

FUTURE HORIZONS

Presents

The Global Semiconductor Monthly Report January 2010

**22% 2010 Growth Is Now Minimum
A '30% Number' Is Now On The Radar**

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The Global Semiconductor Monthly Report

January 2010

A CEO favourite, the **Global Semiconductor Monthly Report** provides **analysis and commentary** on the **global semiconductor industry** and its **impact** on Future Horizons' **semiconductor market forecast**, as published in the **Annual Semiconductor / Semiconductor Application Markets** (previously called Key Market Drivers) **Reports**. These three reports provide a comprehensive in-depth analysis of the worldwide semiconductor, electronics equipment and economic environment. Together they provide the latest information on developments in the semiconductor industry, the companies involved, the changes in the markets, and the impact of the global economic and political situation.

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The Global Semiconductor Industry Analysts

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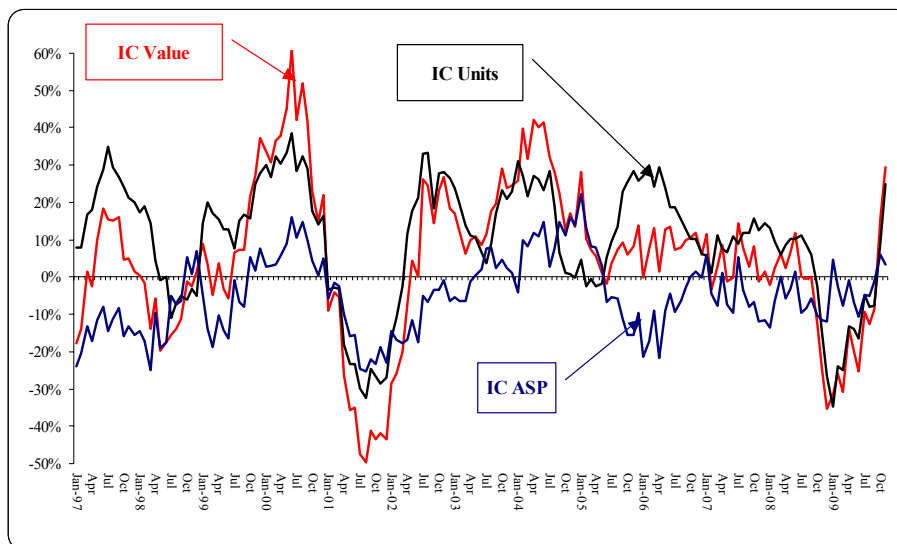
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Executive Overview

Figure E1 shows the 12/12 worldwide monthly growth rates for IC sales in dollars, units and ASP for January 1997 to November 2009 inclusive. They need to be looked at in conjunction with the other 12/12 and rolling 12-month charts provided in the **Market Summary** section of this report.

November's IC sales continued the year-end rally, down just 2.4 percent on October, up 29.3 percent vs. November 2008. This confirms our earlier prediction that Q4-09 sales would be up around 6.4 percent on Q3-09, one of the strongest year end-closes on record - Q4 sequential growth is typically 'zero plus minus 2 percent'. This confirms that 2009 will come in close to our minus 10 percent forecast, most probably at minus 9.7 percent, setting 2010 up for a bumper double-digit growth year. Only a Lehman Brothers-type event can now derail the recovery, the future is bright, and not before time too. For far too long now doom and gloom has spoilt the chip market horizons. Industry faith has been stretched beyond the limit.

Figure E1 - 12/12 Worldwide IC Monthly Growth Rates



Total IC	Units	ASP	Value
Nov 2009 vs Nov 2008	25.0%	3.5%	29.3%
Nov 2009 vs Oct 2009	-1.8%	-0.6%	-2.4%

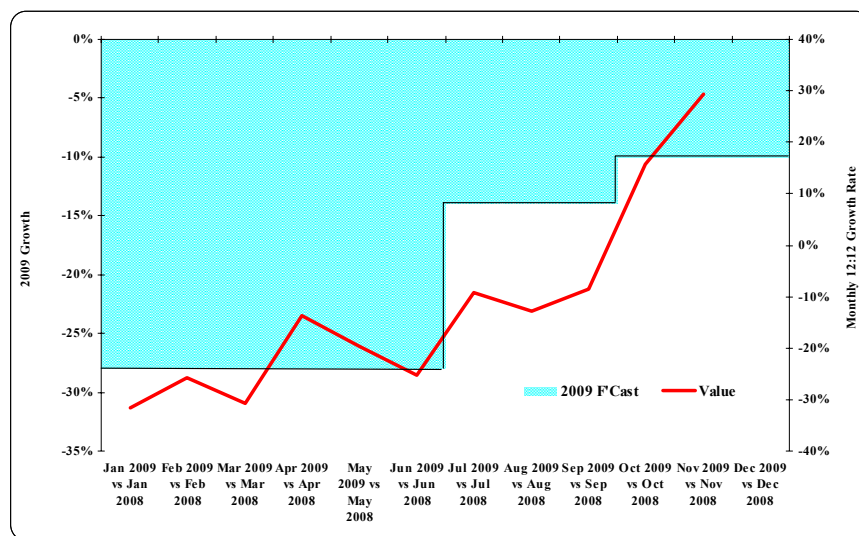
Source: WSTS/Future Horizons (Growth rates adjusted for 5-week months)

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Figure E2 shows the 12:12 monthly total semiconductor sales trend versus our 2009 forecast. Ignoring the structurally (and typically) wild individual monthly fluctuations – which simply means no single month's data is a good indicator of the underlying trends – November's result places us comfortably within our minus 10 percent 2009 growth estimate.

Figure E2 – 2009 12:12 Monthly Forecast Sales Trend



Source: WSTS/Future Horizons

Based on November's WSTS data, it is now very difficult to see anything less than a 22 percent growth year for the semiconductor market in 2010 based on the current industry momentum (i.e. a fourth quarter growth of around 6.4 percent) and a very 'average' quarterly growth pattern for 2010. Indeed we are now starting to see the first industry guidance revisions that tend to indicate even this range might be low. If the current growth momentum holds firm, 2010 chip market growth could easily hit 30 percent.

Low double-digit growth is totally out of the question, growth in single digits an absolute impossibility, Figure E3. Either of these scenarios would need a very poor start to the year, which is simply not happening. Order books are strong, inventory levels are low, capacity is tight and demand is holding up. You could not wish for a better start to the year ... what a difference from this time 12 months ago. Only a massive economic collapse can now spoil the party.

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Figure E3 – 2010 Forecast Scenarios

2010 Forecast Based On 6.4% Q4-09 Growth					
2010	High	Low	Median	F'cast	For E.G. 12%
Q1-10	67.579	64.929	66.254	65.591	62.279
Q2	70.282	64.929	67.579	66.247	60.410
Q3	78.716	67.526	72.985	70.355	62.827
Q4	81.865	68.201	75.175	71.762	63.455
2010	298.442	265.585	281.993	273.955	248.971
Q1-10	2.0%	-2.0%	0.0%	-1.0%	-6.0%
Q2	4.0%	0.0%	2.0%	1.0%	-3.0%
Q3	12.0%	4.0%	8.0%	6.2%	4.0%
Q4	4.0%	1.0%	3.0%	2.0%	1.0%
YoY%	31.1%	19.4%	25.0%	22.0%	12.0%

Source: Future Horizons

As we mention before, only a massive economic disruption like a Lehman Brothers bankruptcy can now derail the recovery and this is not being forecast by the economists. Quite the opposite, GDP data is trending more and more positively, with an upwards revision at the macro level more likely than not. This is not to say that the economic recovery is not fragile, it is far from out of the woods and many risks still remain, Figure E4.

Figure E4 – Current World Status

Good News

- ◆ Global Economy Has Now Pulled Out Of Recession
- ◆ Stabilisation Still Uneven & Recovery Fragile
- ◆ 2009 GDP Growth -1.1%, Up From -1.4% July 2009 Forecast
(Advanced Economies -3.4%, Emerging Economies +1.7%)
- ◆ 2010 GDP Growth +3.1%, Up From + 2.5% July 2009 Forecast
- ◆ Financial Conditions Better (Due To Massive Public Intervention)
- ◆ All Economies Now Recovering (But Big Regional Variances)

Not So Good News

- ◆ Risk Of Double Dip When Fiscal Stimuli & Public Policy Support Removed & Interest Rates Rise
- ◆ Financial Systems Still Unreformed & Unrepentant
- ◆ Slower Growth Due To Lack Of Easy Money & Debt Overhang



Slide 26

Source: Future Horizons IFS2010 – Slide 26

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Of the ‘not so good news’, to our minds the biggest single problem is the world’s financial systems remain unreformed and, worse still, unrepentant. This means the same issues that caused the global financial problem in the first place remain unchecked. In 1929 Wall Street’s shamed bankers jumped from their office windows ... in 2009 they stood in line for their bonuses.

From a chip market perspective, a sound economic base is important but the correlation is poor, Figure E5.

Figure E5 – World Economic Outlook – Upside Potential

- Steep Demand Decrease Since September 2008 Was An Over-Reaction, PC, Mobile & Auto Sales Held Up Better Than Expected
- Inventories Were Cut Back Far Too Steeply
- Economic Confidence Is Gaining Momentum (But Not So Economic Optimism)
- Increasing Confidence Is Slowly & Cautiously Building On The Recovery Foundations
- Recessions Stimulate Innovation Which In Turn Tempts Demand ... This Process Has Already Started
- Chip Market Correlation To GDP Growth Is Weak, It Marches To It’s Own Boom & Bust Cycles As Well
- Chip Market Bounced Back From The Economic Recession Faster Than World GDP, Just As We Said It Would

Source: Future Horizons IFS2010 – Slide 46

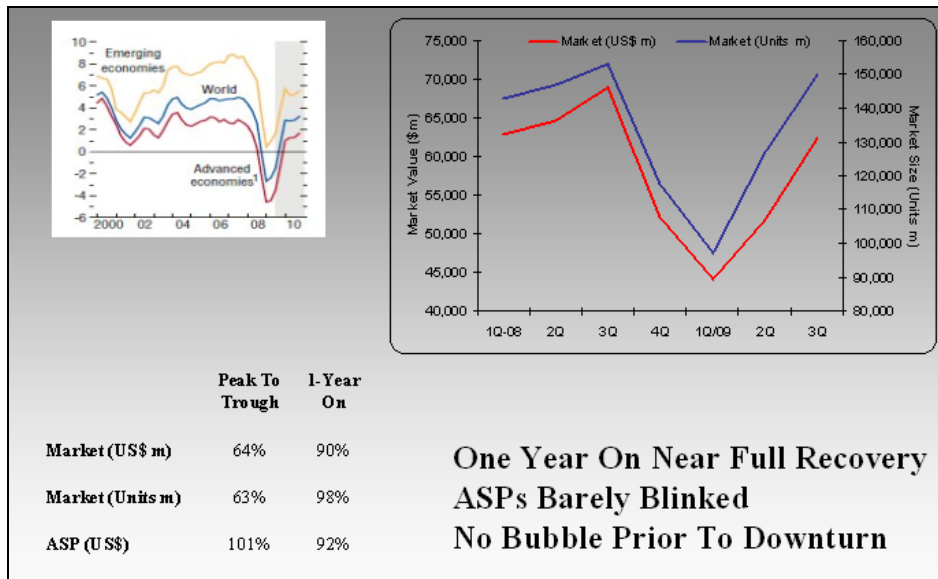
Whereas a collapsing GDP will trigger a chip market downturn, just as it did in the 2001 dot com bust and September 2008 Lehman Brothers collapse, the rates of recovery are independent of each other. For example, the economy recovered faster than the chip market after 2001 whereas the chip market is leading the recovery in 2009, Figure E6.

