

Week Ahead Economic Preview

New insights into growth and inflation trends via flash PMI surveys

- Flash PMI surveys for the US, Eurozone, Japan, UK and Australia
- China industrial production, retail sales data
- Trade and inflation data due for the eurozone and various Asian economies

A busy economic calendar is seen for the week ahead with special attention on May's flash PMI data due from the US, Eurozone, Japan, UK and Australia on Friday. The survey will provide eagerly awaited updates to economic recovery momentum and inflation trends.

China's retail sales, industrial output and investment data are meanwhile due Monday, while the Eurozone's economic releases include GDP and CPI, and the UK updates its labour market and retail sales numbers. Mish-mashed between which will be a series of trade and inflation data from several Asia economies plus GDP updates from Japan and Thailand.

Flash PMI surveys for May

Key questions awaiting answers from the upcoming flash PMI surveys will surround the themes of economic recovery momentum, supply shortages and inflation.

April surveys had indicated an acceleration of the <u>global</u> <u>economic recovery</u> as lockdown measures eased in many parts of the world. The <u>US notably led the global</u> <u>expansion as consumer sectors increasingly supported</u> the upturn. However, when good economic news turns out to be bad news for the markets is when stronger economic growth is being accompanied by rising prices, which has ruffled the markets in recent sessions. Higher inflation has been a key feature in recent PMIs, with new peaks for various survey price gauges often linked to record supply delays</u>, notably for semiconductors.

Although central banks including the Fed have kept an emphasis on jobs, markets have grown concerned over inflation, and will be eager to see signs of demand shifting from goods to services, supply constraints easing and price gauges moving off their highs.

In Europe, the flash PMI surveys for May are increasingly expected to add to signs that UK and Eurozone economic recoveries are moving up a gear in the second quarter, following the declines in GDP seen in the first quarter, which is likely to be confirmed by the eurozone GDP numbers. Renewed expansions were signalled in April as the PMIs beat expectations, showing <u>surging UK activity</u> alongside <u>record Eurozone</u> <u>manufacturing growth</u>, with the latter's services sector also expanding for the first time since August 2020.

China data dump plus pan-Asia trade and inflation releases

China is meanwhile also expected to find industrial production and retail sales figures faring strongly in the upcoming releases as the economy continues to build on its recovery from the pandemic.

Further across Asia, trade and inflation data will be in abundance. Japan, Singapore, Taiwan and Indonesia will provide updates on their April trade performances. Consumer inflation data will meanwhile arrive from Japan and Hong Kong SAR, while South Korean producer prices will also be updated.

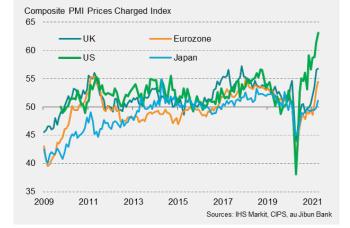
Notably, Japan's GDP – released Tuesday – is expected to revert into decline as COVID-19 restrictions weighed on consumption in the first quarter. However, recent surveys have shown an improving trend, albeit with a <u>k-shaped recovery in Japan</u> as manufacturing gains were offset by service sector woes.

Special report

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Flash PMI updates

Markets will be eager to see if flash PMI data will show an easing of recent strong inflationary pressures, most notably in the US.





Key diary events

Monday 17 May

Singapore Non-Oil Domestic Exports (Apr) China House Prices (Apr) China Fixed Asset Investment (Apr) China Industrial Production (Apr) China Retail Sales (Apr) Thailand GDP (Q1) United States NY Fed Manufacturing (May) United States NAHB Housing Market Index (May)

Tuesday 18 May

Japan GDP (Q1) Germany Producer Prices (Apr) UK Labour Market Report, incl. Unemployment, Employment, Vacancies and Wages (Apr) Eurozone Employment (Q1) Eurozone Trade Balance (Mar) Eurozone GDP Flash Estimate (Q1) US Building Permits (Apr) US Housing Starts (Apr) US API Crude Oil Inventory

Wednesday 19 May

South Korea and Hong Kong Market Holiday New Zealand PPI (Q1) Australia Consumer Sentiment (May) Australia Wage Price Index (Q1) Japan Industrial Production (Mar) Eurozone HICP Final (Apr) US Crude Oil Inventory

