FEATURE ARTICLE

WHAT IS DRIVING THE STRONG GROWTH IN ELECTRONICS PRODUCTION?

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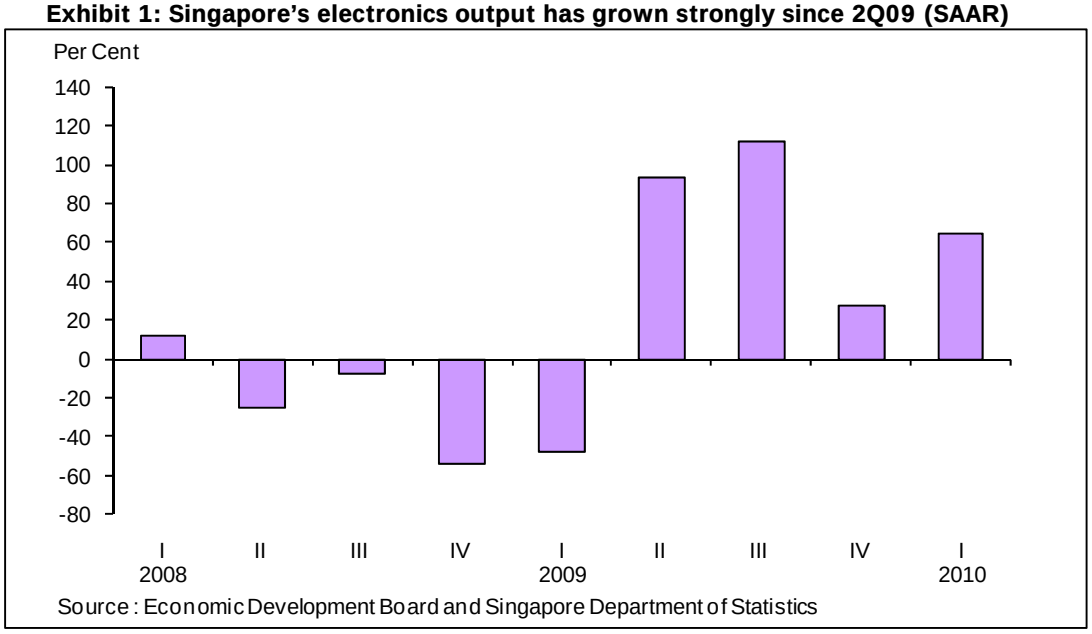
BACKGROUND

The global electronics industry has outperformed many analysts' expectations in recent months. Global semiconductor sales have increased for ten consecutive months since March 2009, with growth driven mainly by sales in the Asia-Pacific region. As a result of the better-than-expected growth, many analysts have revised upwards their 2010 forecasts for the global electronics industry. For example, in February 2010, Gartner raised its forecast of the 2010 semiconductor revenue growth from 13 per cent to 20 per cent.

In line with global trends, Singapore has also experienced a strong rebound in electronics production. Since the second quarter of 2009, electronics production has grown every quarter on a quarter-on-quarter seasonally-adjusted basis (Exhibit 1).

Exhibit 1: Singapore's electronics output has grown strongly since 2Q09 (SAAR)



