

Fortnightly
Market Wrap Up
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Warwick
Investment
Club

The WIC Market Wrap-Up

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Editorial

Quantitative Easing and the Balance Sheet Recession

By Daryl Chia, Editor-in-Chief

In a post global financial crisis world mired in the Eurozone crisis, applying the right policies to take growth back to trend has proven challenging. With the developed markets' hands tied on both monetary and fiscal policy fronts, a growing number within the Fed, ECB and BoE have questioned the effectiveness and riskiness of unconventional monetary easing via quantitative easing (QE), while on the fiscal front, economies from the U.S. and Germany to peripheral EZ states have picked fiscal austerity over expansion. In my view, such is akin to stepping on the accelerator and the breaks at the same time – quantitative easing merely acts as a short term palliative, and it is important that fiscal expansion be front-loaded in the interim so as to bring the world out of a balance sheet recession.

QE brings about an increase in forbearance risk – a system awash in liquidity suppresses debt servicing costs and keeps debt ratios high, enabling highly leveraged and sometimes insolvent agents to service their debts. QE hence merely kicks the can down the road and delays private sector deleveraging – the eventual rise in interest rates out of ZIRP will bring the issue of debt sustainability back to fore, and debt overhang of households and firms will lead to low credit growth, spending and economic growth. Further adding on to its mere short term efficacy is the fact that FX and bond market channels of transmission of QE are now weak. In the case of the former, currency wars brought about by competitive devaluation via synchronised QE across developed markets have negated currency depreciation and potential boosts to growth via exports. In the bond markets, lower yields than what they already are – i.e. almost zero – will not spur the private sector to increase borrowing, not least also because the credit channel is clogged, with consumers and firms in debt deleveraging mode. Finally, in asset markets, post-QE reflation through equities has shown itself to work only in the short run, until agents realise that QE merely drew a

nominal line under assets and reduced liquidity-related tail risks, but have not translated to a solution that can bring about robust long term growth.

Alas, the asset reflation and wealth effect of QE is meaningful only in the short term. Provision of liquidity to the banking system alleviates contraction of credit, monetises fiscal deficits, in turn keeping borrowing costs low, and causes temporary asset reflation through inducing investors to take on more risk. Still, one should not lose sight of the fact that QE is merely a short term palliative, and much more has to be done to bring economies back to trend growth and out of a balance sheet recession. Such brings us to the now famous paper written by Richard Koo, *The World in Balance Sheet Recession: Causes, Cures and Politics*¹, from which ideas I adapt in the following discussion.

How can the developed world do better in terms of its policy prescriptions? The answer lies in the need for politicians and electorates to understand the distinction between a 'normal' cyclical recession that is a product of the boom-and-bust business cycle, and one that is brought about by once excessive credit growth and the busting of an asset bubble – a balance sheet recession. In a balance sheet recession as per Japan's lost decade, consumers and businesses aim to minimise debt in an attempt to repair their balance sheet – as opposed to maximising profits – by paying down debt after the bursting of a credit bubble. In such a scenario of debt deleveraging, monetary policy is rendered useless as agents with low or negative equity do not borrow even at near-zero interest rates, giving rise to a zero or negative money multiplier. As evidence of such, while monetary base in the US during the present economic slump and in Japan during its lost decade expanded, loans extended and the stock of bank credit actually fell. By the mechanics of debt-deleveraging, such deleveraging will continue until debt levels in the private sector have fallen to long term sustainable levels, independent of monetary policy. Onus in subverting a recession then lies in the government – the only way GDP can avoid contraction is if the government takes up the private sector's slack via negative public balances and expansionary fiscal policy. Unfortunately, in today's democracies, politicians, electorates and bond vigilantes see it only as appropriate

to maintain the course of fiscal prudence in light of today's numerous reminders of the consequences of fiscal profligacy. Such has led to support of front-loaded fiscal austerity in developed markets alongside QE – steeping on the breaks and accelerator at the same time – and it seems that today's governments are repeating the same mistakes made by Japan in 1997 and 2001, and by the Americans in 1937. Perhaps what ought to be prescribed first is a Gestalt shift among electorates and policy makers on how they can work their way out of today's quagmire.

¹Richard Koo, "The World in Balance Sheet Recession: Causes, Cure and Politics", Real World Economics Review, Issue no. 58, 12 December 2011, pp.19-37, <http://www.paecon.net/PAERReview/issue58/Koo58.pdf>

US Equities

Spring in the Step of the Dow Jones and S&P 500

By Will Caffrey

This week, both the Dow Jones and S&P 500 have reached all time highs. The Dow closed the week on Thursday at 14,578.50, a 0.36% rise from the previous close. Meanwhile, the S&P hit 1,569.19, a gain of 0.41%. The gains have been driven by unexpectedly strong economic data in the US and come amid mixed European data.