Thursday 20 May

Japan Machinery Orders (Mar) Japan Trade Balance (Apr) China Loan Prime Rates (May) Australia Employment (Apr) Indonesia Trade Balance (Apr) Taiwan Current Account (Q1) Taiwan Balance of Payments (Q1) Hong Kong SAR Unemployment Rate (Apr) Eurozone Current Account (Mar) United States Initial Jobless Claims United States Philly Fed Business Index (May)

Friday 21 May

Australia IHS Markit Flash PMI, Manufacturing & Services* Japan au Jibun Bank Flash PMI, Manufacturing & Services* UK CIPS/IHS Markit Flash PMI, Manufacturing & Services* Germany IHS Markit Flash PMI, Manufacturing & Services* France IHS Markit Flash PMI, Manufacturing & Services* Eurozone IHS Markit Flash PMI, Manufacturing & Services* US IHS Markit Flash PMI, Manufacturing & Services* South Korea PPI (Apr) Japan CPI (Apr) Australia Retail Sales (Apr) Hong Kong SAR CPI (Apr) Thailand Customs-Based Trade Data (Apr) UK GfK Consumer Confidence (May) United Kingdom Retail Sales (Apr) United States Existing Home Sales (Apr) Eurozone Consumer Confidence Flash (May)

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Chris Williamson

Jingyi Pan

Chief Business Economist, IHS Markit

Economics Associate Director IHS Markit

chris.williamson@ihsmarkit.com

jingyi.pan@ihsmarkit.com



Special Report

Global Electronics Surge Continues to Boost APAC Exports

Rajiv Biswas

Asia Pacific Chief Economist, IHS Markit Email: <u>Rajiv.biswas@ihsmarkit.com</u>

The latest IHS Markit Global Electronics Purchasing Managers' Index (PMI[™]) continues to signal buoyant output and new orders in the global electronics sector. Rebounding consumer spending and industrial production in key economies, notably the US, China, EU and UK, is helping to drive demand for a wide range of electronics products.

However, the strength of global electronics demand is continuing to exacerbate semiconductor shortages for some manufacturing industries, notably the global automotive sector. Supply chain disruptions to semiconductor production have also impacted on the situation. Rising concerns about the vulnerability of semiconductor supply chains resulted in President Biden convening a White House Summit with leaders of major technology and manufacturing firms on 12th April, to discuss strategies to reduce the future vulnerability of the US economy to such supply chain disruptions.

A key risk is excessive global vulnerability to semiconductors supply from South Korea and Taiwan, which are major electronics production hubs but also potential geopolitical flashpoints in the Asia-Pacific region. Military tensions in the Taiwan Strait and South China Sea have escalated in early 2021, highlighting these vulnerabilities.

APAC electronics sector exports rebound

South Korea's The IHS Markit Global Electronics Purchasing Managers' Index[™] has signaled a strong rebound in the world electronics industry since mid-2020, as global lockdowns have eased and consumer spending has rebounded in many major economies.

In the US, the Biden Administration's USD 1.9 trillion fiscal stimulus package has already resulted in stimulus checks for 160 million households, helping to sharply boost March personal incomes and driving a jump in private consumption spending. US consumer sentiment is also being boosted by the rapid vaccination rollout and declining new Covid-19 cases, as well as the recovery in the US labour market and rising wages. Retail sales in electronics and appliance stores leapt by 10.5% month-on-month in March 2021. In China, retail sales have also shown significant normalization, with improving momentum in early 2021. Meanwhile the strong global rebound in manufacturing output is also helping to drive demand for industrial electronics products.



25 ______ 25% 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 Sources: IHS Markit, JPMorgan

Global goods exports boom



The electronics sector rebound is making an important contribution to the recovery of manufacturing exports and industrial production in many East Asian industrial economies. The electronics manufacturing industry is an important part of the manufacturing export sector for many Asian economies, including South Korea, China, Japan, Malaysia, Singapore, Philippines, Taiwan, Thailand and Vietnam. Furthermore, the electronics supply chain is highly integrated across different economies in East Asia.