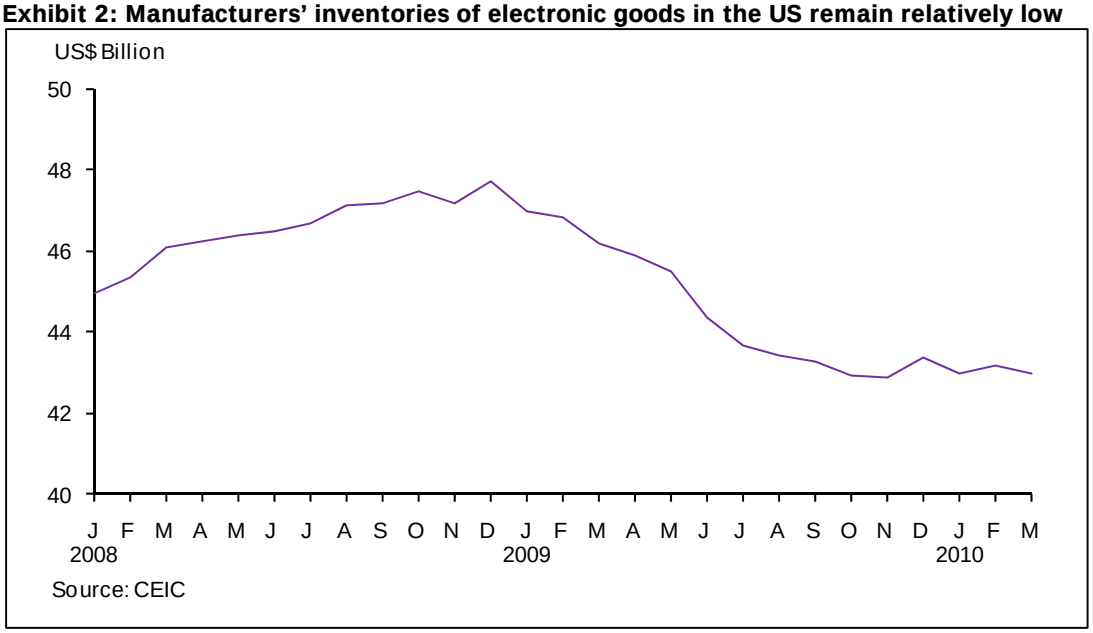
Source : Economic Development Board and Singapore Department of Statistics

While this strong growth can partly be explained by low base effects, the sustained nature of the growth may have come as a surprise to some analysts for two reasons. First, given the sluggish recovery in the G3 economies, final demand for electronics, particularly consumer demand, has yet to rebound strongly. As the final demand for most of our electronic products has traditionally come from the G3 economies, there appears to be a divergence between the growth in electronics output and the recovery of final demand in the G3.[1] Second, although it has been suggested that the growth in electronics may be driven by re-stocking activities, this hypothesis does not seem to be strongly supported by inventory data. Inventories of electronic products in the US remain relatively low (Exhibit 2). According to iSuppli,

[1] A good summary of the literature as well as an analysis of China as a source of final demand can be found in Teo, J (2009), "How Reliant are East Asian Economies on Final Demand in China and the G3", Economic Survey of Singapore, First Quarter 2009.

semiconductor suppliers globally are also keeping less stock than before the crisis, with days of inventory expected to decline to 68.3 by the end of the first quarter of 2010, from 74.6 in the third quarter of 2008. Furthermore, stockpiles are at very low levels, with shortages in the market seen for some chips such as NAND flash memory.

Exhibit 2: Manufacturers' inventories of electronic goods in the US remain relatively low



This paper therefore attempts to shed light on the factors driving the strong growth in electronics production globally and in Singapore. In particular, we examine trends in consumer and corporate spending in the US and China.

FACTORS DRIVING STRONG ELECTRONICS GROWTH

Sources of Final Demand

The US has traditionally been the key source of final demand for electronic products. In spite of the severity of the downturn in 2008/2009, the US information technology (IT) market remains the biggest and most sophisticated in the world, accounting for 25 per cent of global IT spending in 2009. US IT spending can be further divided into consumer IT spending and business IT spending, with the latter being more than five times the size of the former.

The recent financial crisis had caused both consumer and business IT spending in the US to plunge. While consumer spending in electronics appears to have picked up in recent months, it remains well below pre-crisis levels (Exhibit 3). In contrast, business spending on IT equipment has recovered strongly, and has surpassed pre-crisis levels in the first quarter of 2010 (Exhibit 4). This was largely driven by the corporate IT replacement cycle and the resumption of investments previously postponed, as business conditions and earnings improved. While increased business IT spending in the US is likely to have contributed to the growth in global electronics production, it is unlikely to be the sole factor.

Exhibit 3: US electronics retail sales are recovering but remain well below pre-crisis level

