



EXPLAINING THE DIVERGENCE BETWEEN GDP AND TRADE GROWTH

ABSTRACT

The divergence between Singapore's economic and trade growth over the past year is mainly due to two factors, viz. strong growth in non-goods exporting sectors and differences in the measurement of real GDP and total trade.

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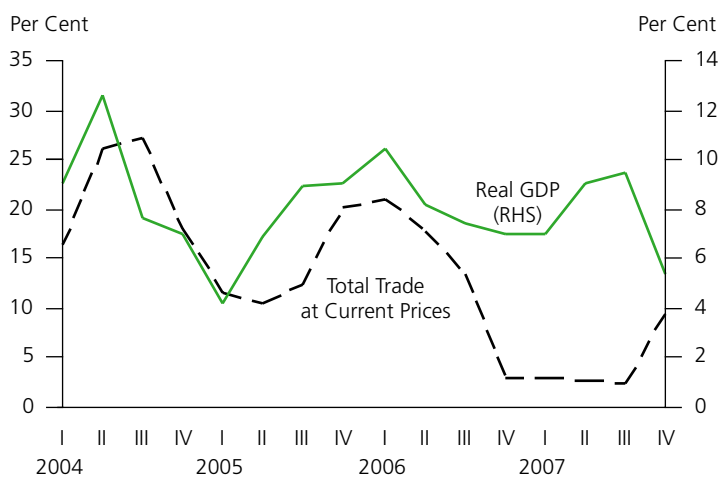
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INTRODUCTION

In the past few years, headline GDP growth and total trade growth have tended to move in tandem with each other. High levels of GDP growth have typically corresponded with high trade growth. However, GDP growth outpaced trade growth in the final quarter of 2006 and most of 2007. While real GDP grew at similar rates in 2006 and 2007, total trade growth fell sharply from 13 per cent in 2006 to 4.5 per cent in 2007 ([Exhibit 1](#)).

REAL GDP AND TOTAL TRADE GROWTH

[Exhibit 1]



The views expressed in this paper are solely those of the authors and do not necessarily reflect those of the Ministry of Trade and Industry or the Government of Singapore.

BROAD REASONS BEHIND THE DIVERGENCE IN GDP AND TRADE GROWTH

(1) Stronger performance of non-goods exporting sectors

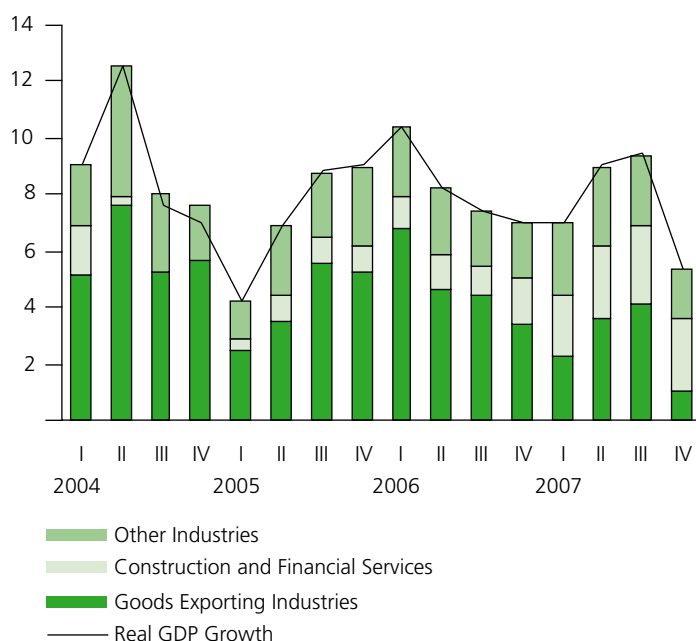
In 2007, the non-goods exporting sectors, particularly financial services and construction, saw better performance than the goods exporting sectors (viz. manufacturing and wholesale trade). The financial and construction sectors enjoyed strong growth of 18 per cent in 2007, outpacing the 6.4 per cent expansion of manufacturing and wholesale trade (Exhibit 2). As a result, the percentage contribution to GDP growth from manufacturing and wholesale trade dropped from 58 per cent in 2006 to 36 per cent in 2007.¹ As financial services and construction do not contribute to merchandise exports, their strong performance did not translate into growth in the headline trade figures.

