

30 October 2019

Asia and the global tech slump

The chips are down

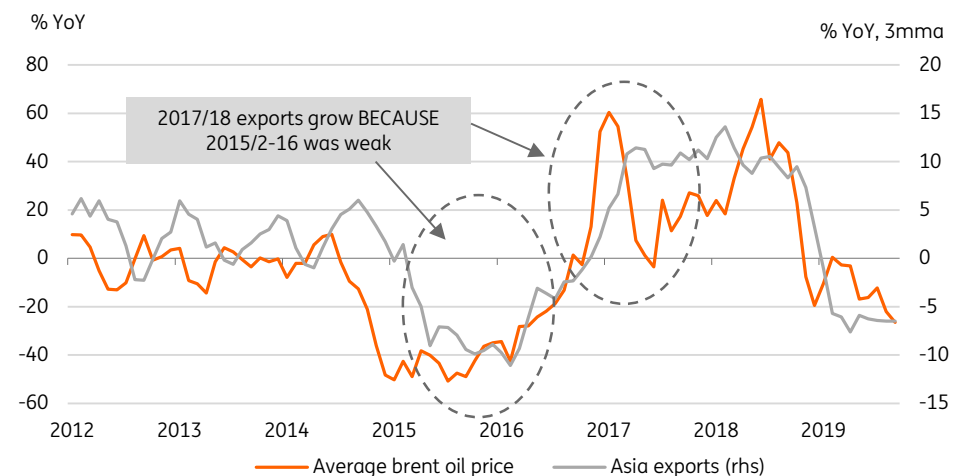
- For much of this year, economic and export growth in Asia has been very disappointing
- Most people probably put this down to the Trade War
- But a big part of the slowdown has stemmed from a global slump in demand for and prices of electronic items
- Put another way, Asia has been hit by the global tech slump

Background

To understand current Asian economic weakness, we have to go back in time. 2015 and 2016 were weak years for Asia. Exports and growth both fell. The cause? There were many, but a contributory factor was the lagged effects of earlier low oil prices. The negative terms-of-trade effect for the oil producers (Middle East, Russia, US) meant that they could afford to buy fewer Asian exports. This began to change as oil prices nosed back up to the US\$60/bbl area. For some Asian economies, it appears there is such a thing as too low an oil price.

And the exports that Asia produces which the rest of the world didn't buy? There is one type of good that dominates Asian production and exports. Electronics. Whether this is consumer electronics or the component parts that make them work, the vast majority of these goods worldwide are made in Asia. And each year, Asia's dominance in these industries grows.

After the slump, the boom, then another slump



Source: CEIC, Bloomberg

Through 2017 and 2018, the better environment for Asian exports led to a familiar phenomenon in the electronics industry, and in particular, for the semiconductor industry. Investment picked up sharply to boost production capacity.

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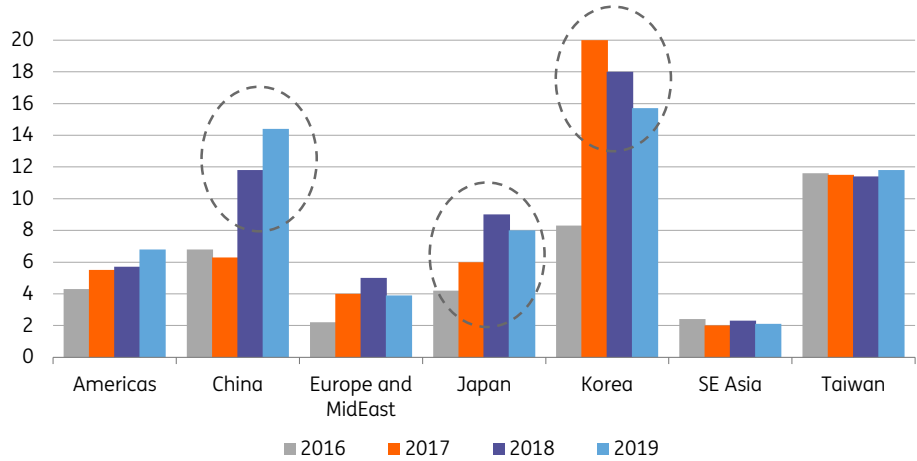
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The semiconductor industry is very cyclical...

And like so often before, extrapolating trend growth rates in 2017 and 2018 led to a considerable overestimate of the capacity that was actually needed. Growth rates for exports in 2017/2018 were not the sign of things to come, but just a reflection of how bad 2015/2016 had been.

Fig 1 Fab equipment spending (Investment spending creates overcapacity, USDbn)

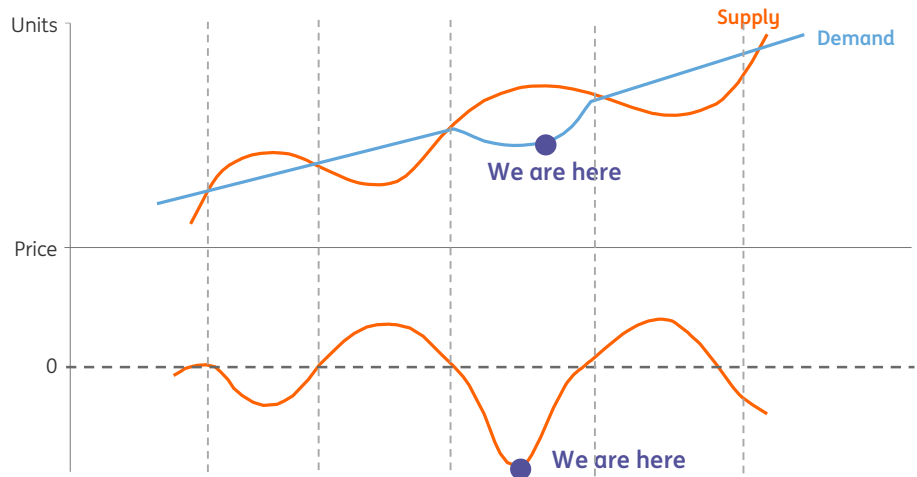


Source: Statista

...but this time, overinvestment collided with slumping demand

The recovery continued until the end of 2018 and then it hit a wall. Yes, manufacturers had again overinvested, and driven prices of these goods down. That is part of the normal electronics cycle. What was different this time was that this coincided with a substantial drop in demand.

Fig 2 Stylised electronics cycle

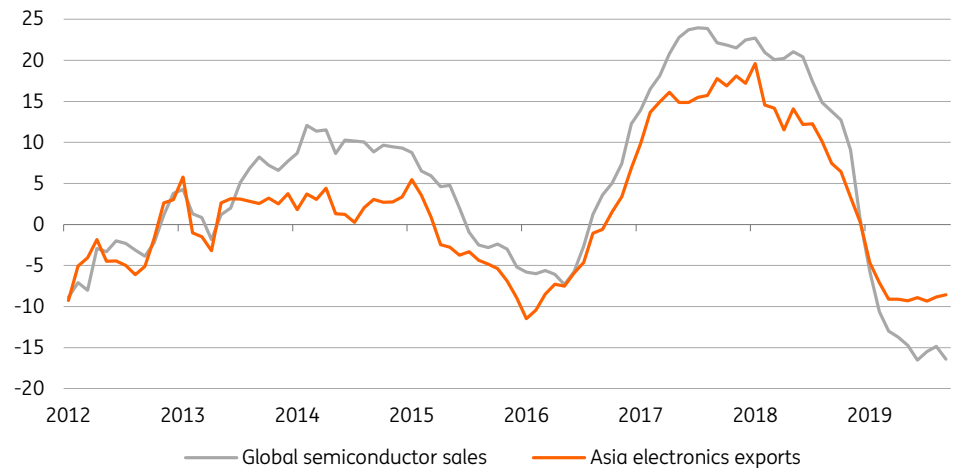


Source: ING

Falling volumes and prices – a bad combination

Now, both prices and volumes of electronics began to fall. And from double-digit growth rates, countries around Asia were seeing exports of electronics and the associated industrial production rates that went with them, falling at double-digit rates.

Fig 3 Global semiconductor sales and Asian electronics exports (% YoY, 3mma)



Source: CEIC, Bloomberg, ING

Central bank and government responses to the tech slump have been mixed, but generally modest

Some central banks in the region have responded with easier monetary policy. But in some of the biggest electronics producers in the region, Korea, Taiwan, Singapore, the monetary response has been very limited, slow, or non-existent. Offsetting fiscal policy has also been quite varied too.