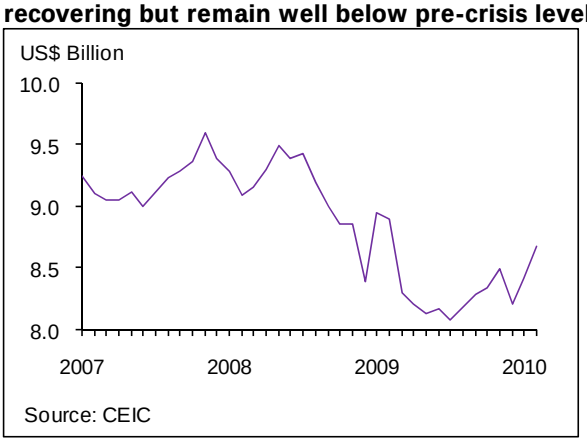
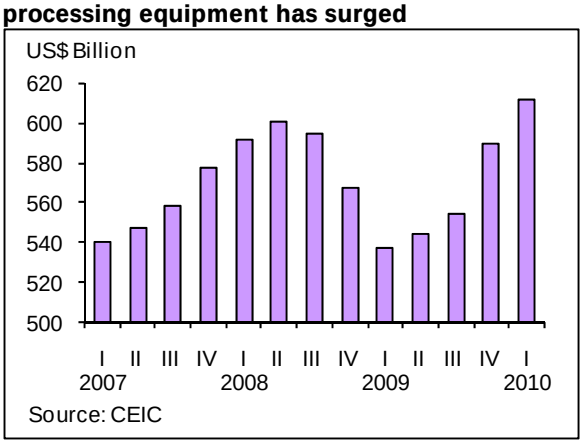


Exhibit 4: Business spending on information processing equipment has surged



The other key factor is the rise in the consumption of electronic products in China in recent years. There are three pieces of supporting evidence. First, in terms of trade flows, China's imports of final electronic products (e.g., computers, cameras and handphones) have grown faster than its imports of intermediate electronic goods that are used for further processing and assembly since the start of 2009 (Exhibit 5).

Second, proprietary data from Gartner shows that end-user spending on personal computers (PCs) in China has accelerated, doubling from US$16 billion in 2005 to more than US$33 billion in 2009. The increase was driven primarily by business spending, as well as home-user spending (Exhibit 6). As a result, China's share of global PC spending rose from 8.1 per cent in 2005 to 15 per cent in 2009, in contrast to the fall in US' share from 29 per cent to 23 per cent. It is also interesting to note that end-user spending on PCs in China increased 14 per cent in 2009, despite the global economic downturn.

Third, retail sales of communication appliances and household electric and video appliances in China have risen strongly.[2] Between 2000 and 2009, they grew by 33 per cent per annum and 17 per cent per annum respectively (Exhibit 7).

Exhibit 5: Imports of final electronic products have grown faster than that of intermediate electronic goods in China

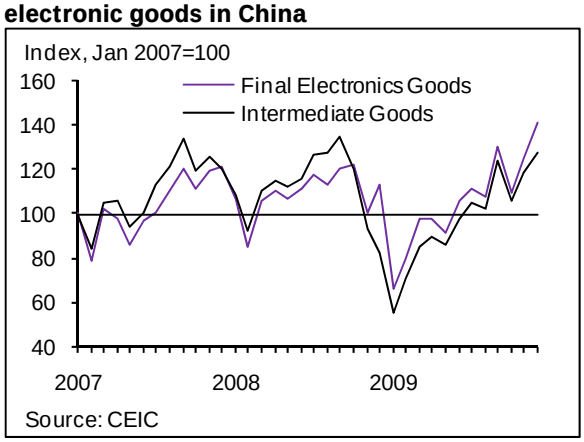
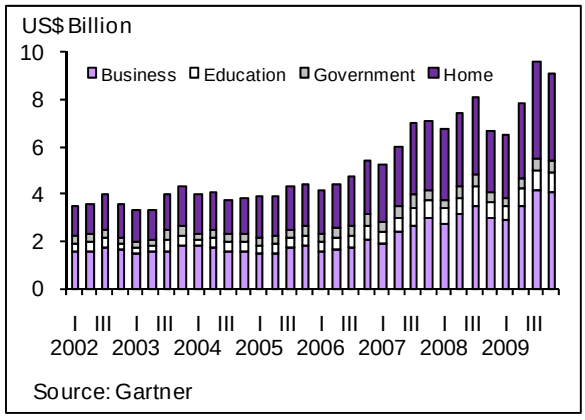


Exhibit 6: China's spending on PC accelerated after 2005



[2] The retail sales figures are based on sales recorded by enterprises of designated size.