US Data

The US has released some surprisingly positive economic data given the sluggish growth of 0.4% in the final quarter of 2012. Consumer spending rose by the most in five months in February, accompanied an improvement in consumer sentiment. Spending represents 70% of the US economy and in February, it increased by 0.7% following a 0.4% rise the preceding month. Consumer confidence, an indication of how optimistic consumers are about the economy, reached a 4-month high with the Michigan Consumer Sentiment Index hitting 78.6 and beating all estimates. Macy's, the US's second-largest department store, has predicted that consumer spending

is likely to remain solid throughout the year. This is driven by the increase in sentiment, which has seen the rate of savings increase in February by the slowest pace in five years. Consequently, disposable income has risen by 0.7%, following a 4% fall the month before.

Europe

With the Cyprus banking fiasco, there were doubts over the potential for the Eurozone to implement a banking union and its ability to resolve the Euro Crisis. The Dutch finance minister, Jeroen Dijsselbloem, has said that the Cyprus model should be the method used to conduct bailouts in the future, which according to some, including myself, isn't the optimal way to conduct such matters.

Elsewhere in Europe, Germany has seen some better than expected data this month. Retail sales have risen 0.4%, beating an estimate of a decline of 0.6%. Portugal this week had its junk-bond status reaffirmed with a negative outlook by Moody's Investor Service which has caused the country's largest lender, Espirito Banko, to fall 12% in trading. This comes as a number of euro area banks fall with Societe Generale SA falling 6.6% on the back of the Cyprus ordeal.

The positive data in the US and the major US indices hitting record highs, shows that consumers and investors in the US are reacting to tax increases and the US budget issues quite well. Of course, one cannot discuss recent drivers of the surge in US equities without mention of the Great Rotation that is currently under way. In a previous article, I commented on the risk-on sentiment among investors driven by the unprecedented stimulus from Central Banks and low yielding bonds. Fund managers are turning to equities in an effort to generate the level yield for investors that is just not there in the safe havens of government bonds. In light of the recent dramatic surge in equity markets, one must wonder how they will react once governments end their stimulus programmes.

The Japanese Economy Manufacturing – Bad signs for the Japanese economy

By Eleanor Gaffney, Analyst

According to official figures released on Friday, manufacturing growth in Japan fell unexpectedly, against analysts' projected figure of a 2.5 percent increase. This, coupled with a decline in core consumer prices, is a stark reminder of the economic problems that stubbornly remain in Japan. Despite a fall in the value of the yen by more than 15 percent, Japan is still a long way off reaching its goal of generating inflation of 2 percent in two years time.

Most of the decline was due to a 5.0 per cent drop in output of electronic parts. Companies may have over-estimated demand for smartphones, forcing them to cut output when orders were weaker than expected, analysts said.

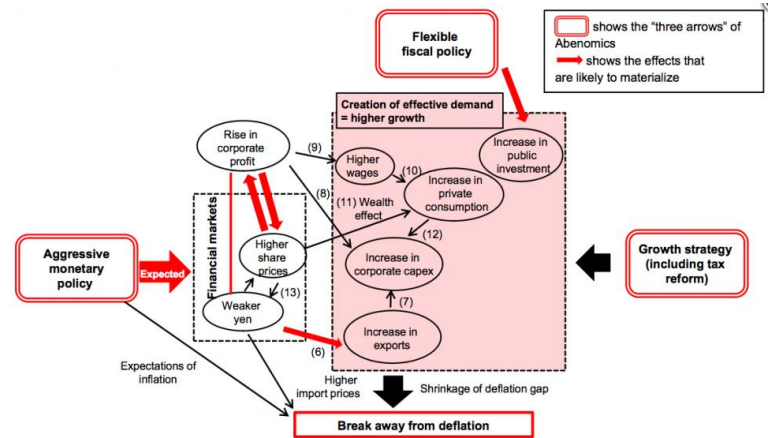
Media reports earlier this year said Apple had slashed orders for iPhone screens and other components from its Asian suppliers, hurting Japanese parts makers such as Sharp.

Unemployment rose to 4.3 percent from 4.2 percent the month before. The unemployment rate for those below the age of 35 is significantly higher, at over 6 percent.

Background

The Japanese economy has struggled with falling exports, an investment slump and deflation for a decade. This has forced the newly elected government to resort to radical monetary measures to stimulate growth. The plan, coined "Abenomics," after the newly elected Prime Minister Shinzō Abe, is three-fold. It involves a massive increase in fiscal stimulus through government spending, a massive increase in monetary stimulus through unconventional central bank policy, and a reform program aimed at making structural improvements to the Japanese economy. It is hoped these measures will revive consumer confidence and spending, investment

and exports in order to break away from deflation and the liquidity trap that has plagued Japan's lost decade.