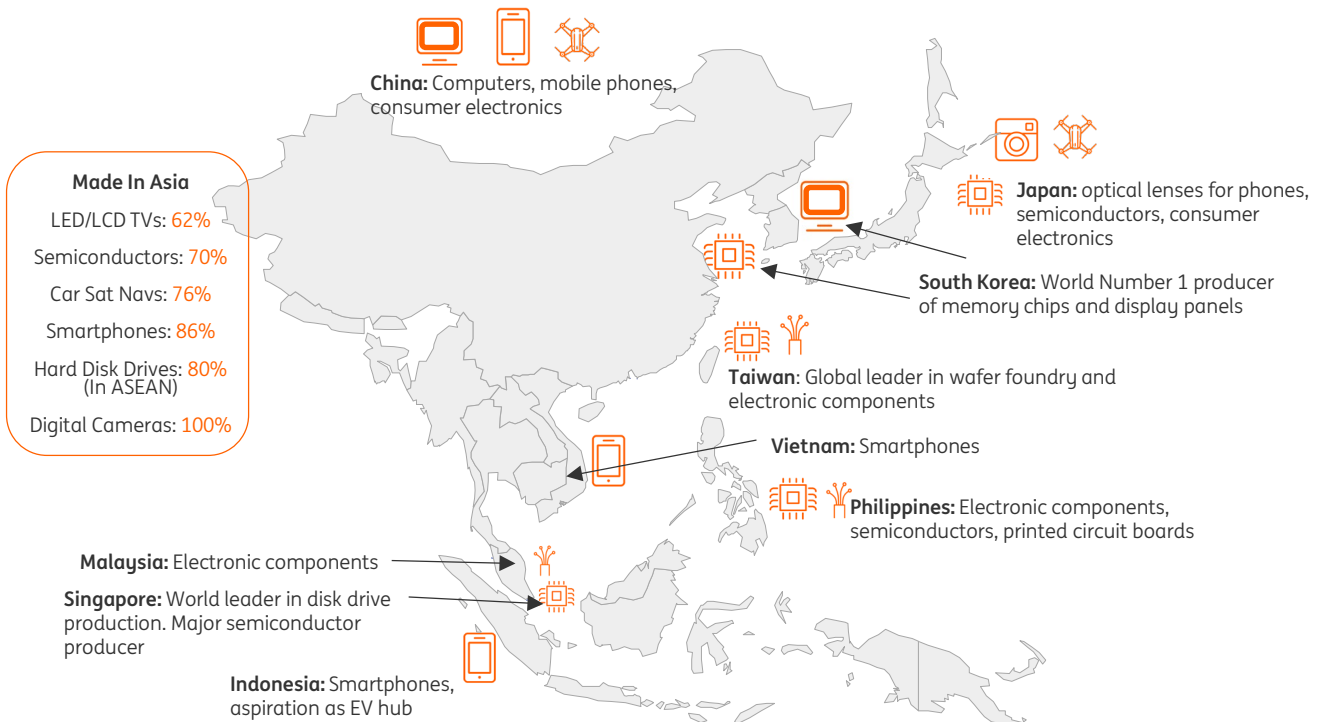
In this note, we will look at the causes of this slump. We will examine the evidence that the slump is abating, and consider the prospects for recovery.

A global issue, but pan-Asian problem

Hard industry figures are hard to come by

Surprisingly, it is quite difficult to find reliable figures showing how Asia dominates the field of electronics. You would think this was something one of the many industry bodies would look into. Instead, you can find piecemeal figures from various years, so the following numbers are provided more as an indication of magnitudes, rather than a firm description of the current state of play.

Fig 4 Asia Map of who makes what

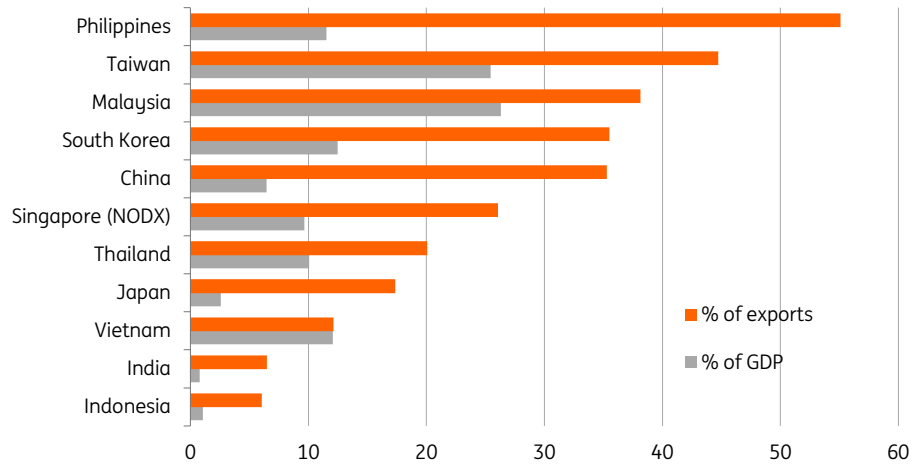


Source: ING

Asia's dominance in the field of electronics is indisputable...

The direction of travel, however, is much clearer. From a minor player at the turn of the century, Asia is now the major producer of almost every electronic component you can think of, from semiconductors to diodes, OLED screens to radio frequency chips, and of consumer electronics, cameras to computers to mobile phones.

Fig 5 Asian electronics as % exports and GDP



Source: CEIC

...though across the region, electronics exposure varies considerably

Across Asia, electronic exports account from as little as 5-10% of the total (India, Indonesia) to 45-55% (Taiwan, Philippines). The average for Asia is 30%. The impact on GDP can vary considerably, however. For example, the Philippines high export percentage masks that the value added for these exports is very small, and confined to testing, packaging and similarly low value operations. Taiwan, with a smaller percentage of exports, and Malaysia, are much higher up the value chain, with electronics accounting for almost a quarter of GDP.

Very large electronic export dominance does not necessarily mean GDP dominance

Both Singapore and South Korea are big global electronics producers, though their relatively diverse economies provide some shielding from the downturn, with electronics accounting for only 10-12% of annual GDP.

Asia is not just a production hub for electronics, much of that production is also consumed in Asia too

Newcomers, like Vietnam, are seeing both exports and GDP from electronics grow rapidly. For example, Vietnam now produces 40% of all Samsung handsets.

Not only is most of the world's supply of electronic components and products produced in Asia, but Asia is now the major end market for many of these goods too. In 2018, for example, 40% of all personal computers sold worldwide, were sold in China alone. Asia is no longer just a manufacturing hub, spitting out electronic products to be consumed in Europe and the US.

Intra-Asian trade in electronics has grown in importance

Value chains in the region have become very complicated, but an increasing trend with respect to trade in electronics is that it is intra-regional. Asia is no longer just a manufacturing hub. It is now the dominant demand centre for electronic goods.

This global predominance is both a boon and a curse. With so much invested in this one sector of the economy, its slump has had far reaching and negative consequences.

Mobile phones no longer causing such a buzz

Higher prices, but marginal improvements are not an enticing business model

Causes of the slump

The global handset slump

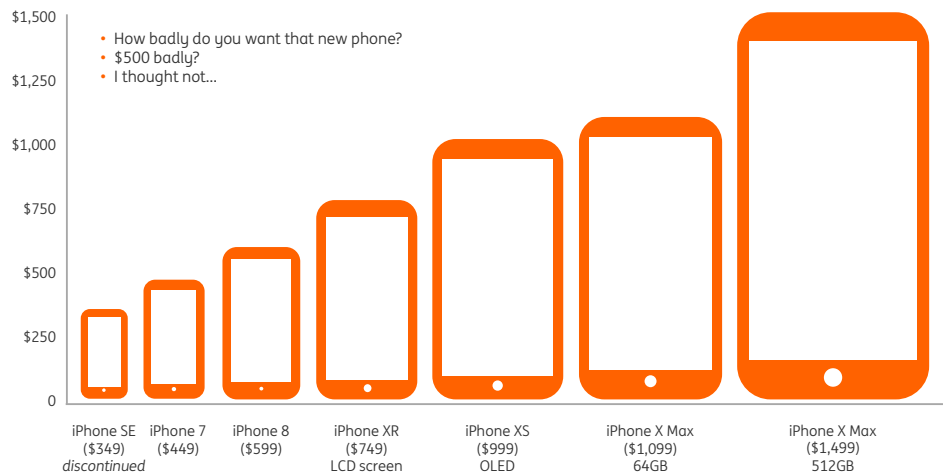
There was a time when the introduction of a new mobile phone handset was cause for much excitement amongst technophiles. People would queue around the block and around the clock to be one of the first to own a new Apple or Samsung phone.