The extent of the market collapse can be gauged by looking at the peak to trough data, showing over one third of the chip market simply disappearing overnight. Except ASPs ... despite this massive decrease in demand, ASPs help firm, in fact they rose a modest 1 percent. One year after the chip market collapsed, units and value have now recovered to 98 and 90 percent respectively of their Q3-08 (market peak) value, with ASPs coming in just 8 percent lower.

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Figure E6 – World Economy & Chip Market Recovery



Source: Future Horizons IFS2010 – Slide 63

This is quite an extraordinary recovery, seeing as it took a full two quarters more for the world to exit recession. It happen though because there was no chip market bubble prior to the downturn.

With the memory market now in full flood of recovery – we can easily see an upside potential of a US\$60 billion market for 2010 – and memory prices increasing with barely a flinch from the market, 2010 is set to be a very good year for the industry. The only problem is that no one yet believes it.

Confidence has been shattered ever since the 2000 bust, with a glass half empty mindset dominating collective thinking. “Market growth is now single digit; ASPs will keep on falling; Where are the killer products to drag the chip world out of recession; We need to specialise, merge, narrow the R&D scope, cull the product line and above all dump all the fabs ... outsource for capital and operating efficiency; etc”.

Well to coin a phrase once used by Jerry Sanders III ... “Nuts!” It was only 2004 when growth hit 28 percent just after an 18 percent growth in 2003. Better get planning now, it’s already too late.

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Market Summary

Figures M1 and M2 show the worldwide and European 12/12 industry growth rates for ICs, Opto, and Discrete Devices from January 1998 to date. These show the current month as compared with the same period 12 months ago, and are a useful industry momentum indicator. Figures M3a-M3h show 15-month rolling worldwide and European sales by major product category. Figure M4a-M4h show the comparable worldwide unit and ASP trends.

Figure M1 - World Sales By Product Category 12/12 Growth Rate

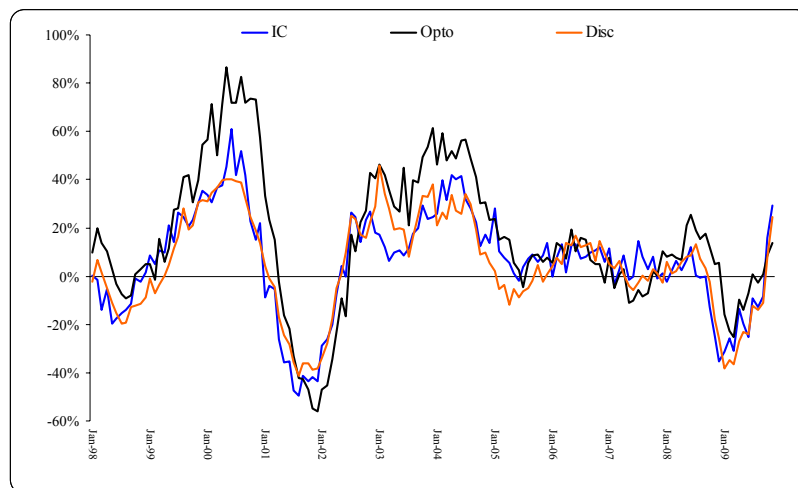
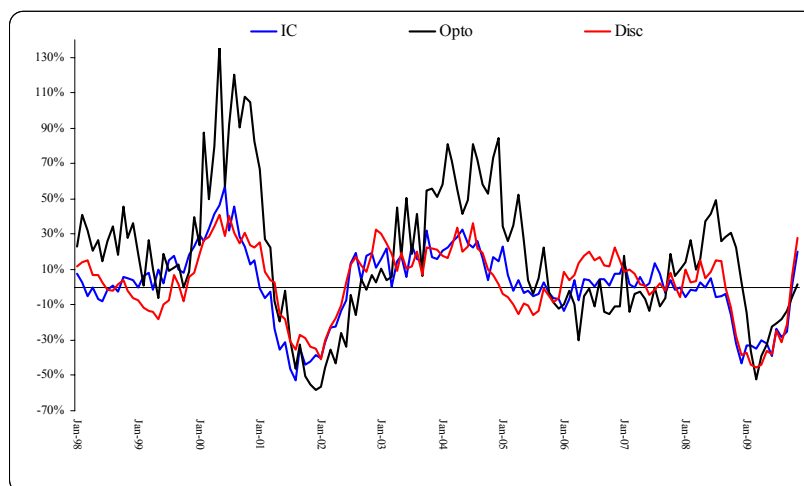


Figure M2 - Europe Sales By Product Category 12/12 Growth Rate



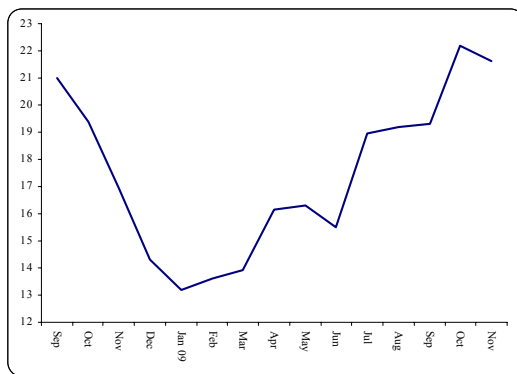
Source: WSTS/Future Horizons

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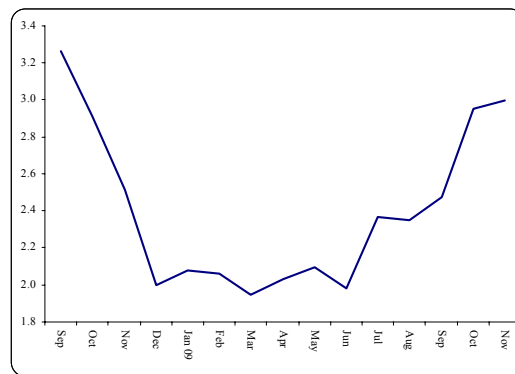
Figure M3 - 12 Month Rolling Worldwide & Europe Sales By Product
(Billions Of US\$)

M3a - Total WW Semiconductor



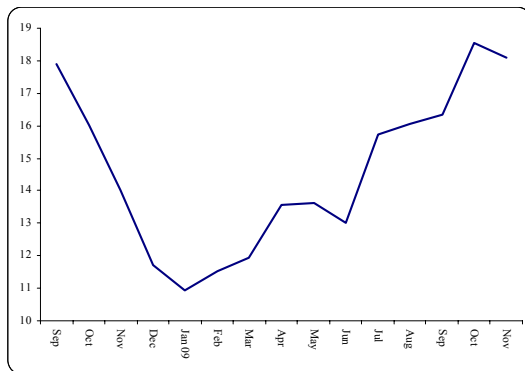
Dec 2009 vs Dec 2008 41.3%
Dec 2009 vs Nov 2009 -6.6%

M3b - Total Europe Semiconductor



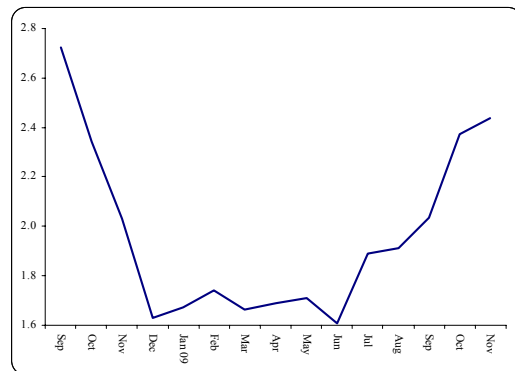
Dec 2009 vs Dec 2008 33.4%
Dec 2009 vs Nov 2009 -11.1%

M3c - Total WW IC



Dec 2009 vs Dec 2008 45.2%
Dec 2009 vs Nov 2009 -6.1%

M3d - Total Europe IC



Dec 2009 vs Dec 2008 32.4%
Dec 2009 vs Nov 2009 -11.3%

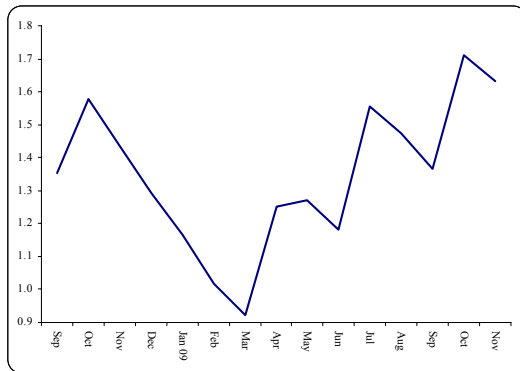
Source: WSTS/Future Horizons (Growth rates adjusted for 5-week months)

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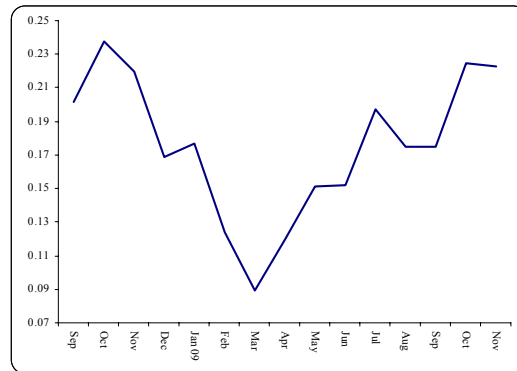
Figure M3 - 12 Month Rolling Worldwide & Europe Sales By Product (Cont)
(Billions Of US\$)

M3e – Total WW Optoelectronics



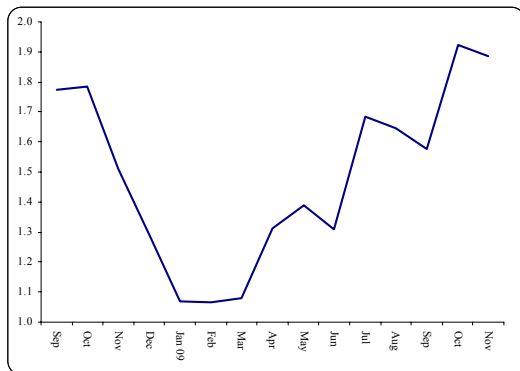
Dec 2009 vs Dec 2008 13.6%
Dec 2009 vs Nov 2009 -10.1%