The headline IHS Markit Global Electronics PMI rose to 61.2 in April from 60.4 in March and from 58.1 in February. The latest reading pointed to the largest



improvement in global electronics sector operating conditions for 21 years, with new order growth accelerating sharply.

The IHS Markit Global Electronics PMI new orders index rose from a low of 34.4 in May 2020 to 61.9 in April 2021, which showed the fastest pace of expansion in new orders since June 2004.

IHS Markit Global Electronics PMI



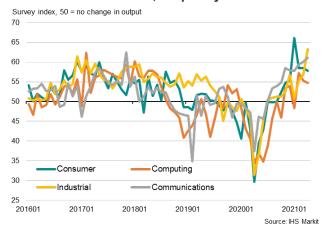
the importance of electronics the Due to in industries of manufacturing many East Asian economies, the rebound in global electronics demand has been reflected in the recent industrial production and exports data for many economies, including mainland China, South Korea, Vietnam and Taiwan.



East Asian Manufacturing PMI new export orders

The health of all four monitored sub-sectors of the electronics industry continued to show strong expansion in April, according to the IHS Markit Global Electronics PMI survey, with the upturn led by the communications and industrial segments.

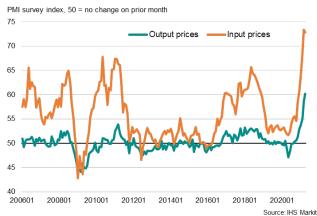
Global electronics PMI, output by sector



Rising electronics industry pricing pressures

However, the rapid rise in electronics production has also triggered a sharp upturn in raw materials input prices for electronics firms during the first four months of 2021. The IHS Markit Global Electronics PMI Input Prices Index has surged to 72.8 in April 2021. Notably, the rate of input price inflation for electronics firms was the one of the fastest recorded since data collection began in January 1998.

IHS Markit Global Electronics PMI Prices



The near-term pricing outlook for the remainder of 2021 according to IHS Markit Pricing & Purchasing analysis for semiconductors and components generally is that supply shortages are likely to continue to translate into price escalation. Printed circuit board assemblies are the most severely affected, but semiconductors, bare printed circuit boards, resistors, capacitors, and connectors are all expected to see price pressures. (See "Prices: Pricing Analysis – Semiconductors", by IHS Markit Pricing & Purchasing, 1st April 2021.) The IHS Markit Global Electronics PMI Output Price Index



reached a new survey high of 60.1 in April 2021, having surged higher in recent months.

In 2022, according to IHS Markit Pricing & Purchasing, moderating demand for electronic components and improving semiconductors production is expected to bring supply and demand closer to balance and lead to some price relief. Specific categories will show some resilience in pricing given the changing demand landscape. For example, the expansion of electronics in light vehicles will keep pressure on certain commodity electronic components.

Global auto manufacturers as well as smartphone producers are among the industry segments that have been impacted by semiconductors shortages. According to IHS Markit Automotive research, vehicle manufacturers are finding increased disruption to the supply of systems using semiconductors in the first four months of 2021. Many automakers worldwide have reported disruptions to production due to shortages of semiconductors, including Ford, VW Group, GM, Honda and Mazda.

According to IHS Markit Automotive research, reports of disruption within the supply chain of semiconductors to the automotive sector began in late 2020 and have continued into the second quarter of 2021. (see IHS Markit Automotive, 10th May 2021, "<u>Semiconductor Supply Issue: Light Vehicle Production Tracker</u>").

The extent of the shortages of critical electronics components has become so severe that high level consultations have been held involving key industry bodies as well as government officials from major industrial economies including the US and Germany. Technology companies including semiconductors manufacturing firms participated in the White House Summit on 12th April on semiconductors shortages and supply chain vulnerabilities.

Global semiconductors shortages have also been impacted by temporary supply disruptions to semiconductors production in Texas due to power outages in February as a result of severe weather, as well as production disruptions in Japan due to a fire in a Renesas Electronics semiconductors plant in mid-March.

Chip stockpiling during 2020 due to US government sanctions on certain Chinese technology companies have also contributed to the shortages. Global auto manufacturers as well as smartphone producers are among the industry segments that have been impacted by these shortages. The US Department of Commerce added seven Chinese supercomputing firms to its entity list in early April 2021.