Exhibit 7: Retail sales of consumer electronics in China accelerated in recent years

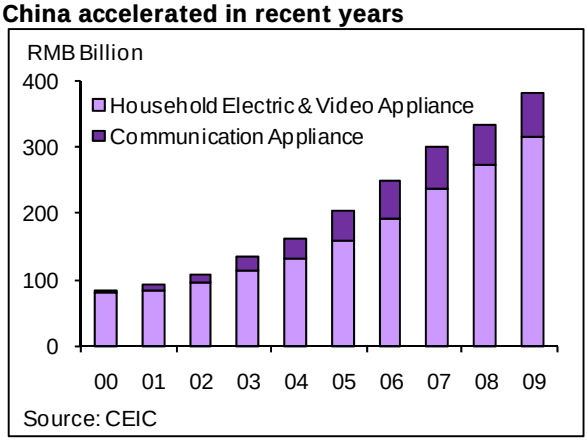
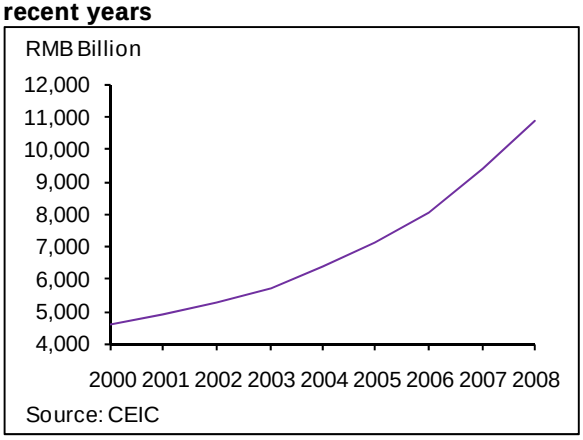


Exhibit 8: Private consumption in China has risen in recent years



Drivers of Final Electronics Consumption in China

What are the drivers of the rise in final electronics consumption in China? We highlight three drivers. The first is the rise of the Chinese middle class. China's middle class is expected to form 25 per cent of the population by 2010, up from 13 per cent in 2005.[3] The expansion of the middle class has led to a strong growth in private consumption, including consumption of electronic products. Between 2000 and 2005, private consumption in China grew at a rate of 9.2 per cent per annum, from RMB 4,585 billion (US$554 billion) to RMB 7,122 billion (US$869 billion) (Exhibit 8). After 2005, private consumption growth accelerated to 15 per cent per annum to reach RMB 10,839 billion (US$1,560 billion) in 2008.

The second driver is the rise in business formation in China. Between 2005 and 2008, the number of industrial enterprises in China rose from 270,000 to 430,000 (16 per cent per annum). With more enterprises being formed, business spending in IT (e.g., PCs and servers) has also increased. The growth in business spending on PCs can clearly be seen in Exhibit 6.

While the two drivers highlighted above are longer-term drivers that are expected to sustain growth in electronics final consumption going forward, there is also a third and shorter-term driver at play. This is the fiscal stimulus package introduced by the Chinese government in 2008, a key component of which is the expansion of a programme to subsidise the purchase of electronic goods by rural farmers (also known as "Electronics go to farmers subsidy programme").

The electronics subsidy programme began on a trial basis in three agricultural provinces of Shandong, Henan and Sichuan, as well as Qingdao City from December 2007 to May 2008. It was later extended to 14 provinces, autonomous regions and municipalities in December 2008 and eventually to all rural areas in February 2009. The programme allows rural households to claim a 13 per cent subsidy from their local township government for the purchase of appliances such as colour television sets, refrigerators, washing machines, mobile phones, personal computers and air conditioners, with limits of up to two items per household. Both local and foreign brands are included as designated brands under the programme. In February 2010, the Chinese government extended the duration of the programme to 2012, and also raised the price caps for the items eligible for subsidy by 25-100 per cent.

Gartner estimates that the programme will increase sales of household electronics by 20 per cent. In total, sales of 600 million home appliances, amounting to US$230 billion, is expected. Based on the current average semiconductor content in global electronic systems of 21 per cent, this programme is also expected to result in US$50 billion of semiconductor consumption.

[3] China classifies those earning between 60,000 Yuan to 500,000 Yuan per year as middle class. Source: National Bureau of Statistics of China.

Has Singapore Benefitted from China's Increased Consumption of Electronics?