Recent new offerings from the mobile phone industry are being talked up by industry insiders, but as an outsider, the hype no longer seems to be there. Queues may still form for new offerings, but in scores, rather than hundreds or thousands as before.

And the reason for this is all too apparent. New generation phones offer better cameras, better screens, better security features, and better battery life. But all these are marginal improvements. Either this, or gimmicks – foldable screens for example.

But the price differences are far from marginal. Although no longer offering the very bottom end models, the price differences of some of the new models is extremely high.

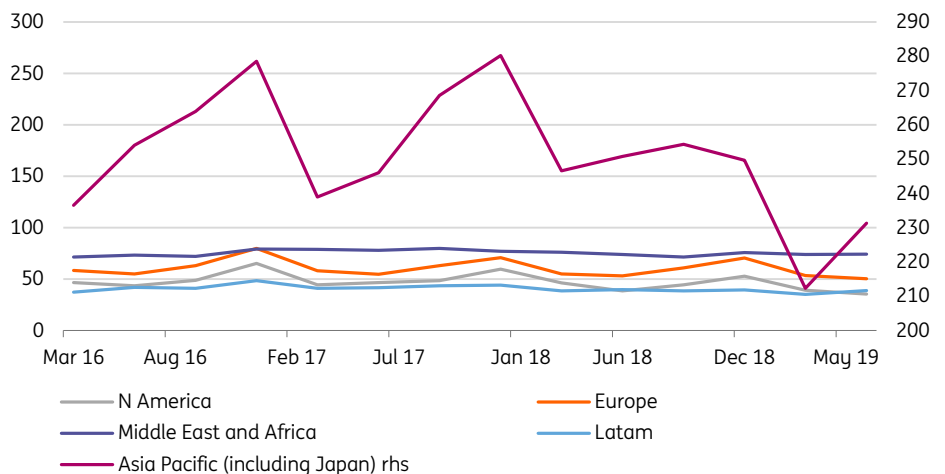
Fig 6 Price quanta increases for new generation handsets



Source: Bloomberg, ING

Marginal improvement for a quantum price increase? This is an equation that simply doesn't work for all but the most ardent techno-geek.

Fig 7 Global semiconductor sales and Asian electronics exports (m)



Source: Bloomberg

Global handset shipments have fallen sharply

Globally, mobile phone handset shipments have tanked. And as most of these are made in Asia, and sold in Asia, and use parts that are made in Asia, this is hurting the tech industry in Asia, and hurting Asian economic growth more broadly.

Anticipation of 5G is also delaying consumer purchases

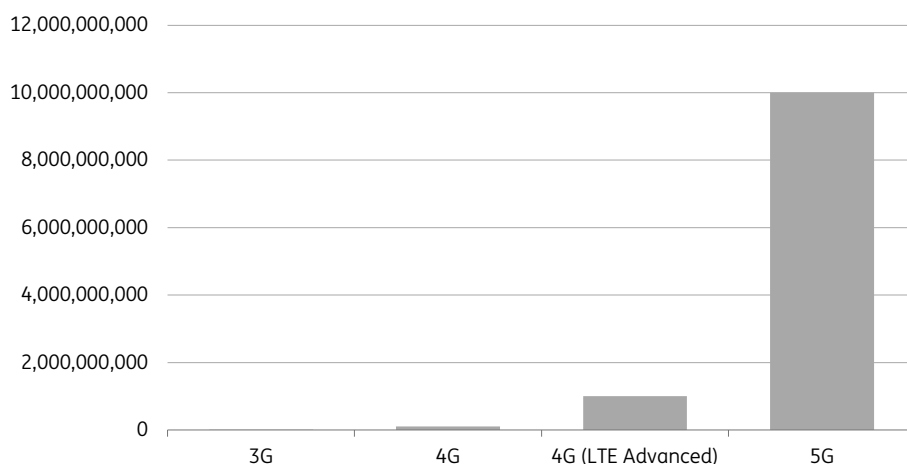
5G

There is another reason besides eye-watering prices why mobile handsets aren't selling. That is 5G. This isn't really available in most current handsets, nor is the technology being rolled out in a convincing fashion in any geography yet, though a number of places are making a start.

If you download a movie on regular 4G broadband these days onto a tablet of whatever make, it will probably take you about 3-4 minutes. That is pretty rapid compared to 3G, when it would take you about as long to download as it would to watch the movie.

But if you believe the hype, and there may be some exaggeration in the claims, it is impossible to know until it is rolled out, but that download might only take 3-4 seconds when 5G becomes a reality.

Fig 8 5G vs 4G and 3G speed comparison (bytes per second)



Source: Phone Arena.com

5G could be a "light bulb moment"

This is, quite literally, an economic "light-bulb moment" – the point where we stop burning kerosene in lamps to light our homes, and instead, flick on a wall switch. The implications for the way we run our businesses, to the way we run our lives are beyond reasonable imagination, but will in any case be profound.

5G should be good for Asia, but it may also be very disruptive

And it is tempting to conclude from Asia's exposure to the tech industry, that 5G will be unambiguously positive for the region. Directionally, that is probably correct. Asian economies will probably fly when 5G becomes a day-to-day reality – more so than any other region. But this could be immensely disruptive too.

5G offers a real chance of total automation for factories. Autonomous vehicles also become a reality, not just a funky experiment, and IOT - the internet of things – more of a concept than a real thing right now, can really develop.

Today's state of the art electronics could become techno-junk overnight

But a cost of this is that your tablet and mobile handset, whether state of the art or not today, may become techno-junk overnight.

It really is impossible to conceive just how fundamentally 5G may change our lives. But it is perhaps easier to imagine just how different our needs for technology will be.

So much information and entertainment will be streamable in real time, the need for local "storage" may become obsolete.

Will we still need flash memory (solid state NAND chips)? Possibly not. Will we still use handsets and tablets? Possibly not if all you need is a means to visualise, not a means to store, a drop-down visor might take the place of a larger device with a screen.

Automation may require government intervention to mop up surplus labour

Automated factories and driverless cars sound like a great idea. But what happens to the millions of drivers driving for one of the many ride-hailing app firms, whose only skill is the ability to read and follow instructions on a satnav,? Or the workers dislodged from factories by automation? It is easy to say, “creative destruction” and “the march of progress” but even the last industrial revolution created many losers, and far more inequality for a time. It took years for the benefits of progress to be felt broadly, and many thousands ended up in the workhouse before that occurred.

So yes, Asia is well placed to benefit from the 5G rollout, but it may also experience severe disruption too, both at a producer and a consumer level.

Crypto-mining has come a long way from the early days of Bitcoin

Crypto mining

As well as a slump in the demand for mobile handsets, another big user of electronics in recent years has been the crypto-currency mining fraternity. There was once a time when children would use their parents’ home PC to mine Bitcoin.

These days, to get a fraction of a bitcoin, you would need the processing power of an Antminer S-9, or similar, packed full of state-of-the-art computing power.

But the energy costs outweigh the benefits for most would-be miners

The processors used in such machines require a lot of energy, give off a lot of heat and need a lot of cooling. At one stage, at its height, estimates of the energy associated with crypto-currency mining were equivalent to the electricity consumption of Switzerland.