M3f – Total Europe Optoelectronics



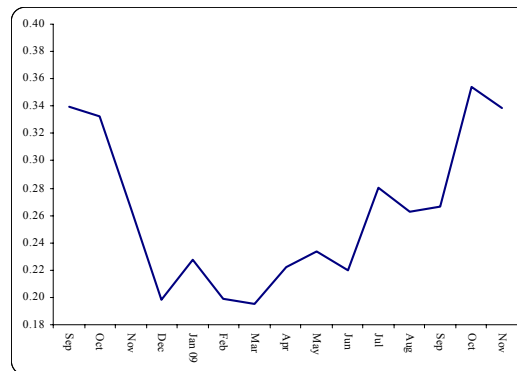
Dec 2009 vs Dec 2008 -100.0%
Dec 2009 vs Nov 2009 -100.0%

M3g – Total WW Discretes



Dec 2009 vs Dec 2008 33.5%
Dec 2009 vs Nov 2009 -8.7%

M3h – Total Europe Discretes



Dec 2009 vs Dec 2008 154.6%
Dec 2009 vs Nov 2009 49.2%

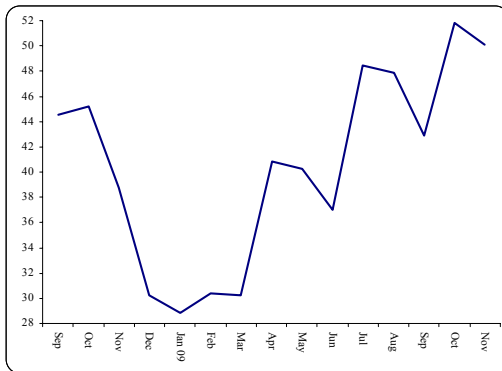
Source: WSTS/Future Horizons (Growth rates adjusted for 5-week months)

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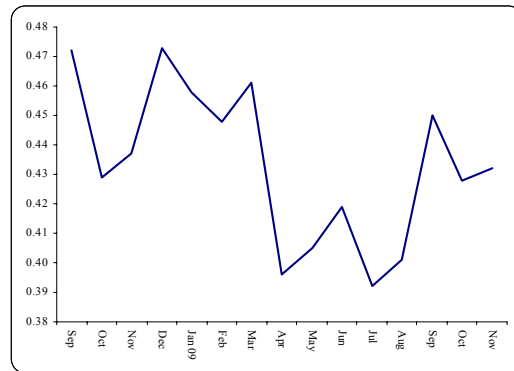
Figure M4 - 12 Month Rolling Worldwide Unit Sales & ASPs By Product
(Units In Billions & ASP In US\$ Dollars)

M4a – Total Semiconductor Units



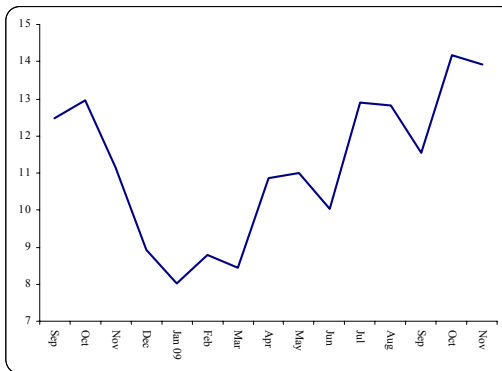
Dec 2009 vs Dec 2008 47.9%
Dec 2009 vs Nov 2009 -10.9%

M4b – Total Semiconductor ASP



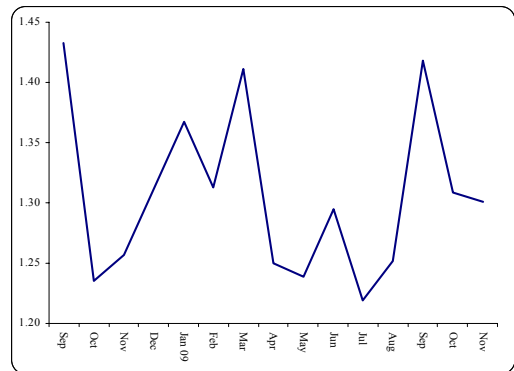
Dec 2009 vs Dec 2008 -4.4%
Dec 2009 vs Nov 2009 4.7%

M4c – Total IC Units



Dec 2009 vs Dec 2008 39.7%
Dec 2009 vs Nov 2009 -10.5%

M4d – Total IC ASP



Dec 2009 vs Dec 2008 4.0%
Dec 2009 vs Nov 2009 4.9%

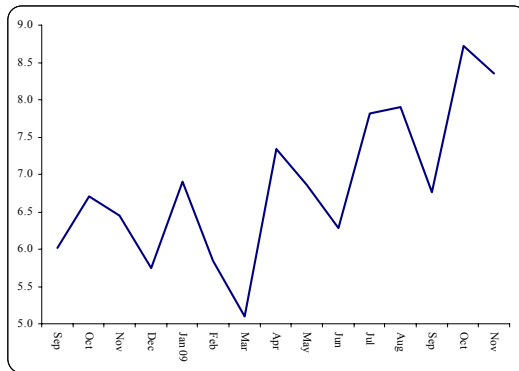
Source: WSTS/Future Horizons (Growth rates adjusted for 5-week months)

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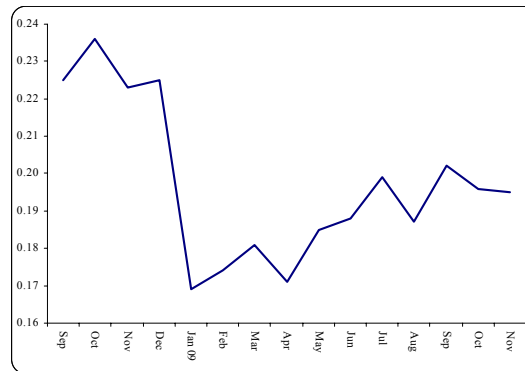
Figure M4 - 12 Month Rolling Worldwide Unit Sales & ASPs By Product (Cont)
(Units In Billions & ASP In US\$ Dollars)

M4e - Total Optoelectronics Units



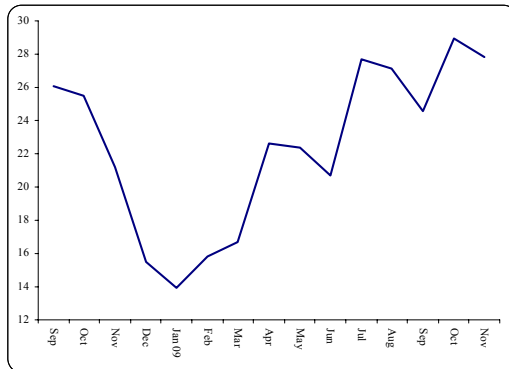
Dec 2009 vs Dec 2008 -100.0%
Dec 2009 vs Nov 2009 -100.0%

M4f - Total Optoelectronics ASP



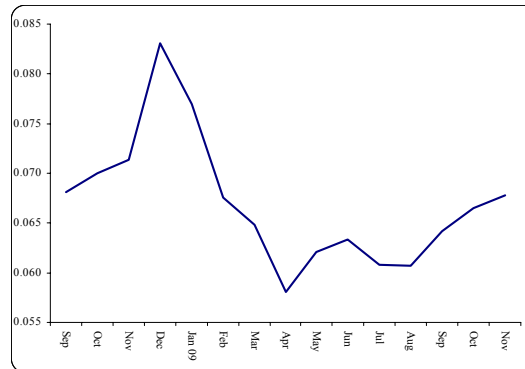
Dec 2009 vs Dec 2008 -100.0%
Dec 2009 vs Nov 2009 -100.0%

M4g - Total Discretets Units



Dec 2009 vs Dec 2008 107.2%
Dec 2009 vs Nov 2009 15.6%

M4h - Total Discretets ASP



Dec 2009 vs Dec 2008 -35.6%
Dec 2009 vs Nov 2009 -21.1%

Source: WSTS/Future Horizons (Growth rates adjusted for 5-week months)

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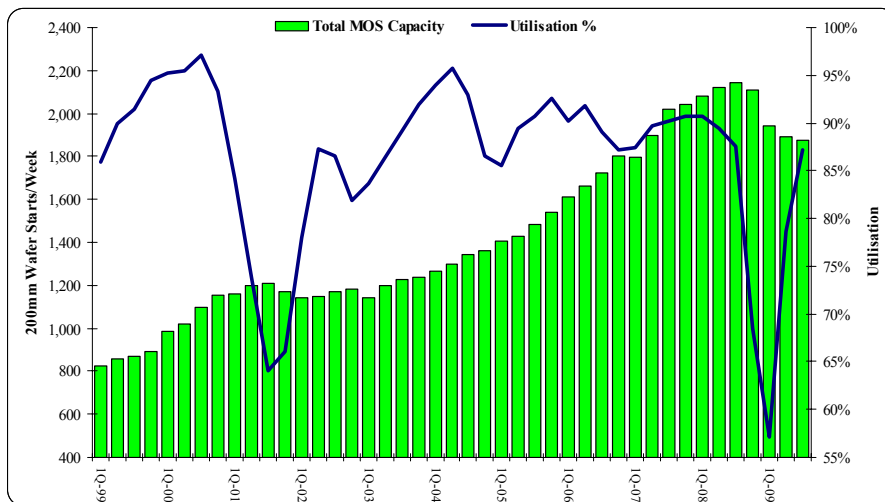
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Industry Capacity

Q3-09 total MOS IC capacity was **down** 12.5 percent versus Q3-08, which in turn was up 6.2 percent on Q3-2007. Quarter on quarter growth was minus 0.7 percent, compared with minus 2.7 percent for Q2-09, minus 8.0 percent for Q1-09 and minus 1.6 percent for Q4-08. This dramatic slowdown in net new capacity is in direct response to the slowdown in Cap Ex that has been gaining momentum since the second half of 2007, i.e. well before the September 2008 market crash.

It should be remembered that there is a three quarter delay between a Cap Ex spend and saleable units out, plus at least a quarter equipment delivery lead time so Cap Ex in year 'n' drives capacity expansion in year 'n+1'. As a result of the Cap Ex spend now growing much slower than the underlying demand, Q3-09 capacity utilisation rates hit 87.2 percent, up from 78.6 percent in Q2-09 and 87.5 percent in Q3-08, Figure C1. This bounce back was exactly in line with the prediction we made in our July and October Monthly Update Reports.

Figure C1 – MOS IC Capacity Utilisation Trends, 1997-To Date
(Percent Of Total)



Source: SICAS/Future Horizons

Just to recap, the sharp fall in Q4-08 and Q1-09 was the direct result of the uncertainty following the September 2008 financial crisis and the ensuing near-term inventory purge driven demand slump. It was not representative of the underlying trends.