Financial and construction sectors outpaced manufacturing and wholesale trade.

REAL GDP GROWTH BY BROAD SECTOR

[Exhibit 2]

Percentage Contribution to Real GDP Growth



¹ Wholesale and retail trade (W&R) sector figures are used to calculate growth contribution. Wholesale trade accounts for 88 per cent of W&R sector in 2007.

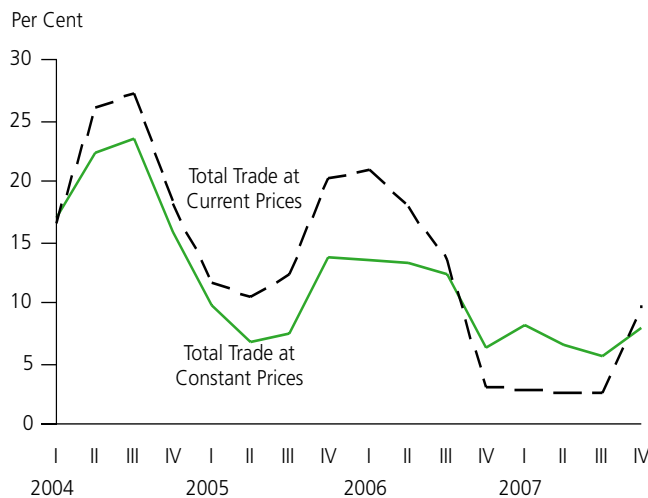
(2) Difference in measurement of Real GDP and Total Trade

The second reason for the divergence is the difference in the measurement of real GDP and total trade. Real GDP is measured at constant prices (i.e. in volume terms) while total trade is measured at current prices (in value terms).

If price changes were small, the difference between GDP and trade growth would not be as large. However, there was an ongoing decline in semiconductor prices from fourth quarter of 2006 onwards due to increased competition and excess capacity in the global electronics market. The drop in electronic prices dragged down total trade growth significantly as electronics trade accounted for about 40 per cent of total trade. Although prices of oil and other primary commodities increased in 2007, they were insufficient to offset the decline in electronic prices. As a result, the growth in total trade at current prices slowed to 4.5 per cent in 2007. If prices were held constant, total trade would have grown by a stronger 7.0 per cent ([Exhibit 3](#)).

TOTAL TRADE GROWTH AT CONSTANT AND CURRENT PRICES

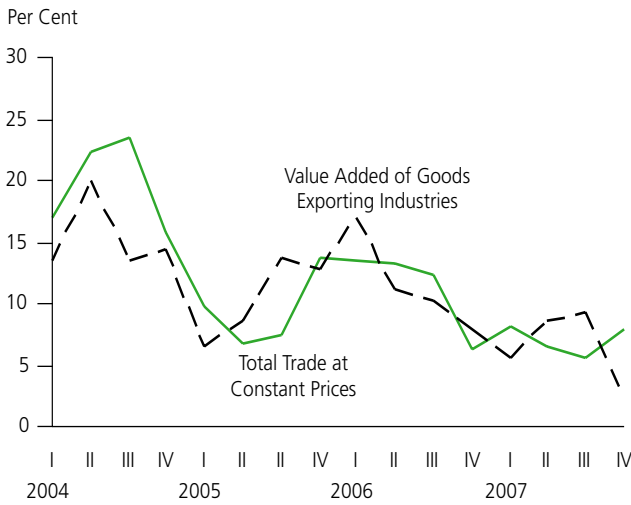
[Exhibit 3]



A comparison of total trade in volume terms (with prices held constant) and the real value added of goods exporting industries shows that they move roughly in tandem ([Exhibit 4](#)). This comparison removes the effects of price changes and the non-good exporting industries.