Yet the fall in manufacturing output may not signal all bad news. The nature of the Japanese economic policy means it will take more time for the policies of 'Abenomics' to translate into sustainable growth. As economies recover overseas, exports will increase, with analysts predicting a recovery in the mid to late year. Furthermore declines in consumer prices are likely to slow in coming months as the weak yen pushes up the cost of energy imports and as fiscal spending narrows the output gap.

In another encouraging sign, companies seem to be remaining upbeat suggesting the economy remains on track for a gradual recovery following a shallow recession last year. The Markit/JMMA Japan Manufacturing Purchasing Managers survey showed overall manufacturing activity growing in March for the first time in 10 months. The Manufacturing PMI that measures the activity level of purchasing managers in the manufacturing sector stood at 50.4 in March from 48.5 recorded, a month ago. A figure above 50 indicates expansion in the sector.

It seems that while these latest figures underscore the ongoing challenge to the Japanese government, it is still too soon to draw conclusions on the success of 'Abenomics'. The next year will be a telling time for the Japanese economy and the jury is still out as to whether Abe's 3 fold plan will deliver.

Cyprus

The Significance of the Bailout Deal

By Melson Chun, Analyst

One of the recent headlines that have been dominating newsfeed is the bailout of the Cyprus. By any measure, the impact of Cyprus on the Euro-area GDP is minimal – Cyprus merely represents less than 1% of the overall Euro-area GDP. Besides having a highly sophisticated financial system that primarily facilitates Russians in their money-laundering purposes as compared to the other nations with stricter banking regulations, I argue that the entire scenario has profound implications on the Euro-area.

One of the most significant terms that were laid out by the troika was that Cyprus must foot a proportion of the funds required to bail out its banking system. In the initial discussion laid out two Saturdays ago, it was demanded that the Cyprus government pass a legislation that allows the government to take a one-time tax from the retail customers of largest banks in the country. On the surface, this reeks of hypocrisy and political pressure from the external interests group. By having to make depositors of less than €100, 000 take a haircut on their deposits, it seems that the government has made the deal more palatable to the Russian oligarchs, many of who have substantial savings in the Cyprus banking system. Making the pensioners and blue-collar workers foot part of the bill will allow the government to impose a smaller haircut on the accounts that exceed the €100, 000 threshold.

Yet, I argue that even the thought to impose a haircut on savings account with less than €100, 000 has severe implications on the solidarity of the Euro-area as a whole. According to an agreement by the troika early on, when the bailout terms of Greece were decided, it was agreed and concluded that deposits of up to €100, 000 was guaranteed under the Euro-wide agreement. This aimed to protect the ordinary blue-collar workers and pensioners from the unnecessary worry that their savings

might suffer in an unfortunate financial turmoil. The decision in Cyprus was, in many forms, a watershed because what was previously inconceivable can now be on the chopping board.

While the Euro-zone Commission has recently released a statement saying that the conditions in Cyprus was extraordinary and that it would not be a template used for subsequent bailout conditions, I cannot help but feel a tinge of scepticism on the quick change in stance by the Eurozone finance ministers. Such a view is also espoused by the Chief of Goldman Sachs Asset Management, Jim O'Neill.

Interestingly enough, investors seem unfazed by the recent developments and equity markets have continued to push higher. Taking it broadly, the continuing decision by Cyprus to remain in the euro-area might not be taken that well. Extremely conservative estimates by the European Commission predict that the economy will probably shrink by 15% over the next 12 months and 25% over the next couple of years.

Being a realist rather than a formalist on many levels, I certainly do not think that this is a time where political ideology is preserved at the expense of the wider population, many of are struggling to meet their daily needs. What good is a monetary union that plunges the country into abject poverty and suffering in the foreseeable future? Strict austerity measures have already pushed many of the debt-ridden nations into worsening recession, which each successive quarter contractions getting worse from the preceding quarter.

Cyprus could have set matters straight – that an orderly exit can be made. Such an ideological shift could do much more good by setting a strong precedent such that when exigencies call for it, arrangements can be made for an exit and that the financial markets understand and appreciate that it can be done fashionably.