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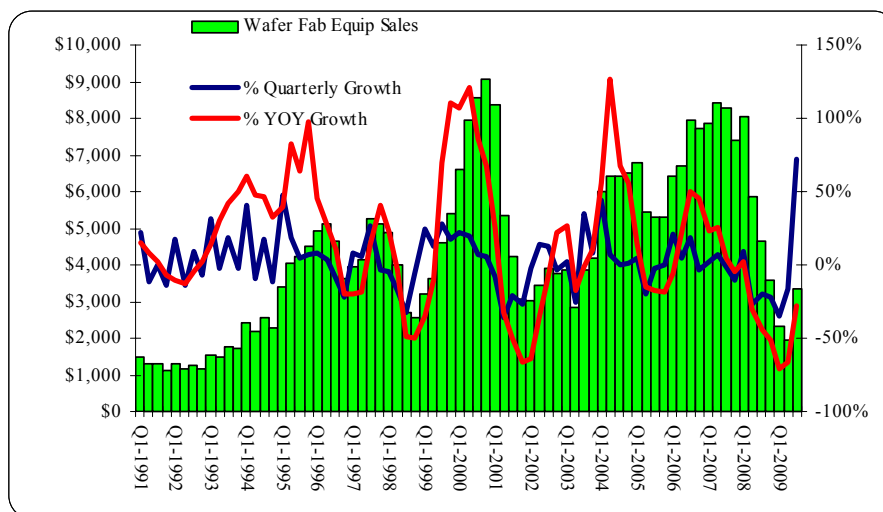
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With utilisation rates now back to their pre-Lehman level, we expect utilisation rates to improve again in Q4 with overall MOS IC capacity breaking the 90 percent barrier. Advance wafer fab production is already 'Sold Out' with Q3 utilisation rates reaching 93.5 percent. Leading edge capacity is now very tight indeed.

With Wafer Fab Cap Ex spend averaging around US\$8 billion per quarter between Q3-06 and Q1-08, spending plunged dramatically in Q2-08 reaching around one quarter this average in 1H-09, Figure C2, recovering very slightly to US\$3.3 billion in Q3-09. Given the current front-end Cap Ex book-to-bill trends, Figure C3, this spending level will improve only slightly in Q4-09, exiting the year at just over US\$ 1 billion per month, half the previous 2006-07 level.

It must not be forgotten that this cutback was deliberately started well before the Q4-08 market meltdown, in a premeditated strategy to dramatically tighten supply and thereby increase wafer and IC average selling prices.

Figure C2 – Front-End Equipment Quarterly Sales Trend



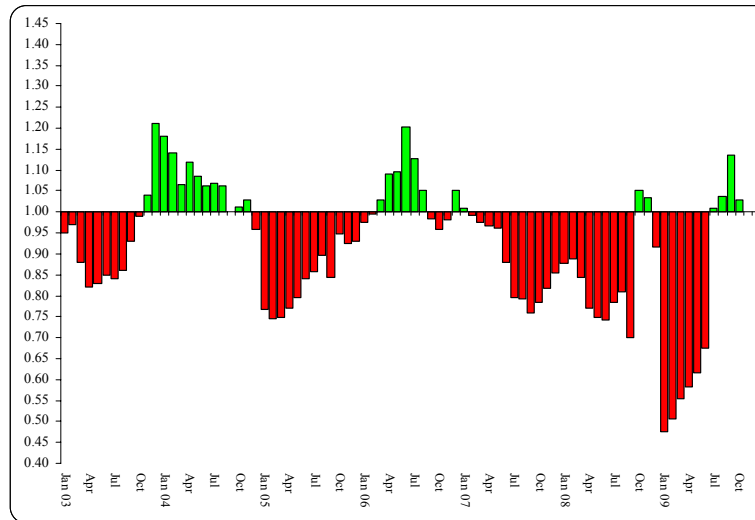
Source: SEMI/Future Horizons

With November's book-to-bill ration now back to 1.0, the level of new front-end capital equipment orders has now been sizeably lower than sales for 39 consecutive months, from September 2006 through November 2009, aside from three brief incursions into positive territory circa Q4-06, Q4-08 and Q3-09, Figure C3.

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Figure C3 – Front-End Book-To-Bill Investment Trends, 2003-To Date



Source: SEMI/Future Horizons

2009's Cap Ex spend now looks set to come in at around US\$ 16 billion, down 46 percent on 2008, which in turn was down 31 percent on 2007. That puts 2009's Cap Ex spend at one third of its US\$ 48 billion 2000 peak, basically at spares, upgrades and maintenance levels and no serious new capacity build.

No amount of productivity gains can offset this slowed investment, especially now the one-off 300mm conversion gain has been absorbed. Net new capacity addition is thus condemned to shrink even further during 2009, the capacity utilisation effect of which will be briefly suppressed in the first half of the year due to first half year seasonal demand and inventory adjustment process.

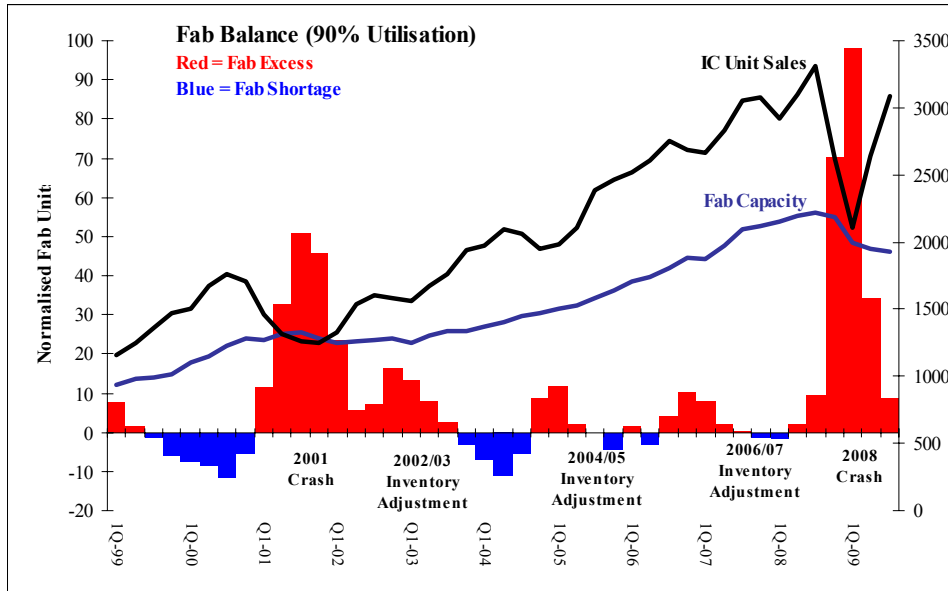
Unlike 2001, when the recession hit during a period of Cap Ex expansion, the industry was already 12-18 months into a capacity slowdown before disaster struck. For the first time in its history, the industry is entering the recovery in capacity famine mode. With the 'Allocation' word now back in the vocabulary, and the fact many previously IDM firms have gone decidedly fab-lite, it is not at all clear how the industry will respond or how tight things will become.

The interim period of 'plentiful capacity in 2009', Figure C4, has feed the illusion of plentiful capacity. This is now well and truly over, although few firms yet believe it; even fewer took the precaution of tying down their supply positions whilst the going was good. It is now too late; the era of cheap and plentiful wafers is over, Figure C5. Supply will get worse well before it gets better.

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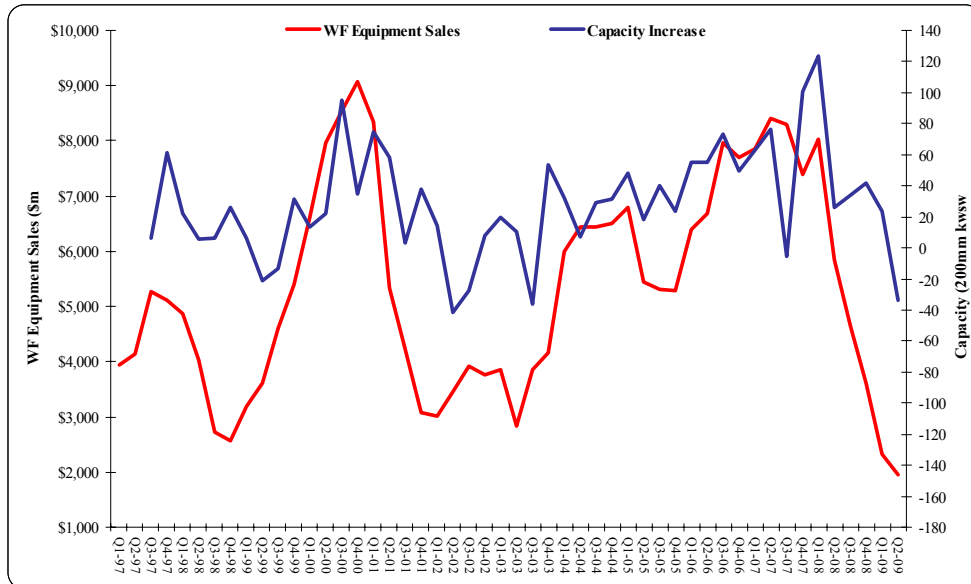
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Figure C4 – Supply-Demand Balance
(Equivalent 200mm Fabs)



Source: SEMI/WSTS/Future Horizons

Figure C5 – MOS IC Capacity vs Front End Cap Ex Spend



Source: SEMI/SICAS/Future Horizons

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World Economic Round Up**World Economy**

Stock markets around the world staged a recovery in 2009 since March when most of them hit their lows for the year. Analysts believe that the world economy is back from the brink. However, confidence has not been completely restored, 2010 will be a test year for the markets. Industry experts say that the outlook is hinged on economic uncertainties, the dollar-euro relationship, possible price hikes for raw materials, questions over interest rates and the explosion of US and European deficits.

Rising energy prices in November, confirmed the developed world's emergence from a deflationary period, as the prices of most goods and services continued to climb. This emergence indicates that the global economy is recovering. However, the world's leading central banks are likely to keep their key interest rates close to records lows for many months, because there is no sign of the emergence of broad-based price increase.

Oil fell under US\$82 a barrel in January from a 15-month high as forecasts for milder weather in the US, whilst gold prices jumped to their highest in more than a month on fund buying driven by stronger than expected Chinese import data, firm oil prices and a drop in the US dollar against other currencies.

It appears the undeveloped economies of the world are demonstrating far greater resilience than ever imagined with some showing greater strength than many of the larger economies. Of course some of these emerging economies are fairing better than others, and are not out of danger just yet, but generally speaking they have shown stability, a stunning degree of political and social cohesion and some even growth during these unpredictable times.

North America

The consensus of US economic forecasters expect 2010 to be a year of modest economic growth, predicting 3 percent which is much better than the previous 2 years but not good enough to bring unemployment close to pre-recession level. Unemployment rate is projected to be above 9 percent throughout 2010. GDP is predicted to grow 4.3 percent in the fourth quarter of 2009 with just a 16 percent chance that the economy will enter into another recession in 2010.

Economist forecast around 1.4 million jobs will be created over the next 12 months. This is still just a fraction of the estimated 8 million positions cut during the recession, meaning that the unemployment rate will decline slowly. Interest

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rates are set to stay in their current range as long as unemployment and other forms of economic slack are very high and inflation is low.

It has been suggested the US is edging closer to withdrawing some of its support for the economy after a stronger than expected November jobs report and other positive data. Inflation has been tame giving policy makers time to wait before pushing up interest rates. Core consumer prices were unchanged in November 2009.

US home sales surged to almost a three year high in November 2009 and prices steadied; however, the sectors broader prospects for recovery appear uncertain with tax incentives for buyers winding down and historically low interest rates unlikely to last. US manufacturing activity expanded last month as its fastest pace in more than three years, as increasing orders prompted factories to set up production.