Fig 9 USD/Bitcoin



Source: Bloomberg

Even with a resurgence of QE, crypto is probably not going to be a driving force for electronics this time

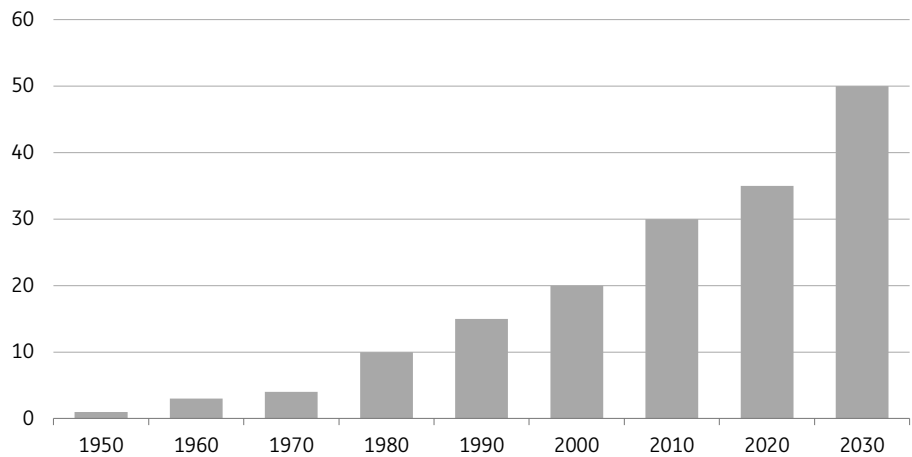
Crypto-currency mining has probably tailed off as the prices of crypto-currencies have softened, though the latest asset-purchasing actions by the ECB and Fed look to be giving it a renewed burst of life. This could foster more electronics demand for crypto-mining, but with the returns to such activity dropping relative to their cost, we don't believe this will have a big impact in the coming quarters and years. In short, crypto is no longer a significant positive driving force for electronics growth.

A car is now a large box filled with electronics

Auto sales

If you buy a new car these days, about 35-40% of the cost of that vehicle is likely to be attributable to the electronics in the car. For hybrid, or E-vehicles, the proportion is likely to be even higher – up to 60%. So, what you are actually doing when you buy a vehicle is buying a big metal box on wheels full of electronics.

Fig 10 Proportion of auto cost accounted for by electronics (%)



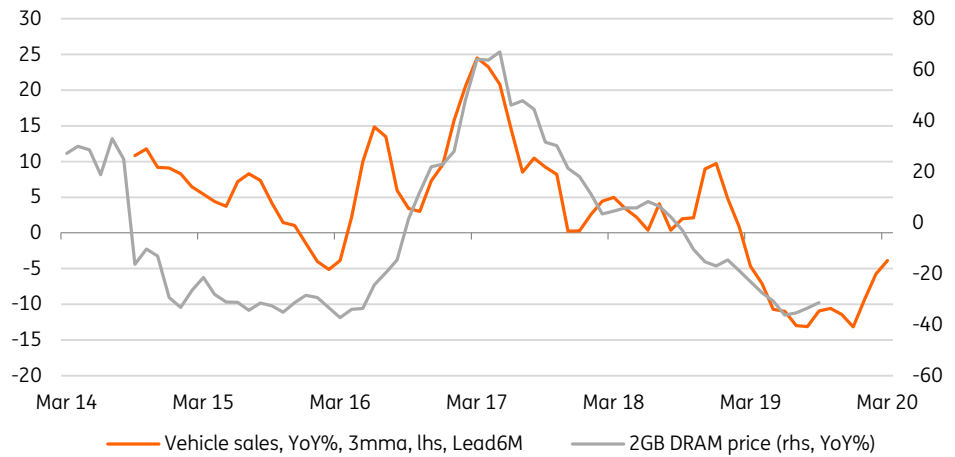
Source: PWC

Global car sales are weak, so electronics demand is weak

Right now, global auto sales are very weak. In China, sales of autos have dropped sharply, as ride-hailing apps have become a more cost-effective way of ensuring on-tap transport than owning a vehicle. Social preferences for property over car-ownership have also played a role in shifting demand from autos to property.

In India, car sales are down almost 40% YoY, mainly a result of weak demand, a lack of financing for car vehicles and higher prices resulting from tighter emissions standards. With the two biggest or most populous economies in Asia seeing auto sales slide, demand for auto-related electronic components is also in sharp decline.

Fig 11 Chinese vehicle sales and DRAM prices



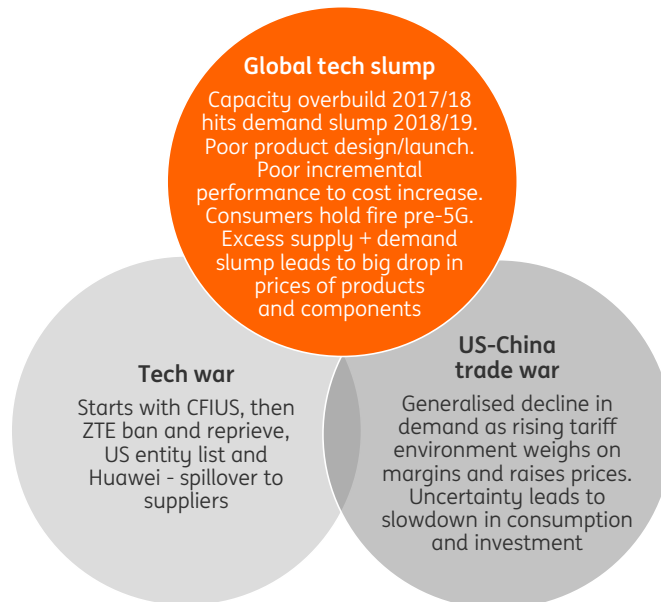
Source: Bloomberg

Where does the trade war and the tech wear fit in?

The Trade War and the tech war

All of this weakness in the electronics sector arose independently from the Trade War. There is a lot of confusion about what is driving economic slowdowns in Asia. And though the trade war is a very real problem for China, for most of Asia, the impacts tend to be indirect. In some cases, like that of Vietnam, economies have capitalised on the trade war by absorbing dislocated businesses. Taiwan has benefited in this way too to some extent. But there is no denying that the trade war is also influencing demand for electronics in profound ways. So, the global tech slump can be viewed as distinct from the trade and tech wars, but influenced by them.

Fig 12 Trade War vs Tech War and electronics slump



Source: ING

Most technology has been exempt from tariffs, thanks to the 1996 IT agreement (ITA)

A further point worth noting is that for the most part, the electronics sector is exempt from any tariffs worldwide. In 1996, The Information technology Agreement (ITA) was concluded by 29 participants at a conference in Singapore. Since then, the ITA has been taken up by 82 countries, covering around 97% of the global trade in electronic products. Participants in the ITA are committed to completely eliminating tariffs on products covered by the agreement. Until the most recent escalation in the trade war in August this year, even Chinese electronics had largely dodged any direct impact from the trade war. And even now, the implementation of tariffs on these goods has been postponed – perhaps indefinitely depending on how current talks progress.

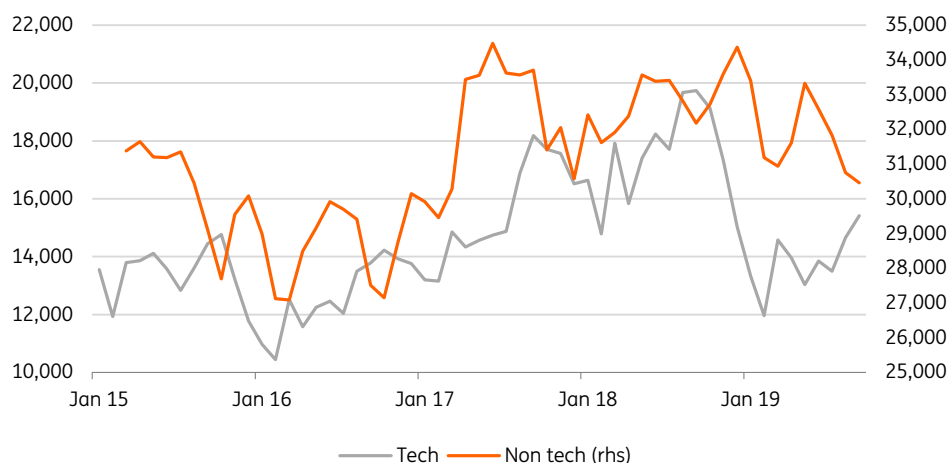
Tech has followed a clearly distinct path from non-tech exports in this period

To highlight this point further, if you compare electronics exports from Asia with non-electronic exports, you can see that although there is a lot of noise in both series, non-electronic exports have essentially been flat since 2017. In contrast, electronic exports have both overshoot other exports, and then slumped relative to them. Korea highlights the issue very well, with roughly flat non-tech exports, but a collapsing tech sector after the earlier boom.

The two causes of weakness should not be confused

If the trade war had been the sole cause of this weakness, we would likely have seen a similar profile in both tech and non-tech data. We don't. The trade war doesn't help. But the electronics / tech slump has a different cause.

Fig 13 Tech and non tech exports - Korea



Source: CEIC

The origins of the electronics slump may pre-date the trade and tech war and be partly independent from both, but it is not isolated from these influences.