GROWTH OF TOTAL TRADE AT CONSTANT PRICES AND VALUE ADDED OF GOODS EXPORTING INDUSTRIES

[Exhibit 4]



TRENDS IN THE ELECTRONICS INDUSTRY

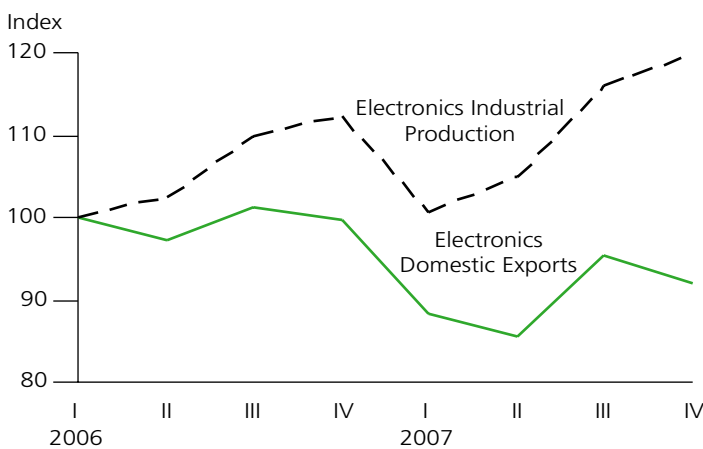
Price compression led to a fall in value despite a rise in volume...

We now turn to examine the electronics industry in greater detail as it accounts for the lion's share of our goods exports. Headline data on electronics domestic exports (DX) show a year-on-year contraction of 9.3 per cent². The contraction in electronics DX over the past year came about despite the fairly modest growth in electronics production of 4.0 per cent. As illustrated in Exhibit 5, the divergence between electronics DX and electronics production widened significantly in 2007.

Contraction in electronics exports despite growth in production.

ELECTRONICS DOMESTIC EXPORTS HAS BEEN DECLINING EVEN AS ELECTRONICS PRODUCTION HELD STEADY

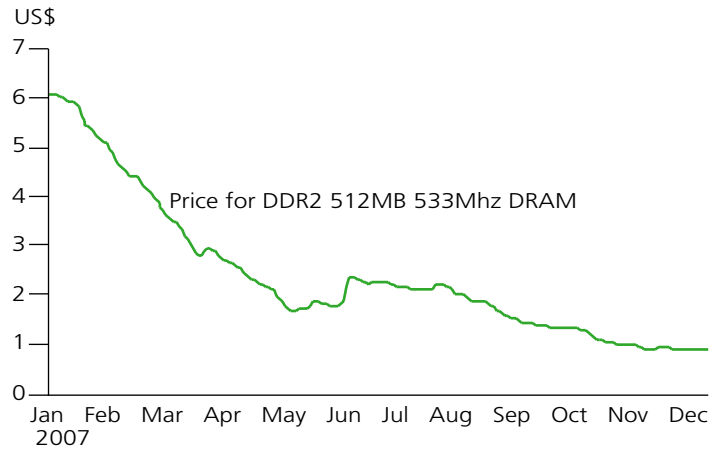
[Exhibit 5]



² In this article, electronics exports are defined as those under the Standard International Trade Classification (SITC) codes of 75, 76 and 776. These categories are used as export price indices are only available at this level of data, which allow real export value to be calculated.

DRAM PRICES PLUNGED DRAMATICALLY IN 2007

[Exhibit 6]



Source: Bloomberg

Price declines were particularly evident in electronic chips

Intense price competition, especially in memory chips, emerged as one of the key trends in the global electronics industry in 2007. The prices of DRAM, microprocessors, and to a certain extent NAND Flash memory fell dramatically as a result of a supply glut and price wars between major manufacturers. The price of a DDR2 512 Mhz 533 DRAM chip declined more than 80 per cent since the beginning of 2007 ([Exhibit 6](#)).