Gold prices inched up above US\$1,100 in the first week of January. This strong reading will add to the view that economic growth will be robust this year and it could also stir talk that the Federal Reserve (FED) might raise interest rates sooner than expected, which would likely strengthen the dollar but pressure gold.

Eurozone

There are warnings of another slow down in the euro-zone economy. Experts predict recovery could lose traction in the first part of 2010. This does not mean a double dip recession but more in the character of a gradual and bumpy recovery over the next quarters.

Private domestic demand in the euro-zone has been persistently weak, leaving economies to rely unduly from government stimulus programmes and export demands from Asia and the US. Household spending is being held back by a combination of job fears and tough new lending standards.

Euro-zone industrial production fell in October 2009 by 0.6 percent from September. This fall may undermine expectations for the euro-zone GDP to grow for a second quarter in the current quarter, particularly after a 2.1 percent decline in German manufacturing orders. Euro-zone GPD grew 0.4 percent in the third quarter from the second in 2009.

German output slid 1.8 percent in October from September 2009, while production fell 1.9 percent in France. In Italy output of goods rose 0.5 percent but followed a 5.1 percent fall in September 2009. The number of people with jobs in the euro-zone fell 712,000 in the third quarter 2009 compared with a 702,000 decline in the second quarter. European car sales rose by 16 percent in December

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2009, marking signs of a recovery in the sector. However total sales for 2009 were down 1.6 percent in 2008. Some countries with scrappage schemes saw rises in sales in 2009 including France and German.

The gap between the euro-zones strong and weak economies widened at the end of 2009, with Germany's services sector racing ahead whilst Spain's service sector contracted deeply. The PMI for the euro-zones services sector rose to 53.6 in December from 53.0 in November indicating that the currency area's economic recovery strengthened.

This was not the case for all as Spain's services PMI fell to 45.0 in December from 46.1 in November, indicating that activity fell at the fastest rate in 5 months. This increase in divergence in growth prospects between the main countries of the euro-zone makes it difficult for the European Central Bank to find the right balance of monetary policy appropriate for all.

UK

Growth in the UK economy is set to pick up gradually in 2010 but the economic recovery will be fragile, however experts are still worried about a double dip recession in 2010, in which the first week of January saw the sterling fall broadly. Consumer spending looks to be more resilient than first thought and a weak pound will help to support export growth. Experts forecast an annual growth of 1.2 percent in 2010 followed by a growth of 2.5 percent in 2011.

Mortgage lending in the UK in November was down 10 percent from the previous month and was at its lowest level since May, according to lenders. Gross mortgage lending totalled £12 billion during the month, down 14 percent on November 2008, the Council of Mortgage Lenders (CML) said. Lending on home loans had been rising steadily during the autumn. The longer-term picture remains one of stability, despite the imminent end of the stamp duty holiday.

Official figures have shown that the UK's public sector net borrowing hit a record high of £20.3 billion in November 2009. The figure was the highest for any month since records began in 1993, but was less than economists had expected. Government debt as a percentage of GDP has risen considerably since the start of the financial crisis but despite the sharp increase in public borrowing, overall debt levels as a percentage of GDP are similar to those of other major, developed economies.

City economists have revised their forecasts upwards and expect Retail Price Index (RPI) inflation to rise sharply to over 3 percent by January 2010 and to peak at around 4 percent in April. Consumer Price Index (CPI) inflation is also expected to rise, but to stabilise at around 2 percent. Economic growth is

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expected to return in 2010, but at modest levels, reaching an average of 1.6 percent. The office for National Statistics said CPI inflation rose 0.6 percent last month, taking the annual rate up to 2.9 percent from 1.9 percent in November.

Official figures have also shown that the number of people unemployed in the UK has fallen for the first time in 18 months. Total unemployment stood at 2.46 million at the end of November, down 7,000 on the figure three months ago. The rate of unemployment now stands at 7.8 percent down from the 7.9 percent reported last month. Office of National Statistics (ONS) figures also showed that the number of people claiming job seekers allowance fell to 1.61 million. Offsetting these positive trends was the fact that the rise in employment was fuelled partly by an increase in people taking part time work.

House prices are unlikely to rise much in 2010, with weak economic growth, tax increases and high employment set to weigh both on demand and buyers ability to pay, according to the nation's chief surveyors' body. London-British consumer spending could falter in the months ahead, as a quarter of households said they are saving more, or plan to, partly because of uncertainty about the economic outlook, a Bank of England survey showed.

Sales of new cars in the UK reached almost two million last year, the Society of Motor manufacturers and traders (SMMT) has said.

Japan

Japan is expected to show a contraction of around 6 percent in 2009, while China powers ahead Japan is slipping behind. However Japan remains vastly richer than China due to the size of China's population. Japan's economy is still in a very severe situation. The economy grew at a much slower rate than previously thought in the third quarter and there are worries that renewed deflation and a strong yen could derail the recovery.

The economy only grew at an annualised rate of 1.3 percent during the third quarter, down from the previous estimate of 4.8 percent. It is estimated that 7.2 trillion yen (US\$81 billion) on measures to bolster employment extend incentives for energy efficient products and provide loan guarantees to help small and medium sized businesses.

In order to avoid a double dip recession, Japan's cabinet have approved an extra budget. Japan is also struggling again with deflation, which returned for the first time since 2006 leading to a vicious circle of decreased spending and increased unemployment. The yen recently hit a 14-year high against the dollar, making Japanese exports more expensive in the US.

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The Organisation for Economic Cooperation and Development (OECD) has warned that Japan's public debt is set to soar to more than 200 percent of GDP by 2011. Japan's exports to the rest of Asia totalled 2.7 trillion yen (US\$30 billion) in November up 4.7 percent on October, which was the first rise in 14 months. This has increased Japan's factory output up to 2.6 percent from October. The average wage has declined in November making it the 18th consecutive monthly fall.

China

China's economy expanded by 8.7 percent in 2009; however it is expected to grow about 9.5 percent in 2010. China is expected to over take Japan and become the world's second biggest economy. They will be boosted by double-digit growth in mild inflation and real estate investment, which is expected to grow by 30-40 percent in 2010, becoming the main source of investment growth. Experts say that exports are a key driver of economic growth and they will start to grow again in the coming year. The 2010 economic growth forecast for China is 8.9 percent.

Despite the economic growth assisted by massive government stimulus packages experts are concerned about the quality of growth and what will happen when the stimulus is withdrawn. Inflation is also rising with consumer prices increasing by 1.9 percent in December from a year earlier.

Consumer prices rose by 0.6 percent in November 2009 from the previous year, after falling 0.5 percent a month before. The country's consumer price index (a key measure of inflation) is estimated to remain below 3 percent. Economists expect interest rates to rise during 2010.

China's manufacturing activity expanded for the tenth straight month in December (purchasing manager's index rose to 56.6 percent in December from 55.2 percent in November). Many economists believe Beijing will not shift currency policy until there are clear signs of Chinese exports recovering.

Exports were only up 0.7 percent in November over October. Real estate prices rose by 7.8 percent from January 2009 renewing fears that an asset bubble is developing.

India

India's economy expanded 7.9 percent in the second quarter of 2009/2010 and is expected to grow over 7 percent in the whole fiscal year. Experts believe India will return to 9 percent growth trajectory in two to three years time. In India the manufacturing Purchasing Managers Index (PMI) rose to 56.1 and 55.6 respectively from 55.7 and 53 in November 2009. This figure represents rapid

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increase in manufacturing output, as 50 suggests the cut off between rising and falling manufacturing output.

Food prices in India have risen to a high of nearly 20 percent over the last year, the highest rate in a decade. The result of this is the government plan to import food to ease prices. Overall inflation in India has risen to 4.8 percent in November 2009. Economists state that this could trigger a rise in interest rates. Officials believe by March 2010 inflation could be close to 7 percent.

Asia Pacific

Asia has led the world out of the economic downturn thanks in part to a welcome burst of consumer consumption. Strong government stimulus programmes enacted during the depths of the crises helped spur economic activity across the region. Most of Asia's economies are growing and private consumption has been the key. China, India and South Korea are now a step ahead of the USA and Europe.

Output, new orders and employment intentions have risen in global manufacturing. The impact of this is the worry that the prices of raw materials may increase. This strong economic recovery could mean that authorities could soon look to tighten fiscal and monetary policies.

The Australia Central Bank was the first to raise its key policy rate and experts are waiting to see whether recovering nations such as India and South Korea follow suit.

Manufacturing indexes in China, South Korea, Taiwan and India showed continuing expansion in December with the strongest being China. Few expect a repeat of this performance in 2010 as markets always slow in the second year of a recovery. However, experts expect gains in the range of 19 to 14 percent based on the all-country Asia ex- Japan index.

Russia/CIS – Ukraine: A Democracy At Risk

Five years ago, an orange sea of Ukrainians flooded the streets of Kiev. They were protesting at the attempt of then-President Leonid Kuchmas' administrative machine to falsify election results and demanded the right to choose their country's leader. They demonstrated to the world their desire for freedom, justice, and democracy.

They brought new leadership to power but it failed to deliver most of the promises given to the people on the frozen Maidan. Disillusioned and discouraged,

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Ukrainians are coming to the polls once again in January 2010. Those longing for strong-armed rule may well outnumber those who want to preserve their imperfect democracy. It is time for the West to take note.

Over the past five years, the people's desire to see political leaders held accountable for their wrongdoings remains unfulfilled. The promise of justice, which became the mantra of the Orange Revolution, was betrayed in its aftermath. Most of the crimes of the regime remain unpunished, while many of their alleged instigators still enjoy privileged status and material comfort.

Some even received awards or promotions from the new authorities. Moreover, Ukraine's current rulers retain immunity from prosecution and engage in corrupt activities with the same sense of impunity as their predecessors. According to a 2009 Transparency International report, Ukraine's corruption level remains on par with Russia, Sierra Leone and Zimbabwe, showing no improvement since 2004.

Reforms that were never realised and widespread corruption have had a major corrosive effect on the Ukrainian public. According to a recent poll, over two-thirds of Ukrainians believe that only a leader with a strong hand can solve the country's problems. By contrast, only one in five Ukrainians thinks that democracy is the answer.

Even though disappointment with democracy and capitalism shows in most of the countries of the former Soviet bloc, Ukraine still stands out. Only a third of Ukrainians approve of the country moving from a state-controlled economy to a market economy and a change to multiparty democracy.

From a once promising democratic leader in the region, Ukraine has transformed into an example of disenchantment for the democratic and civil society activists in neighbouring countries. Belarusian activists and Russian opposition can no longer show their followers that effective public protest can bring genuine changes to the country.

Responding to public demand and pursuing their own agenda, the front-runners in the 2010 Ukrainian election are promising to restore Putin-style vertical power with centralised political control. They lack transparency in decision-making and possess a weak commitment to fighting corruption, especially in their close circles. Their true personal wealth is hidden and they publicise dubious income declarations that have become the target of many investigative reports.

It is becoming harder for Ukrainian journalists to do their job on daily basis. Even before the election campaign started, a Ukrainian court barred criticism of one presidential candidate. The ruling was later revoked after a major outcry from civil society groups.

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Still, TV reports are not covering the sharpest criticism of the front-runners. The main achievement of the Orange Revolution, freedom of the press, is now in danger. Having once managed to reclaim their rights and freedoms in front of the world, Ukrainians risk losing it all over again.