The Tech war overlaps the trade war

The Trade war and indeed the tech war, have seen US firms banned from doing business with Huawei (subject to the numerous waivers and extensions given) as well as many other hi-tech Chinese companies, ZTE for example. The US law aimed at preventing Chinese investment in industries with a national security angle, CFIUS, have also disproportionately affected hi-tech firms.

At stake - hegemony in the 5G Universe

Before this, China's electronics manufacturers were likely to be at the forefront of global efforts to unroll a 5G network. Estimates of the amounts required globally to be spent on 5G network development vary, but average at around US\$1tr over several years, with a similar amount spent on investing in IOT infrastructure and services.

That's enough on its own to provide the world with a dent to growth of about 0.5%-1% p.a. while it occurs - ignoring any spillover consumer activity boost from hardware "ditch-and-replacement", which could provide a similar uplift.

Reluctance to invest in 5G is having a genuine impact on global GDP growth...

But the Trade war will make any firm think twice about committing huge sums to make it a reality. This boost to global growth is therefore likely to be less substantial and take longer to deliver, unless the trade and indeed the tech war are resolved rapidly and comprehensively.

...and multiple standards will be less efficient than a single global one

Not only this, but the eventual 5G rollout now looks as if it will not have single global standard, but we may find that we end up with a Chinese standard, adopted across Asia, and a US / European standard for the West. This is a bit like the global satellite navigation standards, split between the US GPS, European Galileo and Russian GLONASS, or even further back, VCR versus Betamax in video recording. Having multiple standards for 5G will limit its reach, and result in a deadweight efficiency loss from duplicated infrastructure and coverage. But better than nothing at all.

An end to the slump?

An end to the global tech slump is realistic

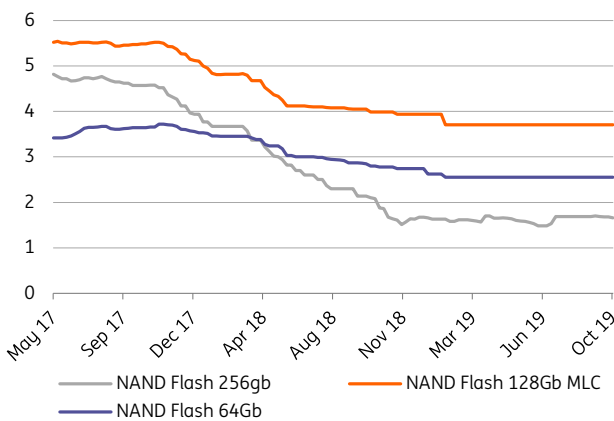
A number of commentators have already called an end to the global tech slump only to see further declines.

But an end is realistic. Much of what we buy these days is consumer electronics, or contains electronic components, so it is realistic to look for the slump in exports and production to eventually reach a point where it coincides with prevailing demand, assuming that this demand is not in free fall, and that the earlier decline was a one-time dip.

We may not be seeing much increase, but the declines are abating

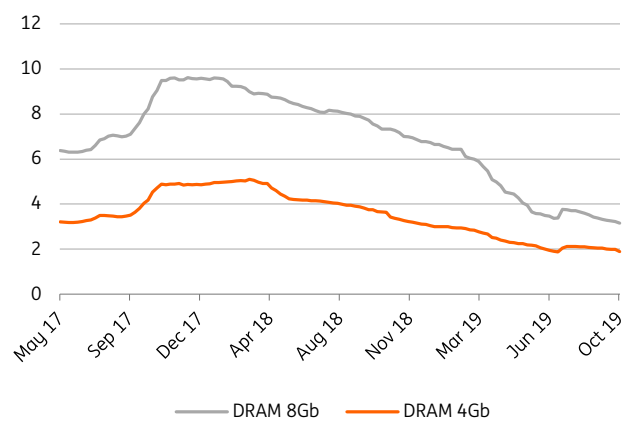
Some of the broad measures of capacity utilisation in the Korean tech sector, respectively electronics and at a more granular level, semiconductors, show signs of rising capacity utilisation, and some stability in unit prices – perhaps even some slight increases.

Fig 14 NAND Flash spot prices (USD)



Source: Bloomberg

Fig 15 DRAM Spot prices (USD)

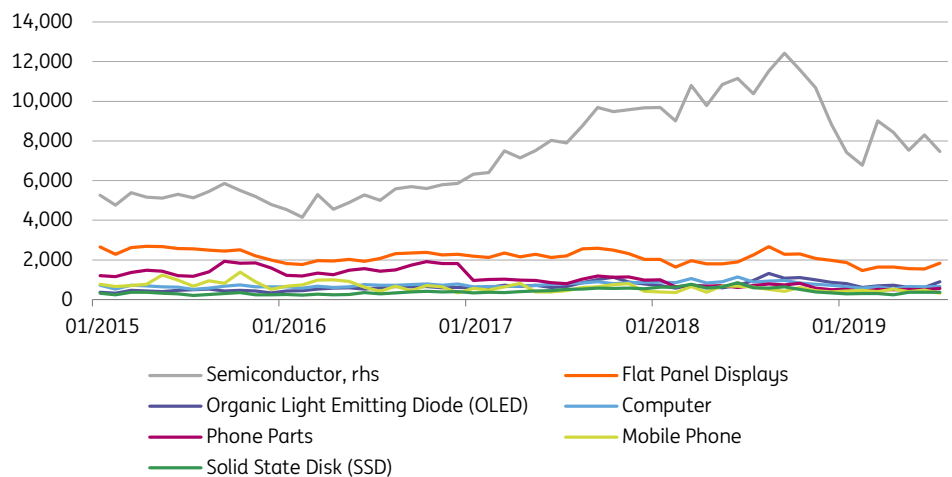


Source: Bloomberg

Singapore tells a similar story to Korea

The same sense of troughing can be seen in some of the most recent data from Singapore, one of the economies that has been hardest hit by the global tech slump, and prices of some component parts are also, if not clearly rising, no longer falling.

Fig 16 Singapore: Semiconductor exports down, but no longer falling



Source: CEIC

A v-shaped recovery is not likely

Industry reports are rife with speculation of an upturn in 2020, and in year-on-year terms, they may be right, in as much as the large negative growth rates in this sector may head towards zero, or even register small positive increases. But for the sort of V-shaped recovery that could stimulate another wave of investment, it is our opinion that we need to see the 5G rollout become more of a reality and tied in with this, some resolution (not just a truce) to the trade and tech wars. We don't believe this is likely until 2021.

This still could be a false bottom

Further caution is warranted as the trade war, and its spread to the electronics sector may be affecting economic behaviour.

For example, there is a possibility that some of the recently more positive data prints in this sector may reflect attempts to front-run impending tariff increases. It is impossible to say for sure, but a resumption of weakness from here would tend to support that hypothesis.

Glimmer of hope in gaming?

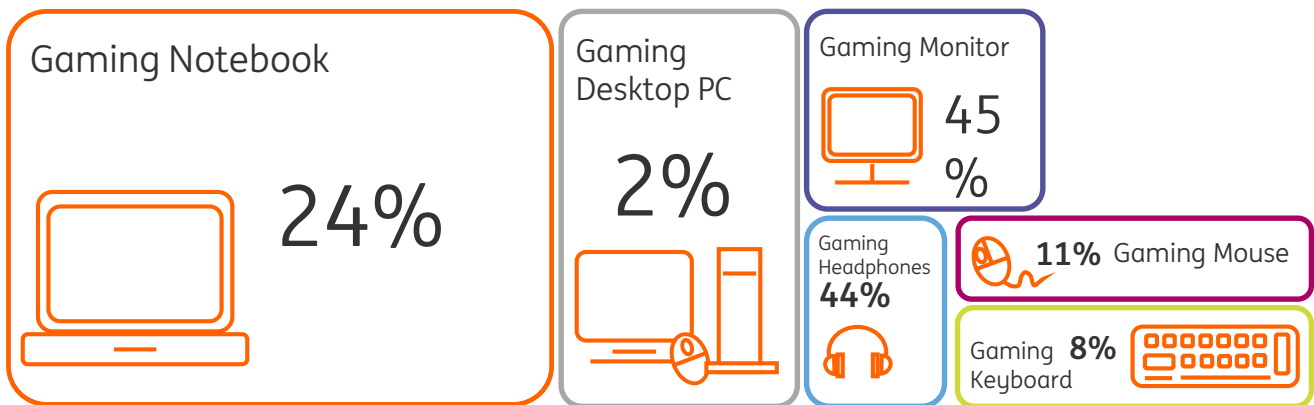
Could gaming herald a recovery?