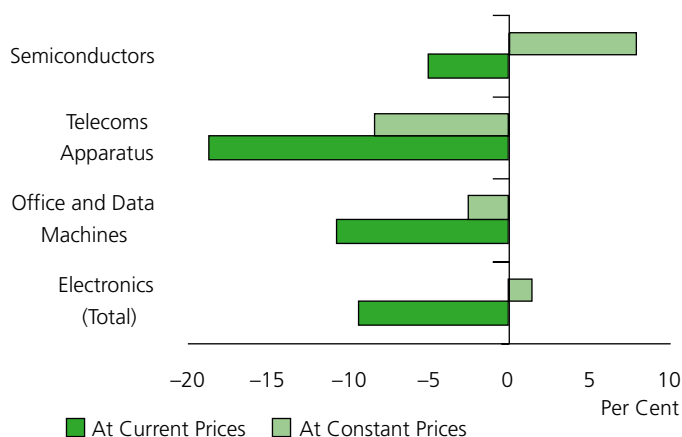
Price compression affected major electronics segments

All major segments of our electronics exports were affected by price compression, which shaved around 8 to 12 percentage points off the growth in each segment. Semiconductor DX³ at current prices fell by 5.0 per cent despite growing by 7.9 per cent in real terms. As semiconductors account for close to half of our electronics DX, price compression in this segment had a substantial impact on overall electronics DX performance ([Exhibit 7](#)).

³ Throughout this article, when referring to the statistics for 'semiconductors', the figures for the 'electronic valves' segment of electronics exports (SITC 776) is used. This broader classification is used as export indices are not available at a finer level. About two-thirds of 'electronic valves' DX comprises "Integrated Circuits", the production of which is classified under Semiconductors in the Singapore Standard Industrial Classification (SSIC).

PRICE COMPRESSION AFFECTS ALL SEGMENTS OF OUR ELECTRONICS DOMESTIC EXPORTS

[Exhibit 7]



Industry data corroborated trade value decline

The price compression picked up in the trade data was corroborated by a divergence between unit shipments and revenue/profit growth in several companies. For example, a local foundry reported a year-on-year double-digit percentage decline in average selling prices of wafers in the fourth quarter of 2007 was accompanied by wafer shipments rising more than 25 per cent. However, revenue has remained stagnant; falling prices were not outweighed by the increased demand generated.

Similar experiences were observed across the industry, where sharply declining prices were translated in many instances to falling operating profits and weak revenue growth, particularly in companies heavily concentrated in commoditised chips.

Structural factors behind weaker electronics growth

As highlighted above, weaker performance in the goods-exporting sectors explained part of the divergence between GDP and trade growth. We explore this theme further with respect to the electronics sector.

Although overall electronics domestic export growth in volume terms was positive, growth was not even across segments. Semiconductor DX at constant prices expanded by 7.9 per cent growth in 2007, on the back of a strong 16 per cent growth in production. On the other hand, production declines in the data storage, infocomms & consumer electronics and computer peripherals segments dragged down electronics DX.

Other electronics segments lagged semiconductor output growth.

Consolidation in commodity hard disk drives (HDD) in the data storage segment

The 1.6 per cent contraction in output of the data storage segment in 2007 reflected the consolidation of the hard disk drive industry. A key trend was the declining importance of commodity HDD production as Singapore moved into higher value enterprise drives.

More recently, there are signs of a turnaround after 19 consecutive months of decline, as data storage production moved into positive territory in the second half of 2007. The data storage segment will increasingly be led by hard disk media production as new facilities are opened. But disk media are classified as non-electronics exports in the trade statistics.

Intense global competition has affected the telecommunications and other end-product segments

Competition in telecommunications equipment, especially in the mobile handset market, has been intense in 2007. This has translated to weak performance recently although production appears to be picking up based on fourth quarter of 2007 results. Cost issues also played a role in other end-product segments. As Singapore moved up the value chain, lower-end products were shifted to lower cost locations.

CONCLUSION

The divergence between Singapore's economic and trade performance is mainly due to two factors, viz. strong growth in non-goods exporting sectors and differences in the measurement of real GDP and total trade.

The sharp decline in electronics prices, which magnified the difference between real GDP and total trade at current prices, was a result of excess capacity and intense competition among the major semiconductor companies. This was also reflected in weak revenue and profits at these companies.

Besides price compression, the consolidation in the hard disk drives and intense competition in the telecommunications and other end-product segments also accounted for the weaker production and exports in these segments.

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