*	*100*	**111**	**111**	*110*	*110*	108	107	106	105

* Weighted average of metro-level HPIs for 381 metro cities where the weights are dollar values of housing stock reported in the American Community Survey. Annual numbers are Q4/Q4.
** Annual inflation numbers are December year-on-year values. Quarterly values are Q4/Q4.
† PCE = Personal consumption expenditures. ^ Denotes end of period.
Note: Published figures in bold.
Source: Goldman Sachs Global Investment Research.

Source: Goldman Sachs Global Investment Research

Economic Releases

Date		Time (ET)	Indicator	Estimate GS	Estimate Consensus	Last Report
Mon	**Sep 27**	**8:30**	**Durable Goods Orders (August)**	**+1.5%**	**+0.6%**	**-0.1%**
			Durable Goods Orders Ex-Transport	**+0.3%**	**+0.5%**	**+0.8%**
			Core Capital Goods Orders	**+0.3%**	**+0.4%**	**+0.1%**
			Core Capital Goods Shipments	**+0.3%**	**+0.5%**	**+0.9%**
		10:30	Dallas Fed Manufacturing Index (September)	n.a.	11.0	9.0
Tue	**Sep 28**	**8:30**	**Advance Goods Trade Balance (August)**	**-$89.0bn**	**-$87.0bn**	**-$86.4bn**
		8:30	Wholesale Inventories (August preliminary)	n.a.	+0.8%	+0.6%
		9:00	FHFA House Price Index (July)	n.a.	+1.5%	+1.6%
		9:00	**S&P/Case-Shiller Home Price Index (July)**	**+1.7%**	**+1.6%**	**+1.8%**
		10:00	Richmond Fed Manufacturing Index (September)	n.a.	10	9
		10:00	**Consumer Confidence (September)**	**115.5**	**115.0**	**113.8**
Wed	**Sep 29**	**10:00**	**Pending Home Sales (August)**	**+2.0%**	**+1.0%**	**-1.8%**
Thu	**Sep 30**	**8:30**	**Initial Jobless Claims**	**330k**	**330k**	**351k**
			Continuing Claims	n.a.	2,805k	2,845k
		8:30	**Real GDP (Q2 third)**	**+6.6%**	**+6.6%**	**+6.6%**
			Personal Consumption (Q2 third)	**+11.9%**	**+11.9%**	**+11.9%**
		9:45	**Chicago Purchasing Managers' Index (September)**	**62.0**	**65.0**	**66.8**
Fri	**Oct 01**	**8:30**	**Personal Income (August)**	**+0.3%**	**+0.2%**	**+1.1%**
			Personal Spending	**+0.4%**	**+0.6%**	**+0.3%**
			PCE Price Index	**+0.32%**	**+0.3%**	**+0.4%**
			Core PCE Price Index	**+0.25%**	**+0.2%**	**+0.3%**
		10:00	**UMich Consumer Sentiment (September final)**	**71.2**	**71.0**	**71.0**
		10:00	**Construction Spending (August)**	**+0.2%**	**+0.3%**	**+0.3%**
		10:00	**ISM Manufacturing Index (September)**	**58.9**	**59.5**	**59.9**
		17:00	**Lightweight Motor Vehicle Sales (September)**	**12.5M**	**13.3M**	**13.1M**

Source: Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

We, Jan Hatzius, Alec Phillips, David Mericle, Spencer Hill, CFA, Joseph Briggs and Ronnie Walker, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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