Whilst much of the story on electronics is negative, there are some glimmers of hope. One of these is the gaming industry. This industry is recording substantial growth rates in sales for specialised gaming kit, in much the same way as crypto mining drove demand for high-end chips, so too does the gaming world.

It is tempting to think so given the growth rates involved...

With top gamers earning as much as top footballers these days (top Esport gamer in 2018, Denmark's Johan Sundstein, earned a reported US\$6.89m according to Wikipedia) and televised competitions getting similar viewing figures to top sports matches (380 million regular Esports viewers globally), this industry needs to be taken very seriously.

Fig 17 Annual sales growth for gaming equipment



Source: GfK¹ ING

...and in time it may be very significant...

The market for gaming laptops and PCs, with higher frequency processing and graphics, together with higher spec monitors and the accompanying paraphernalia – headphones, microphones, keyboards, mice, is providing a helpful offset to the slump seen elsewhere for electronics. Growth rates for such gaming goods can be well into double figures. But as yet, the industry is still too small to make up for the losses elsewhere.

...but for now, it is not big enough to change the overall direction

That may change, though again, it is likely to be revolutions in gaming made possible by 5G including more realistic virtual and augmented reality that will likely give this industry a further, and perhaps massive boost.

Conclusion

The worst of the tech slump has passed – good news for Asia – but a big recovery requires 5G rollout

The trade war has hit Asian growth in 2019, but with the exception of China, the bigger cause of economic weakness has not been the trade war, but the tech slump. There are some emerging signs that the worst for this is over. But upside prospects for this sector remain very limited unless 5G becomes more of a reality. And that is where the trade war is important, because while this still rages, 5G remains a distant prospect.

¹ GfK Consumer electronics, today and tomorrow. 26 April, 2019

Appendix: Country by country

Korea

Korea is a technological powerhouse...

Korea has one of the world's most powerful technology industries. Samsung and SK Hynix are respectively the 2nd and 6th biggest semiconductor companies in the world according to investopedia, although of course Samsung does far more than just make semiconductors.

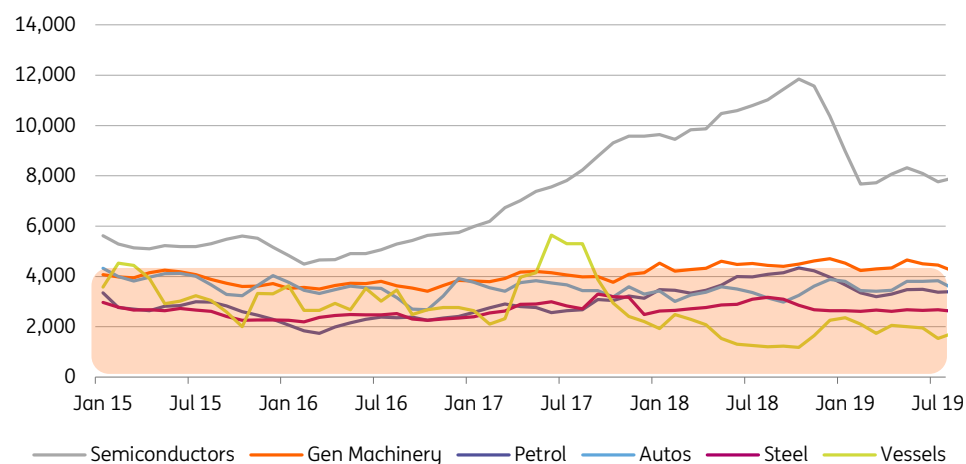
...though that is not all it does

Besides technology, South Korea has highly developed and diverse industrial base, including autos, shipping, and chemicals. But in recent years, it is the swing in the electronics industry that has driven South Korean production and exports, while exports and output of other industries has remained fairly steady.

Some semiconductor prices look to be finding a floor

Recently, prices of some Korean semiconductor products look as if they may be bottoming out, which could be a sign that excessive inventories have been worked down following sharp production cutbacks and fire sale prices. New handset offerings may be helping, though not on the same scale as in the past. Where once electronics was about all that was driving the Korean economy forwards, now it is among several items that are pulling it down.

Fig 18 Korea: Semiconductor exports down, but no longer falling (US\$m)



Source: CEIC

BoK has been reluctant to ease policy rates, though has belatedly begun to act

The Bank of Korea did cut rates by 50bp this year, but this only takes them to 25bp below where rates were before the poorly timed hike they implemented in November last year. We may see rates cut further, though we do not believe by much. The government, in contrast, has published an expansionary budget for 2020, and this might provide more help to the beleaguered economy until the electronics industry recovers.

China

The Tech war has encouraged technological self-sufficiency in China

China's electronic products are partly imported and partly produced domestically. The Tech war has had some impact on imports of electronic parts, especially state-of-the-art chips. This has forced Chinese chip makers to produce their own advanced chips. So far this is working though not perfectly. The Chinese government has created a fund to invest in R&D with the aim of staying at the cutting edge of technological advancement.

A more damaging factor for electronics in China in 2019 is the low demand for new smartphones worldwide. This has put severe pressure on industrial production. As such exports and imports of electronics have been in year-on-year contraction for the whole of 2019.

China is ahead of the game on 5G

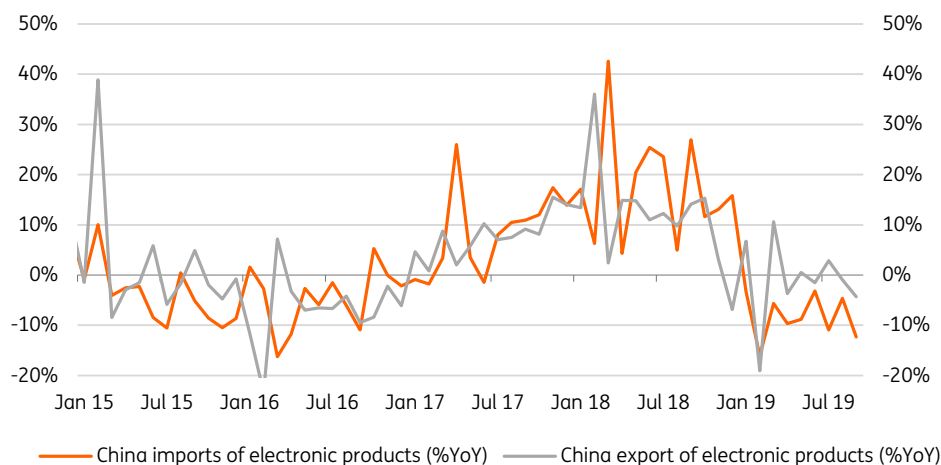
We expect this may change when more locations worldwide start to upgrade their telecommunications from 4G to 5G. China started 5G in some cities in 2019, and there

Relocation out of China is growing trend, and Vietnam is the biggest gainer

are domestic brands that offer new smartphones which can run in a 5G environment. This has boosted some domestic sales of smartphones. Industry analysts believe that sales will be stronger in 2020 in China as the government has planned nation-wide 5G coverage in 2020.

But before 5G comes to the rescue, foreign-owned electronic factories might have moved to other locations in Asia, mostly to Vietnam in the case of LG and Samsung, to avoid tariffs imposed by the US on imports from China. This will reduce orders for Chinese electronic factories severely dampening future exports. Though this may pave the way for Chinese electronics manufacturing to move up the technology ladder, it remains to be seen whether China can indeed master the very high end of this technology.

Fig 19 China exports and imports of electronic products YoY%



Source: ING, Bloomberg

As well as hardware, software restrictions are causing China problems

Another tech-related pressure, though not hardware, is the software installed in smartphones. US companies are prohibited from selling their products, including software (eg, Apps) to Chinese companies on the US entity list. This has pushed Chinese smartphone brands to start developing their own apps for smartphones. Again, similar to the self-developed chips, this is by no means a perfect solution, and there are still considerable gaps. But the new apps do run on the newly offered 5G smartphones.

Taiwan

Taiwan's reliance on Apple has not been helpful at this time

Taiwan produces a variety of electronic parts, mostly for Apple. From the phone cameras to the screen and also packaging. Part of Taiwan's problem has stemmed from relying too much on a single brand. And it is understood that iPhones will only have a 5G version by autumn 2020, a year after some other smartphone rivals.