The EU and other democratic nations urgently need to develop a clear constructive and principled policy with regard to Ukraine. Their calls for free and fair elections today will not have much of an effect on the Ukrainian authorities without a real commitment to hold them to their word.

Whoever becomes the next president of Ukraine needs to be monitored closely. Another honeymoon with a Ukrainian leader, if similar to the one with Mr. Kuchma in 2000 and Victor Yushchenko in 2005, could lead to the complete collapse of Ukraine's fledgling democracy.

If the next leaders of Ukraine prove unwilling or unable to bring about change for the country, and instead continue down the path toward their authoritarian past, the only solution for the west will be to focus on the growing civil society and support new emerging leaders.

This, at least, will guarantee that the few gains of the Orange Revolution will not be reversed and even if Ukrainians lose their way today, the basic democratic reforms they have earned will ensure that their destiny will still remain in their own hands.

Economic Case Study – Developing Countries Recover

At the start of the economic crises experts predicted the worlds developing countries would feel the effects of the downturn far greater than their richer neighbours. When the rich economies of the world slid rapidly into melt down, it was expected developing counties would follow due to their trade and financial links with the west.

Forecasts were indeed very bleak; however, to date it seems developing countries are demonstrating far greater resilience than ever imagined and some showing greater strength than many of the larger economies. Of course some of these emerging economies are fairing better than others, and are not out of danger just yet, but generally speaking they have shown stability and some even growth during these unpredictable times.

2008 saw western countries economies contract by 5-10 percent a year, real Gross Domestic Product (GDP) fell at an average annualised rate of around 15 percent and a decline in industrial output. Many believed this would make emerging

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countries turn inward to protect themselves from the same fate. Some experts predicted unless governments acted in good time, war and famine could follow.

The IIF (Institute of National Finance) estimates the net private capital flows into developing countries will more than double in 2010, this will still put figures below their peak, but it shows the largest developing countries stock markets have been able to recoup all the losses experienced in 2008. This is more than can be said for the west.

Since 2007, according to economists, the biggest emerging markets, Brazil, China, India and Russia have accounted for 45 percent of global growth, almost twice as much as in 2000-6 and three times as much as in the 1990's. In the past it has been said although expanding markets contributed to world growth, they could not take too much credit for the global economy as the final demand for their exports lay in America. However, China has now taken over America as the main market for goods of the smaller Asian exporters. The power the west once had is rapidly decreasing.

All this raises the obvious question; why is it that developing countries have been less affected?

The overall loss of output in the emerging markets in 2007 was less than expected and much less than the fall in world GDP. China, India and Indonesia did not tip into recession, they merely suffered slower growth, whilst Brazil and the Asian tigers saw output fall but bounce back.

Emerging markets benefited from their own economic stimulus programmes. The rich countries bail outs and monetary loosening policies helped to create a new market for emerging country exports and assets. Plus, some developing countries built up large cushions of foreign exchange reserves after the Asian crises that afforded them some protection.

Developing countries developed big stimulus programmes, unveiling large anti crises budgets or counter-cyclical spending programmes. Emerging markets did more than their western counterparts to combat global recession. Even those countries that could not afford emergency programmes like China's let their fiscal balances deteriorate as counter cyclical spending got underway. By ring fencing social spending, developing countries managed to protect some of their poorest people.

Previous recessions have left most developing countries with their reputations for economic management in tatters, and with capital credibility to regain in capital markets. This time the roles appear to be reversed, with the rich nation's reputations in tatters.

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Firstly, economic instability usually causes political unrest despite this being the worst recession since the First World War, however, this has not been the case. The slump caused only one developing government to collapse (Latvia) and although others have had their share of problems i.e. Hungary, two of the biggest emerging markets, India and Indonesia are showing extreme political stability. Both held general elections in 2009, which were both won by the existing ruling party. This is a lot to do with the general perception that the crisis had started elsewhere and governments seemed to be dealing with it efficiently.

Secondly, generally speaking the downturn has not caused any fundamental shift of popular opinion. There has not been any significant backlash against capitalism or free markets, or upsurge of angry pessimism. Both these factors have given the emerging markets 'policy space' in which to act, and enhanced their reputation for fiscal prudence.

The debt-to-GDP ration for the 20 largest emerging markets is only half of that of the top rich nations. It is forecasted over the next few years rich countries debt will rise further, so emerging markets' indebtedness will be only one-third of theirs by 2014.

The political and social consequences of the worst economic crises since the great depression have been milder than predicted, especially amongst developing countries. Governments have remained stable and social protection programmes have survived relatively unscathed.

There have been economic policy shifts but retreat into isolation has been avoided. Some countries have faired better than others, perhaps it is a little too early to say things will not take a turn for the worse, but overall developing countries have showed great resilience and reflect a stunning degree of political and social cohesion, that the west have not yet managed.

Market Trends - Growth Prospects For 2010

Semiconductor applications were negatively affected by the recent economic downturn in 2008 and 2009 and the outlook was very gloomy at the beginning of 2009 getting progressively worse as Q1 figures were declared. The consumption of electronic equipment is, however, only loosely connected with the economy and many applications showed an amazing resilience in the turbulence of the economic storm triggered by the US housing market and the banking troubles.

The rest of 2009 showed a recovery, particularly in PCs and mobile phones units produced. Both of these applications categories make a significant contribution to

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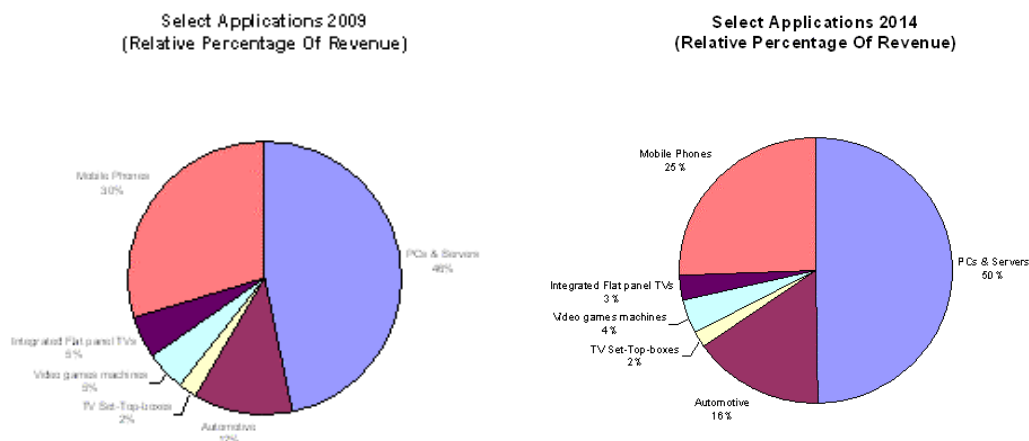
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the overall semiconductor consumption. Unfortunately electronic equipment was under price pressure as manufacturers tried to sell more in a depressed market that is already subject to stiff competition. This had a knock-on effect on semiconductor ASPs, but the end result was a semiconductor market that was down, but considerably better than the industry believed at the beginning of 2009.

The performance of the electronic equipment and semiconductor market in the face of economic trouble has led us to the conclusion that growth over the next five years will be relatively strong overall, but the automotive and consumer market will take longer to recover. The seed corn of this growth is the increasing affluence in some of the developing countries, which will allow rising consumption.

The GDP growth of China and India, as two examples, was positive in 2009 compared to the more beleaguered developed countries of Europe, Japan and the United States. The consumption of electronic products in the East is growing fast relative to North America and Europe. Another factor that should not be underestimated is world population growth, which has more than doubled in the last 50 years. China and India combined make up approximately 40 percent of the total world population and this is set to increase going forward.

Each application has its own characteristics in growth over the next five years and shown in the two following charts.



Source: Future Horizons

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The charts do not represent the whole market but illustrate the relative growth of select major applications from 2008 to 2014. The total semiconductor market in 2009 is US\$205.2 billion and the market forecast for 2014 is US\$ 385.2 billion.

The key growth drivers for some of the major segments are as follows:

PCs

- Lower cost PCs are driving the market and we expect this trend to continue
- The netbook phenomenon has spurred growth but this is not all gain for the PC and semis industry as it sets consumer expectations for low priced items and takes away from sales of (other) lower end laptops
- 64 bit cores will trickle down to home PCs. These cores will give an improved PC experience for games and high definition movies especially for video editing
- The PC will become more popular for media playback in the home as it offers more flexibility than standard consumer items including DVD and Blu-ray players
- The availability of DDR3 will help on upgrades as it can improve performance for some applications
- The trend to more fashionable, thinner, lighter and greener portable PCs will continue, helping new and replacement sales.
- Sales of PC will comprise high growth from developing regions and replacement sales in more saturated regions

Automotive

- Semiconductor content is rising in the average vehicle in the longer term – pervasive use of electronics for all systems in the vehicle
- Safety systems including new developments where accident avoidance systems are being developed for automatic braking to prevent impending collision
- The car will replicate some of the entertainment and connectivity of the home. Ideally, the consumer would like to have in-car access to the full range of entertainment available in the home
- Lower cost and more fuel efficient vehicles proved popular in the downturn but fuel efficiency is here to stay, which will require more electronics for control

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- Easing of credit restrictions will help growth in developed countries from 2010 onwards
- Economic development in Brazil, Russia, India and China (BRIC Countries) will spur automotive growth as more consumers in these regions become more affluent
- New Asian automotive manufacturers (ex Japan) will become increasingly important producers in world as well as domestic markets

Consumer (Integrated Flat Panel TVs, Set-Top-Boxes And Games Consoles)

- Consumers still have appetite for innovative products and are prepared to buy at 'value' pricing even during an economic downturn
- Unit growth will continue but revenue will be much slower in rising as cut-throat pricing continues which will also be reflected in the associated semiconductor market
- New innovations are needed to spur growth and this will be increasingly difficult as there is still a lot of concentration on cost reduction and manufacturing efficiency rather than innovative developments
- Next generation consoles are likely to be released in 2011 and this will generate consumer interest. Interest in 3D displays, virtual reality and sensory feedback may feature more strongly and help growth
- High definition video will encourage many consumers to upgrade for improved resolution and richer colours – 'an altogether better experience'
- More converged devices will appear - possibly larger thin screen navigation systems able to accept and receive phone calls, send cellular text, and play videos

Mobile Phones

- Mobile phones are becoming increasingly popular in developing countries and this will feed growth in the next five years, although world saturation will still occur in the more distant future
- The market is becoming more commoditised and more phones are using applications standard products rather than custom chips. This development is helping reduce the end price for mobile phones and will spur unit and revenue growth

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- ❑ New mobile phone architectures that can handle multiple radio protocols efficiently and at low cost will help reduce the cost and increase penetration of mobile phones
- ❑ Multiple phone ownership may become more prevalent with phones for emergencies, smartphones for business and fashion phones for leisure

The mobile phone is the prime candidate for a converged device and is cramming in new functions year-by-year. Health monitoring, for example, could include heart monitoring, insulin analysis and pollen count indicators. These would feature in some new specialist ranges of mobile phones.