Mainland China's electronics exports surge

China's exports for the combined January-February 2021 period soared by 60.6% y/y according to trade data from China's General Administration of Customs. China's surging exports in the first two months of 2021 reflect low base year effects due to the pandemic-related shutdown of China's industrial production for most of February 2020 as well as strong demand for electronics and PPE equipment in early 2021.

China's exports of LCD panels in value terms were up 52.4% y/y in the first four months of 2021, while exports of integrated circuits were up 33.4% y/y. Exports of mobile phones rose by 45.9% y/y in the same period.

China's electronics exports were up 54.1% y/y in the January-February 2021 period, as global electronics demand has risen strongly due to the global shift to remote working and online shopping, which has resulted in surging demand for consumer electronics products such as laptops, mobile phones and wearables.

Buoyant South Korean electronics exports

The South Korean Ministry of Trade, Industry and Energy announced that South Korea's total exports rose at a very rapid pace of 41% y/y in April.

Semiconductors exports have been rising sharply for the past ten months, increasing by 30% y/y in April, helped by stronger global demand for memory chips at data centres and increased memory chip prices due to the prolonged global supply shortage led to the expansion.

South Korea's Ministry of Trade, Industry and Energy has projected that South Korean semiconductors exports in 2021 will rise by around 10% to USD 109 billion, due to buoyant global demand for electronics products.

With significant shortages of semiconductors having become evident during early 2021, this is expected to further boost South Korean semiconductors exports during 2021.

Taiwan faces semiconductors shortages as demand soars

Taiwan's exports have risen at a very rapid pace during the first four months of 2021, helped by strong demand for electronics. In April, total exports rose by 38.7% y/y,



with semiconductors exports up 34.9% y/y. Total electronics components, which accounted for 38.6% of total exports, were up 34% y/y.

The global shortage of semiconductors has driven up capital expenditure plans, with Taiwan's TSMC, the world's largest chipmaker, having announced plans to increase capital spending on production and development of advanced chips to a range of USD 25 billion to USD 28 billion in 2021, a 60% increase on 2020. Taiwan's USMC, which also manufactures chips, plans to lift spending on new capital equipment by around 50% in 2021.

Global electronics PMI, supplier lead times



A continuing risk to the near-term semiconductors production outlook in Taiwan is from the severe drought impacting on the economy. Drought conditions are estimated to be the worst for 56 years, and have resulted in water restrictions in some areas, including in a region that is a key hub for semiconductors manufacturing. Semiconductors plants have very high water consumption requirements, and although most plants have some water storage facilities, there is a risk that water supply shortages could disrupt production if significant rainfall does not occur by June in the rainy season.

ASEAN electronics exports rebound

Due to the importance of the electronics sector for the manufacturing sectors of many ASEAN nations, the global rebound in electronics demand has been reflected in large increases in electronics exports from a number of ASEAN nations.

Singapore's domestically manufactured electronics exports rose by 24.4% y/y in March 2021. In March, electronics exports to the EU were up 39% y/y, while electronics exports to South Korea were up by 27% y/y. In Vietnam, exports of computers, electrical equipment and parts rose by 31% y/y in the first quarter of 2021, as global demand for computer equipment surged due to the pandemic and the shift towards remote working by workers worldwide. Exports of these products to the US were buoyant, rising by 46% y/y, while exports to the EU rose by 39% y/y. Exports of mobile phones and other telephone equipment soared by 12% y/y, with exports of mobile phones and components to China rising by 63% y/y.

In Malaysia, exports of electrical and electronic products, which accounted for 37.7% of total merchandise exports, were extremely strong, up 47% y/y in March 2021.

India: Covid-19 pandemic disruptions

In India, the severe escalation of the Covid-19 pandemic since March 2021 has impacted on industrial production in the electronics sector. Global electronics firms have significantly increased their manufacturing capacity in India in recent years, notably for mobile phones.

However, the high level of daily new cases across India is having some impact on electronics production. The Foxconn iPhone12 factory in Tamil Nadu reported to have cut production by 50% for health safety reasons due to Covid-19 cases. Other global electronics multinationals that have built up their presence in India in recent years include Samsung and Wistron.