As a result, demand for the new iPhone 11 has been decent, but not explosive. Apple is reported to have sold more than 217 million handsets in 2018. Sales of the iPhone 11 are reported to have been 75 million so far in 2019, but overall sales volumes may still struggle to match those set last year^{2, 3}

If Taiwan continues to rely too much on a single brand for manufacturing and exports of electronic products, it could fall into a low sales trap until Apple releases a 5G version of the iPhone. Between now and autumn 2020, Taiwan could suffer from slower exports and industrial production than other locations in Asia that produce 5G smartphones.

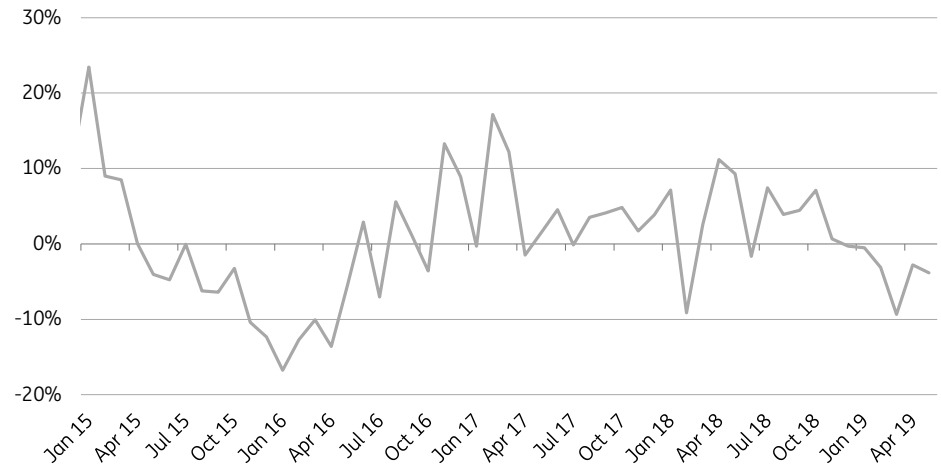
² <https://www.bloomberg.com/news/articles/2019-10-14/apple-s-lower-prices-users-aging-handsets-drive-iphone-demand>

³ <https://www.cultofmac.com/596840/apple-2018-by-the-numbers/>

There is some relocation back from Mainland China to Taiwan, but not yet on a big scale

Taiwan's government has implemented preferential policies to attract Taiwanese manufacturers to move their Mainland China factories back to Taiwan. Comments from factory owners so far have been negative as basic infrastructure for setting up factories is absent (roads, water and electric supplies, labour and talent). We expect Taiwan's government will have to use a lot of fiscal resources to satisfy factory owners' demand, and even then, it will take years to meet their demand. Essentially the policy to move factories away from Mainland China to Taiwan has yet to be successful on a large scale.

Fig 20 Taiwan: Electronics export growth (YoY%)



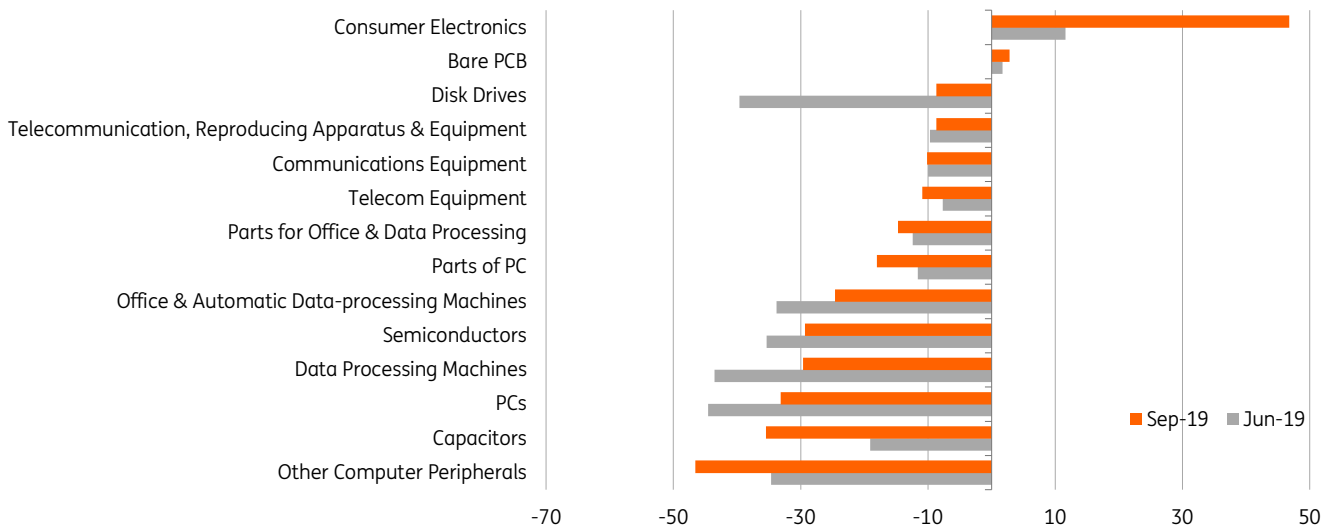
Source: ING, CEIC

Singapore tech – semiconductors dominate

Singapore: Hit hard

Singapore's electronics industry is often described, quite inaccurately, as being dominated by disk drive production. That may once have been true, but these days, although it produces a wide array of electronic components, PCs and parts, the overwhelming majority of Singapore's production and exports of electronics is semiconductors.

Fig 21 Singapore: semiconductor exports falling fast, but slightly slower in recent months



Source: CEIC

Singapore was the second country in the world to enter the semiconductor foundry business, subsequently generating over a dozen semiconductor fabricators (fabs). All of Singapore's foundries are owned by foreign companies: Micron (US), GlobalFoundries (US), UMC (Taiwan), NXP Semiconductors (Netherlands), STMicroelectronics (France-Italy), Infineon (Germany) and Skyworks (US).

The semiconductor plunge is slowing

Like Korea, Singapore's electronics exports have plunged, with rates of nearly -30% YoY as recently as July. The annual rate of decline appears to be abating. Exports of consumer electronics, for example, have started to grow again - though this may reflect front-running of impending tariffs. September export figures were slightly less negative (-29.3% YoY). But this is choppy data and year-on-year comparisons can be misleading, especially as seasonal production and export norms seem to have changed.

Semiconductors have not always been the fastest declining group within the electronics subset. But given their size relative to other products (44% of the total electronics total), they account for most of the overall decline.

Local policy offsets have been limited and implemented only slowly

Local policy is being changed very slowly, with the MAS only now reducing the appreciation path for the Singapore dollar. We anticipate only minimal fiscal offset to slowdowns in this industry.

Malaysia: Is electronics strength fading?

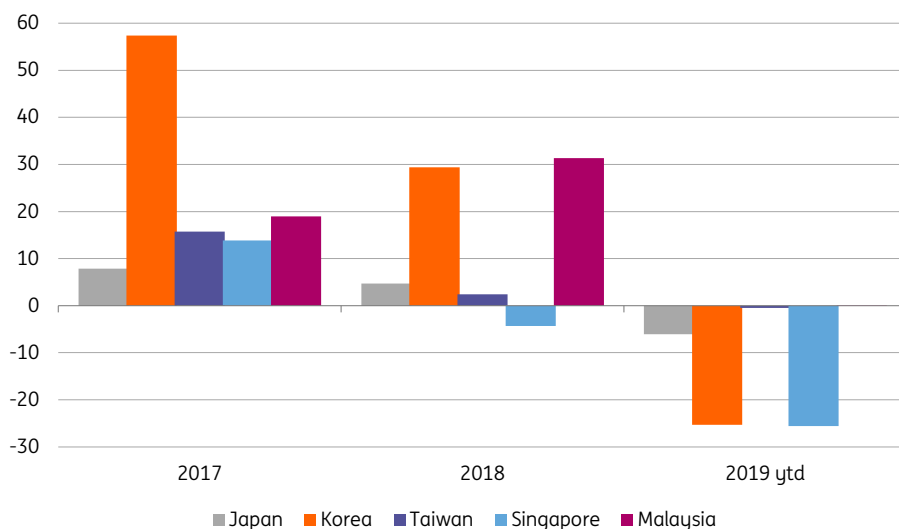
Malaysia has outperformed some of its SE Asian rivals...