There is considerable potential for renewed growth over the next five years with a increasing number of 'new consumers' entering the market for the first time in developing economies. Electronics is becoming increasingly pervasive and most equipment is no longer in the luxury goods category and this will help increase penetration in the world market.

A more detailed forecast and analysis is available in the newly published 2010 Edition of Future Horizons Semiconductor Application Markets Report covering in total the top 29 applications areas which together account for over 90 percent of the total semiconductor market. For added convenience, reports on each sector are available on an individual basis.

Semiconductor Spotlight - The Great Fab-Lite Illusion

Over the past few years, squeezed by 'ever-declining' ASPs and a 'zero-growth' market (in value terms), the so-called fab-lite business model was born and unashamedly embraced. Encouraged by the financial community, seized upon by struggling IDMs, driven by the fabless firms' success, edged on by OEM disinterest, firm after firm has signed up to the concept, lauding the benefits and turning a blind eye to the flawed logic reality... if something is seemingly too good to be true, it usually is.

Not so, goes the argument. Wafer fabrication is a service operation, a simple make-buy decision best left to outsourcing. Foundries are fundamentally more efficient than IDMs meaning they can make wafers much cheaper than in-house production. In any event, the chip industry has been outsourcing back-end manufacturing for decades without any problem and fabless companies have constantly out-performed IDM's growth with no competitive disadvantage by not having a fab.

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Contrasting this with the IDM corporate liability of owning and operating a fab, tying up cash and management resources, fab-lite is the answer; elegantly solving the inherent fab ownership operational problems and levelling the playing field with the fabless competition.

If only it were that simple. Not only is the logic justification muddled, superficial, flawed and confused, unlike fabless or IDM, there is no industry consensus on what exactly fab-lite means, witness the fact the term is littered with a variety of colourful alternative euphemisms, such as asset-lite and asset-smart, implying these are subtly different and implicitly better than fab-lite.

Fab-lite is thus a chameleon meaning different things to different people but said with such brash and reassuring gusto that no one questions the strategic reality that fab-lite is nothing more than an delusion ... Emperor's new clothes.

Euphemisms aside, there are two fundamental fab-lit varieties. Option 1: maintain a small in-house wafer fab to prove out each process node but then outsource to a foundry the bulk of production. This is essentially the current STMicroelectronics approach and has the advantage of keeping up with technology, provided the facility is constantly upgraded for future node transitions.

On the face of it Option 1 seems an elegant solution were it not for the fact a small pilot fab will never be cost-effective versus a foundry, especially one of TSMC's gigafabs. Proponents of this route will thus face perpetual hostility from investors, Wall Street and shareholders: "Why are you wasting money, tying up capital in expensive assets and depleting shareholder value when your outsource supplier is clearly much cheaper than you?"

It would take a strong CEO and board to fend off this criticism, more likely than not they would all be fired and replaced by a more 'investor-compliant' team. In the long-term Option 1 will inevitably default to Option 2.

Option 2: stop building fabs completely at a certain process node and then use a foundry for new wafer production. This is the route that e.g. Freescale, Infineon and NXP have taken. This is clearly a bipolar structure; IDM up to a certain node and then fabless thereafter.

Unlike Option 1, this strategy is process-terminal, once you exit a fab node it will be virtually impossible to re-enter the wafer manufacturing business. The more generations missed, the greater the impossibility.

Option 2 thus combines the worst of both worlds. For the legacy fabs it ignores the fundamental reality that today's leading edge is tomorrow's commodity meaning these fabs will slowly become more and more obsolete and harder to fill.

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Firms will thus be subjected to a constant closure and restructuring effort, damaging employee morale and affecting costs and productivity. Finding and keeping good operations personnel will be difficult given this business strategy is an operational dead end.

For the new fabless future, Option 2 sidesteps the fact that simply not having a fab does not make you a fabless firm, just a firm without fabs, not the same thing at all. The legacy overhead infrastructure and costs and inefficiency will be much higher than with a truly fabless company and overall competitiveness will continue to erode.

In short, restructuring from an IDM to a fabless business model will be both 'operationally challenging' and unlikely to make the organisation more structurally competitive. To the contrary it will more likely have the totally opposite effect and will continue to erode. Option 2 thus represents death by very slow strangulation.

Aside from the definition and implementation issues, there is also the fundamentally unsound fab-lite economic assumption that foundry wafers will always be cheap and freely available. This is the chip industry equivalent of the 'debt is freely available and cheap' corporate business model that came to such an abrupt and catastrophic halt in the recent financial crisis.

Just as with cheap debt, ever reducing prices (and profits) whilst simultaneously investing in new process and production technology cannot be sustained forever; they result would be bankruptcy. Structurally prices must eventually increase.

Then there is the allocation and key account issues. Not everyone can be on the foundry's 'A'-list of accounts, which inevitably means losing control of time to market and time to revenue. The A-list customers will always have the advantage, increasingly so as everyone is forced to use the same identical building blocks with no scope for process tweaking.

Finally, from a market standpoint, if a firm like e.g. Nokia buys its next generation mobile phone chipsets from say ST, Infineon, Freescale, Qualcomm, Broadcom, NXP, TI etc (in no special order) who in turn then source their wafers from TSMC, like it or not Nokia is effectively single sourced. Based on current plans, all of the other foundries are too small to make a volume difference, just like AMD versus Intel, increasingly so as the technology road map rolls out.

These are the underlying long-term structural issues.

At the same time, the chip world is now staring into the eyes of a wafer fab famine, triggered by two or more years of rampant underinvestment. With no

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hope of fixing this problem near-term - 2010's capacity is already cast in stone, determined by 2009's (lack of) Cap Ex spend. Lack of capacity means wafers will be on allocation.

As a result, 2010 will see foundry wafer prices hit by supply and demand price increases and availability issues. Paying a higher price is one thing; not getting the wafers is another matter entirely. No wafers equals no sales - that is a 100 percent correlation and a major competitive threat.

In short, the so-called fab-lite option is structurally deceitful, operationally faulty, financially flawed; 2010 will see the fab-lite 'model' fall to pieces. Fab-smart therefore remains the only true solution.

This means continuing to build in-house fabs but outsourcing a modest amount (say 10-15 percent maximum) to foundries to both smooth the supply and demand peaks and built external fab demand high enough to justify equipping the next modular in-house expansion.

In this way any expansion in capacity enters production 'fully loaded' from the beginning whilst simultaneously improving response time to near-term demand fluctuation. The foundries do not like this option of course but this is the only real competitive reality.

Fabs have always been expensive but they are relatively no more expensive today (as a percent of revenues) than they were in the 1970s ... it is still a 'spend dollar to make a dollar' world. At the same time, the chip is still very much the heart of the product ... loose control of the chip and you will eventually lose control of your business. Never forget the old Roman proverb ... "If you're not strong enough to carry your own weapons, you will eventually end up carrying the munitions of your enemy".

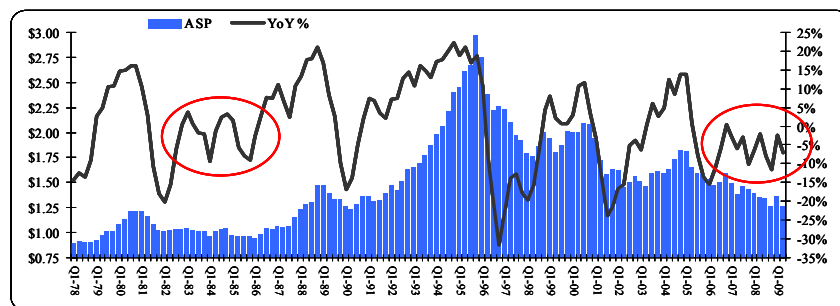
Outsourcing the wafer fab operation is NOT the right answer; you just look at the hundreds of unsuccessful fabless firms to see that, but IDM fabs do not have to be all wholly owned; there is no reason at all why a jointly owned IDM fab could not work.

The moral? As always, before answering the question make sure you have the question right first.

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IC ASP Growth Rate Peaks & Troughs, 1978-2007

Low	Gap	High	Gap
Q1-78	-	Q1-83	-
Q1-82	16	Q4-84	16
Q1-90	32	Q4-94	26
Q4-96	27	Q3-00	27
Q3-01	15	Q1-05	18
Q1-06	18	???	???
Range	4-8 Years Range	4-7 Years	

IC ASP Growth Rate Transitions, 1978-2007

Low To High	Gap	High To Low	Gap
Q1-78 to Q4-80	11	Q4-80 to Q1-82	5
Q1-82 to Q4-88	27	Q4-88 to Q1-90	5
Q1-90 to Q4-94	19	Q4-94 to Q4-96	8
Q4-96 to Q3-00	15	Q3-00 to Q3-01	4
Q3-01 to Q1-05	14	Q1-05 to Q1-06	4
Q1-06 to ???	???	???	???
Range	3-7 Years Range	1-2 Years	

Now in its 12th year, Future Horizons' annual forecast seminar is a vital link in our charter to provide industry with high quality, cost effective, market research. Whether a seasoned veteran or industry newcomer, this seminar is invaluable to executives from the semiconductor, electronics and related industries. The analysis presented at our previous industry briefings has proved both accurate and informative, and this year's event promises to be no exception.

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- 2010 Market Forecast ... The Key Factors Analysed
- 2011 Industry Outlook ... Blue Skies Or Stormy
- Industry Application Drivers ... IC Content & Forecast
- Market Outlook ... 5-Year Regional & Product Forecasts
- Supply & Demand ... Wafer Fab Capacity Trends

Jan 26, London, England / Jan 27, Geneva, Switzerland

For more details and on-line registration visit: www.futurehorizons.com

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January 2010

Exchange Rates

Figure R1 shows the weekly Euro exchange rate vs the US\$ and UK£ for 2009. Figure R2 shows the historical trend since its 1st Jan 1999 launch.