With the pandemic still raging in India, the near-term outlook remains uncertain with lockdowns having been put in place in many Indian states and cities.

Semiconductors: strategic response by US and EU

The extent of the shortages of semiconductors has become so severe during the first half of 2021 that high level consultations have been held involving key industry bodies as well as government officials from major industrial economies including the US and Germany. On 24th February, US President Biden signed an executive order for a US government review of US supply chain vulnerability for critical materials, including for semiconductors. In the US, President Biden's new executive order will trigger a review of US supply chain vulnerability to semiconductors.

On 12th April, President Biden also held a White House Summit on semiconductors shortages with 19 technology firms, including Taiwan's TSMC and South Korea's Samsung Electronics. The Biden Administration plans to increase domestic semiconductors capacity,



with spending measures contained in the proposed USD 2 trillion infrastructure plan to boost domestic semiconductors manufacturing and R&D.

In 2020, Taiwan's TSMC announced plans to invest USD 12 billion in a large new semiconductors plant to be built in Arizona for making advanced 5-nanometer fab. Construction is expected to start in 2021 while production of semiconductors is expected by 2024. Intel also announced plans in March 2021 to spend USD 20 billion to build two new semiconductors plants in Arizona. These major announcements signal that US semiconductors output will rise significantly over the medium-term, helping to address supply chain vulnerabilities.

In the European Union (EU), the European Commission has set a goal to double semiconductors production within the EU from 10% of world production in 2020 to a projected 20% of world production by 2030, as part of the 2030 Digital Compass Plan. A key strategic priority identified by the European Commission is to reduce dependence on Asian sourcing for advanced chip fabrication, reflecting concerns about geopolitical risks and potential supply chain vulnerabilities for the EU manufacturing industry. The EU plans to strengthen its manufacturing capabilities in advanced semiconductors technology through large-scale investment as part of the European Recovery and Resilience Facility under the Digital Transition program.

Meanwhile mainland China, whose manufacturing sector is still heavily reliant on imported semiconductors, is also trying to strengthen its own domestic semiconductors manufacturing capabilities. Mainland China imported USD 350 billion of semiconductors in 2020, up 14.6%y/y. Boosting domestic manufacturing capacity for semiconductors is an important policy priority for the Chinese Government's 14th Five-Year Plan that runs for the 2021-2025 period.

APAC electronics sector outlook

In the half of 2021, global electronics demand has rebounded significantly from the lows of the first half of 2020, when lockdowns disrupted production and consumer spending. With an improving global economic recovery expected during the course of 2021 as Covid-19 vaccines are progressively rolled out, global demand for electronics products is expected to be strong during 2021.

The impact of the pandemic has accelerated the pace of digital transformation due to the global shift to working remotely, which has boosted demand for electronic devices such as computers, printers and mobile phones. The easing of lockdowns in many countries has also triggered a rebound in consumer spending, helping to boost demand for a wide range of consumer electronics. Spending on consumer electronics has also been boosted by fiscal stimulus measures in many OECD countries that have provided significant pandemic relief payments to support households in many large economies, including the US, UK, Japan and Australia. Meanwhile auto demand has also shown a rebound after slumping during the first half of 2020, which is boosting demand for auto electronics, albeit contributing to intensifying supply-side problems related to semiconductors shortages.

The medium-term economic outlook is also supportive for the electronics industry, with sustained strong world economic growth forecast over 2022-2024.

With shortages of semiconductors disrupting manufacturing supply chains in early 2021, the importance of having domestic electronics production capacity for critical electronics components has become a national priority for major industrial nations, including the US, EU and China. For the US and EU, reducing reliance on Asian semiconductors production has become a key strategic priority over the next decade.

The outlook for electronics demand is also supported by major technological developments, including 5G rollout over the next five years, which will drive demand for 5G mobile phones. Demand for industrial electronics is also expected to grow rapidly over the medium term, helped by Industry 4.0, as industrial automation and the Internet of Things boosts rapidly growth in demand for industrial electronics.

Competition amongst leading technology nations in strategic electronics production has also intensified. Consequently strategic global competition amongst the world's leading high-technology nations is also likely to play a greater role in reshaping the global electronics industry landscape over the next decade.