From 2003 to 2009, the share of Singapore's domestic exports in electronics to the US fell from 23 per cent to 16 per cent. Over the same period, the share of our electronics exports to China (including Hong Kong) grew from 13 per cent to 23 per cent, effectively overtaking the US' share in 2008 and 2009 (Exhibit 9).

Plotting Singapore's electronics output growth against the growth in US' imports of electronics, we can see that the two are generally strongly correlated over time (Exhibit 10). However, in the last two years, the divergence between the growth in US electronics imports and that of local electronics production has become very stark. In contrast, the correlation between the growth in China electronics imports and that of local electronics production has become much closer (Exhibit 11). However, it may be premature to declare that Singapore's electronics sector has de-coupled from the US just based on data in the last two years.

Exhibit 9: China's share of Singapore's electronics domestic exports has overtaken US' share

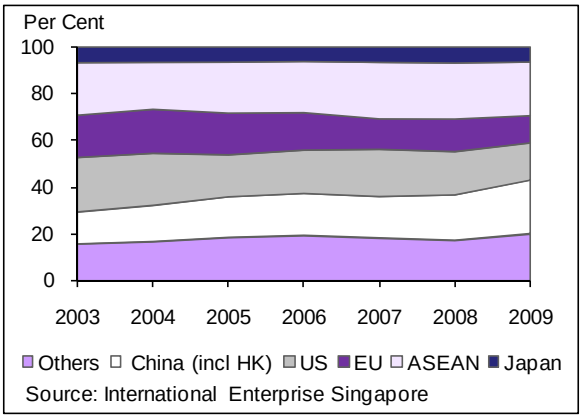


Exhibit 10: Local electronics output follows US electronics imports, except in recent periods...

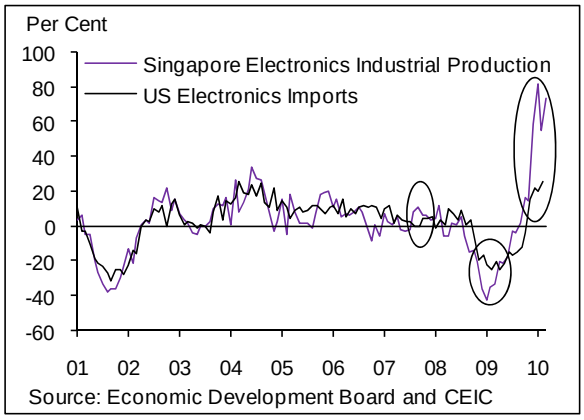
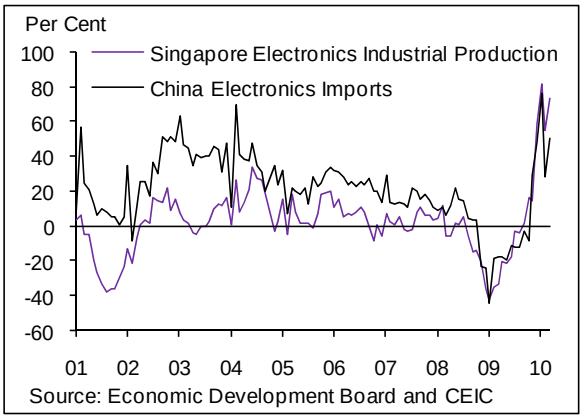


Exhibit 11: ... where it has become more correlated to China electronics imports



Given that Singapore produces a wide variety of electronic products for different customers, some of which are highly commoditised while others are more specialised, it is not easy to pin-point a single product segment that is driving the electronics recovery nor trace the final demand to any single destination (be it the US or China). Indeed, for this cycle of electronics recovery, Singapore appears to be benefitting from both US demand (arising from business spending) and China's demand (arising from both final consumer and business spending).

CONCLUSION

Apart from the low base effect, the strong growth in Singapore's electronics output in recent quarters can primarily be attributed to a surge in demand as a result of increased business IT spending in the US, as well as China's increased consumption of electronic products. The latter is not just due to long-term drivers like the rise of the middle class and new business formation in China, but also the massive stimulus package implemented by the Chinese government.

Contributed by:
Lee Kok How, Economist
Soo Kuo Tong, Economist
Economics Division
Ministry of Trade and Industry

REFERENCES

Teo, J (2009), "How Reliant are East Asian Economies on Final Demand in China and the G3", Economic Survey of Singapore, First Quarter 2009.