Figure R1 - 2009 Exchange Rate Trend
(Euro vs. US\$/UK£)

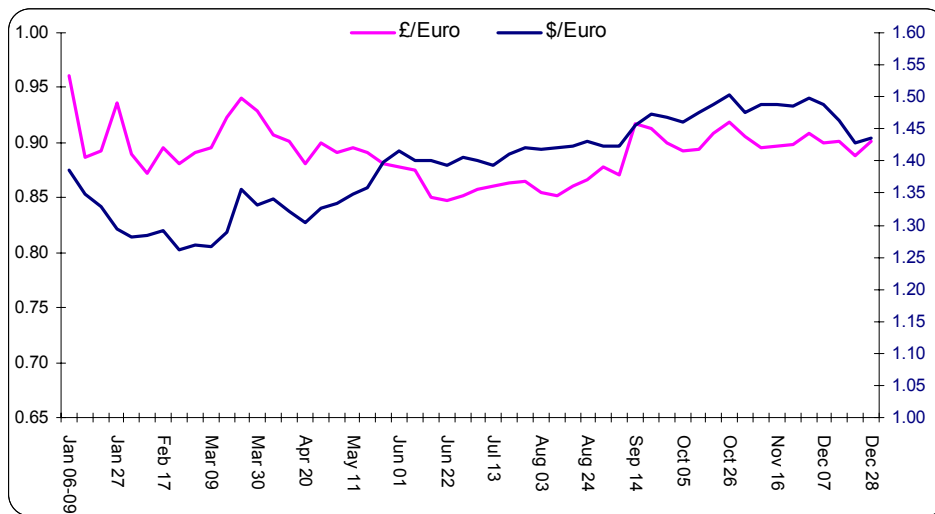
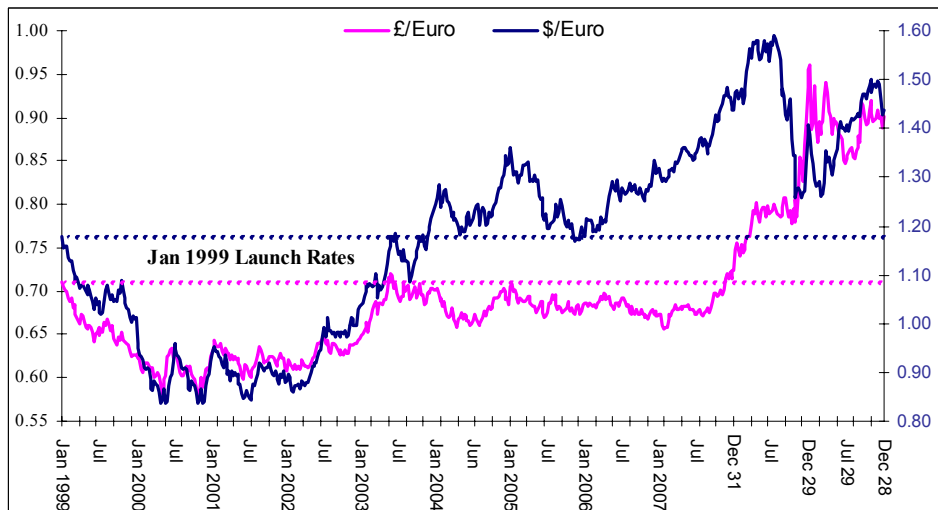


Figure R2 - Exchange Rate History, 1999-To Date
(Euro vs. US\$/UK£)



Source: Financial Times/Future Horizons

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Tired Of Over Paying For Market Research Reports Or Due Diligence?

We ARE the Global Semiconductor Industry Analysts. **We DO NOT** charge stratospheric prices for so-called 'information services', essentially a hyped-up name for ad hoc/multi-client reports. **NOR do we** hold our clients to ransom by the age-old technique of bundling up products to lock out competition. **We DO**, however, offer a **better value alternative**, with a **research efficiency** and **analysis** that is **second to none**.

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Founded in 1989, Future Horizons offers the highest possible standards in all of its activities, be it industry reports, consulting assignments, engineering support services, or industry symposia. Our current range of research reports includes:

- ❑ Global Semiconductor Update Report (12 issues p/a)
- ❑ Penn On Paper Newsletter (12 issues p/a)
- ❑ East European Report Newsletter (12 issues p/a)
- ❑ Annual Semiconductor Report
- ❑ Semiconductor Application Markets Report
- ❑ European Fabless Semiconductor Report (Optional Database)
- ❑ European Semiconductor Wafer Fabrication Capacity (Optional Database)
- ❑ Russian Electronics Industry Report
- ❑ Russia & The Other Countries Of The Former USSR IC Manual
- ❑ East European Semiconductor Report

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January 2010

Summary Of Key Reports

Brochure downloads are available from our website. Reports can be purchased online, by fax, or email and are supplied in A4-ring binder and CD-ROM format. Respect copyright laws, multi-user/site licenses are required for additional users and/or posting on company Intranets.

Global Semiconductor Update Report

A CEO favourite, this report is all a busy executive needs to keep in touch with industry trends. E-mailed monthly, the report provides a useful industry momentum indicator by compiling 12-monthly rolling charts for Units, Average Selling Prices (ASP) and Revenues broken down by total SC, IC, Optoelectronics and Discretes. Also included is a review of the world economy, broken out by region, plus a monthly feature on a key semiconductor market driver. The link between the economy and the semiconductor industry is not perfect but by measuring and understanding the impact of wafer fab capacity on lead-times and prices, and by monitoring the level of system OEM, distribution and semiconductor company inventory, more sense can be made of this fundamentally unstable industry. The report focus is on in-depth analysis and the underlying industry trends.

Annual Semiconductor Report

This report provides market analyses and forecasts of the worldwide and European semiconductor market analysed by major product and application segments. This value-added bundle is a must-have for anyone interested in the global semiconductor market and European market size detail.

Semiconductor Application Markets Report

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The Annual Semiconductor report provides a detailed analysis of the key semiconductor end-user applications and industry market drivers, collectively accounting for around 90 percent of the total IC market. Individual chapters, available for separate purchase, describe how each application works, the technology used, the unit sales history and forecast, the semiconductor content and the associated semiconductor market size. This vital research resource volume is a proven industry favourite. Individual applications are also available as separate reports; please call for details.

European Fabless Semiconductor Report

(Previously called the European Chipless & Fabless IC Design House Report)

This report covers the European and Israeli, chipless, fabless and independent IC design house community, and is essential for those planning the resources of subcontracting new product design, both in the semiconductor industry and the final system end product. It will also prove invaluable for authorities and government departments, planning and directing economic growth, as well as companies seeking investments, potential partners or acquisitions. As an added user benefit, chipless and fabless IC design house company database is available in Excel format as an optional CD extra (not available separately), with both pre-organised sorts (by country, design skill and application) and in raw data format allowing customised searches and analyses. This best-selling report has a proven track record as an invaluable research resource.

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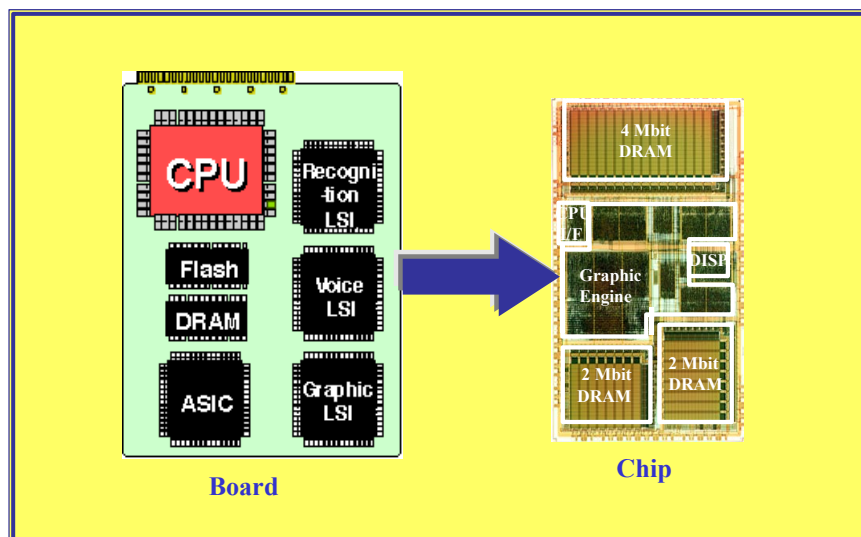
- Report Covers Around 90 Percent Of The Worldwide IC Market -

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2010 Diary Dates (Sign Up Now – Online @ www.futurehorizons.com)

Jan	26th – Industry Forecast Semiconductor Industry Briefing, London Annual analysis & forecast of the European & WW semiconductor market plus B2B Speed Networking (optional)
Jan	27th – Industry Forecast Semiconductor Industry Briefing, Geneva Annual analysis & forecast of the European & WW semiconductor market plus B2B Speed Networking (optional)
Mar	15th – Silicon Chip Industry Training Seminar, London Presented in layman's terms, this seminar provides a complete overview of the integrated circuit industry, its background, technology, manufacture & markets
Mar	16th – IC Economics Industry Workshop, London This seminar reviews the economics of the IC manufacturing industry, covering factory costs, yields, die size trends, process defects, and industry cost models
May	5-7th – International Electronics 2010 Forum IEF2010 - 19 th Annual International Electronics Industry Forum. An international forum to update market forecasts, develop new business opportunities, meet new contacts, share experiences, explore ideas, and refine strategic thinking
Jun	7th – Silicon Chip Industry Training Seminar, London Presented in layman's terms, this seminar provides a complete overview of the integrated circuit industry, its background, technology, manufacture & markets
Jun	8th – IC Economics Industry Workshop, London This seminar reviews the economics of the IC manufacturing industry, covering factory costs, yields, die size trends, process defects, and industry cost models
Jul	20th – Industry Forecast Semiconductor Industry Briefing –Mid-Term Update, London Annual analysis & forecast of the European & WW semiconductor market plus B2B Speed Networking (optional)
Sep	6th – Silicon Chip Industry Training Seminar, London Presented in layman's term, this seminar provides a complete overview of the integrated circuit industry, its background, technology, manufacture & markets
Sep	7th – IC Economics Industry Workshop, London This seminar reviews the economics of the IC manufacturing industry, covering factory costs, yields, die size trends, process defects, and industry cost models
Nov	22nd - Silicon Chip Industry Training Seminar, London Presented in layman's term, this seminar provides a complete overview of the integrated circuit industry, its background, technology, manufacture & markets
Nov	23rd – IC Economics Industry Workshop, London This seminar reviews the economics of the IC manufacturing industry, covering factory costs, yields, die size trends, process defects, and industry cost models

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For more details, please call: Tel: +44 (0)1732 740440 or e-mail seminars@futurehorizons.com

The Global Semiconductor Monthly Report**January 2010**

The Complete B2B Solution

Market Research is not an expensive luxury but a key strategic tool, not just for established firms but also for start-ups and SMEs. It is never too timely to access industry intelligence ... even the best-targeted products come unstuck due to unforeseen market or competitive developments. Likewise even the best-run companies benefit from a regular external health-check in order to make sure that their plans have not become sanitised and drifting from the real-world reality.

In the same vein, it is never too early to think about branding, even if still operating heavily in stealth mode. As such, coincident with the November 2008 launch of our new Website, **Future Horizons** has combined with **EML** and **Freshleaf Media** to provide a coherent range of B2B solutions; from industry intelligence to branding and messaging.

Future Horizons is a global semiconductor industry analyst with over 148 man-years of electronics industry experience, starting from 1962 and the first commercial IC. This experience covers the full industry spectrum, from chip design to application, IC production through to business development. **No other industry analyst has the breath and depth of experience.** Our research services span market data, industry analysis, due diligence and product positioning; our business support covers industry training through networking and contact support.

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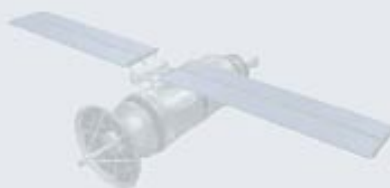
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Malcolm Penn is the founder and CEO of Future Horizons, with over 45 years experience in the electronics and semiconductor industry. He has worked extensively throughout Europe as well as in the United States, the former USSR, Japan and Korea, and was an early pioneer of pan-European research and product development collaboration in the 1970s during his tenure with ITT Europe. His industrial experience has involved him with all aspects of the management, manufacturing, marketing and use of electronic components, particularly semiconductor devices.

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