Malaysia's semiconductor exports have performed better than expected this year in the face of the global technology slump. They have stopped growing. But they aren't yet crashing like some of the heavy-weights in this field: Korea and Singapore. The year-to-date performance puts Malaysia closer to Taiwan than other Asian exporters, which has benefited from relocation of manufacturing from China.

...as it has moved up the value chain...

If anything, we sense Malaysia's relative strength as a move up the electronics value chain, taking away some market share from other Asian countries. Not necessarily from Singapore, though Malaysia appears to be gaining some edge here too, possibly reflected in a big surge in foreign direct investment inflows in the northwest coastal states as well as a surge in semiconductor manufacturing and exports this year in contrast to sharp fall in Singapore. If so, this outperformance should continue even if recent strength wears off in a global downturn.

Fig 22 Asian semiconductor exports (USD, % YoY)



Source: CEIC

...but it has not escaped the slump entirely

That said, the August trade data revealed some tapering of electronics strength, a sign that it's going to be increasingly tough to buck the global trend in an entrenched tech war.

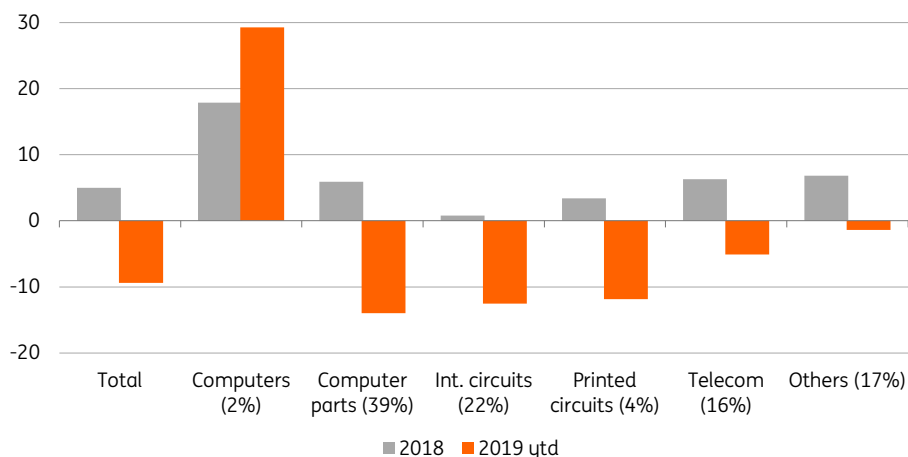
Thailand is not one of the biggest electronics players, but has still seen exports hit by the tech slump

Thailand: Not a major player, not insignificant either

With a 15% share in total exports, electronics have a relatively small presence in Thailand compared to some other Asian countries. Yet, it's not an insignificant contributor to the country's total export growth – nearly a quarter of the negative swing in the headline export growth from +6.9% in 2018 to -2.1% year-to-date 2019 is explained by the electronics export slump (-9.4% from +5.0%).

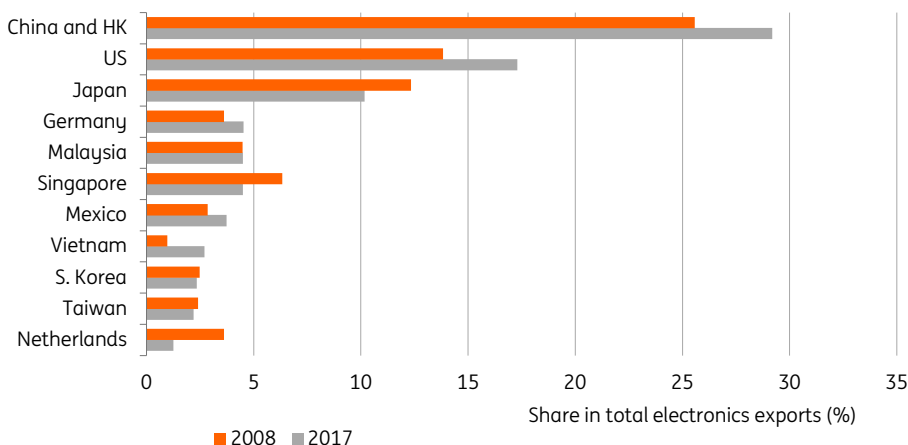
And a large chunk of electronics exports is concentrated in intermediate products – computer parts, integrated and printed circuits, etc. – rather than end-products. Bucking the electronics slowdown, exports of computers swelled to 29% YTD from 18% in 2018, though it's outweighed by large negatives in electronics parts as well as in telecom equipment.

Fig 23 Thailand – Electronics export growth (% YoY)



Note: Figures in parenthesis are weight in total electronics exports.
Source: CEIC

Fig 24 Thailand – Electronics export destinations



Source: CEIC

Like Vietnam, though not as much, Thailand is benefiting from relocation of production from China

While these trends are expected to stay in place during the rest of the year, and possibly beyond, hopes rest on trade diversion resulting from the ongoing trade war between China and the US, and also between Korea and Japan, which is directly hitting the electronics sector. However, Thailand also faces stiff competition from neighbouring Vietnam, which, with relatively low production and labour costs and strong growth prospects over a much longer-term, offers better relocation prospects for manufacturers affected by the trade spat. Adding to the downside is continued domestic political uncertainty with the ruling administration lacking a parliamentary majority to kick-start the sagging economy, while excessive Thai baht appreciation continues to be a key deterrent for exporters.

Almost 55% of Philippine exports are electronics...

...but the low value added of this production has spared the Philippines form the worst of the tech slump

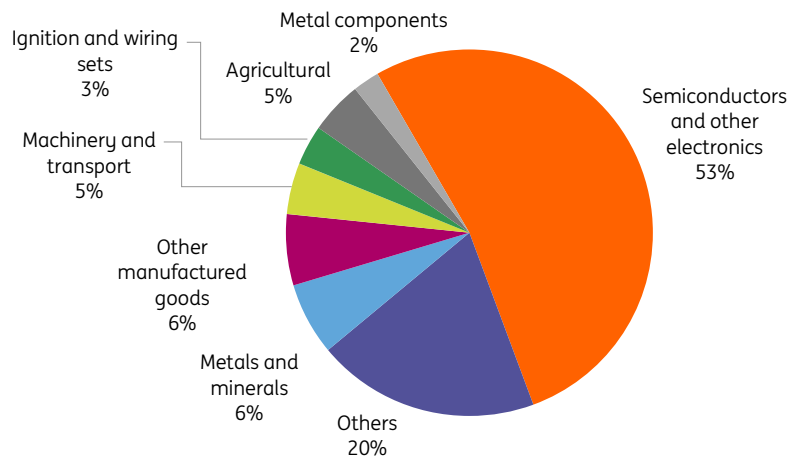
Philippines: All eggs in the semiconductor basket

The Philippine export sector posted a surprise rebound in 2019, stringing together 5 months of expansion despite the technology slump coupled with general anxiety from the protracted trade war. One potential reason for this could be the recent pick-up in growth of exports to the United States, posting a 9.4% expansion year to date and 11.6% growth over the last 18 months since June 2019.

Exports in the Philippines are highly dependent on electronics as they constitute 58.53% of the total sector. The bulk of exports classified as “electronics” are low value-added semiconductors: electrical diodes and transistors, the basic component used on circuits and motherboards. These components comprise 42.88% of total exports and are sent mainly to Korea, Taiwan, Japan and China.

We expect exports of semiconductors to contract in the coming months as imports of “materials for manufacture of electrical equipment”, basically raw materials used in the production of electrical diodes, posted a 9.5% decline year to date. Manufacturers are likely cutting back on imports of the raw materials for production given slowing demand for finished electronic products, which could in term dampen prospects for demand for semiconductors from the Philippines.

Fig 25 Philippine exports by type 1H 2019



Source: Philippine Statistics Authority

Indonesia: The odd one out

Exports of electrical equipment from Indonesia account for roughly 5.4% of total non-oil exports with the bulk of these products headed for Singapore and the United States. The roughly US\$8.8bn subsector has seen a declining trend in terms of growth and has lagged the rest of the export base, which is heavily dependent on raw material export.

President Jokowi has vowed to address this development by calling for reforms to help foster higher value-added finished product exports to lower Indonesia’s overreliance on commodity exports. Until that time however, Indonesia remains a small player in the electronics scene with exports of video displays and integrated circuits. In the current environment, that has enabled Indonesia to escape the worst effects of the global tech slump.

Indonesia is not a big electronics producer...

...which has probably saved it from seeing a more dramatic slowdown

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