Italy

Italian Political Debacle – Where we stand now

By Marco Ross, Co-Editor

Before the Italian election of 24-25 February 2013 market expectations were tilted toward a Bersani-Monti win that would ensure political stability and the continuation of Monti-championed reforms in the Eurozone's third-largest economy. When it became clear that Bersani and Monti were unlikely to secure a majority in the Senate, stock markets dropped sharply with the Italian MIB leading the fall from 16,884 (25 February intraday high) to its 26 February close at 15,552. With a hung parliament, the Eurozone seemed once again mired in uncertainty; despite this, the medium-term market reaction was somewhat muted. Nevertheless, the debacle continues to unfold and recent events threaten to refocus attention on Italy. This article first outlines the election outcome, subsequently discusses the aftermath with regard to government formation attempts and finally considers future prospects.

Election Outcome

Italy's parliament consists of two chambers: the Chamber of Deputies (lower house) and the Senate (upper house) which rank equally in importance. A majority in both is needed for effective government.

Pier Luigi Bersani's centre-left alliance secured 29.55% (340 MPs) of the vote in the lower house followed by centre-right Silvio Berlusconi's 29.18% (124 MPs), Giuseppe Piero Grillo's 25.55% (108 MPs) and Mario Monti's meagre 10.56% (45 MPs) – Italian electoral law ensures that the party gaining the most votes is automatically accorded 340 seats. In the Senate Bersani gained 113 seats, Berlusconi 116, Grillo 54 and Monti just 18.

As such, though holding a majority in the lower house, Bersani and Monti are unable to form a majority in the Senate, thus yielding a hung parliament. The surprising result was caused by Grillo's unexpectedly robust

performance whose anti-establishment Five Star Movement party secured the most votes of any single party in Italy (though slightly lagging behind Bersani's Democratic Party if overseas votes are considered).

Aftermath: Government Formation Attempts

Deadlock has characterised Italian politics post-election with two of the three leading alliances (Bersani's, Berlusconi's and Grillo's) needing to form a coalition in order for a government to be established. Being the leader of the alliance with the most votes, Bersani is accorded the right to be the first to attempt to form a government.

Grillo has been adamant on ruling out any coalition as per his election pledge; demonstrating this, immediately after the election, Bersani proposed forming a reformist government together with Five Star Movement, only to be met with insults and resignation calls by Grillo. Furthermore, Grillo on Wednesday rejected supporting a minority government under Bersani.

Just as an alliance with Grillo did not come to fore, a grand coalition between the centre-left and centre-right failed to materialise. Berlusconi agreed to a coalition on the condition that Bersani's alliance would back the election of a centre-right successor to Italy's current president Giorgio Napolitano, who is to step down in mid-May; however, Bersani recently rejected this idea. As such, over one month after the election, little progress has been achieved in solving the political debacle, and this is starting to reflect in Italian 10y yields which have ticked up 25 basis points since the end of last week.

Prospects

Several paths of action now present themselves; however, none come without substantial obstacles or limitations. Given an ongoing impasse, repeat elections in a few months' time appear most likely. However, current polls suggest little change to voters' inclinations, though support for Grillo and Berlusconi would be set to slightly increase.

Somewhat less likely, the possibility of forming a grand coalition – even if it is certain to last only relatively briefly – does not seem entirely far-fetched despite

Bersani's current opposition to it. Berlusconi is in favour of such a coalition yet exerts considerable pressure through the aforementioned questionable demands.

Several alternative ideas have been floated such as Napolitano allowing another senior figure from Bersani's party to lead coalition negotiations or appointing a technocratic prime minister, the latter of which would be faced with serious political and public opposition. Talk of minor signs of fragmentation within the Five Star Movement also circulated and some hope that this will be sufficient to lead to a Five Star Movement-Bersani coalition though this currently seems highly improbable.

Despite Napolitano's stated eagerness to avoid repeat elections and his decision – contrary to expectations – to remain in office until his term terminates on 15 May, it would come as a surprise if the deadlock is resolved and new elections are averted. A small chance for a grand coalition does seem to remain, however. Regardless of the final outcome, it is indubitable that the current elevated uncertainty is not helping the ailing Italian economy and – coupled with the Cypriot situation – threatens to tumble the Eurozone back into crisis mode.

Renewables

Has the Sun Set for the Solar Industry?

By Richard Low, Analyst

Whether or not you believe in global warming, governments have pumped billions of dollars into the fledgling solar industry. Almost overnight, many of these companies have grown into global companies. You might never have heard of Sun Tech, Energy Conversion Devices (ECD) and Q-Cells, but these companies grew phenomenally from 2005 to 2008. In fact, Suntech's owner was said to be China's richest man when its share price peaked in March 2008 (See figure 1 in *Appendix*).

While these companies have all at one time held the honour of being the world's largest solar manufacturer,

they have also all gone bankrupt – ECD and Q-Cells in 2012 and Sun Tech just this month. There had been warning signs (as early as 2008) that the solar industry would be facing difficult times and this could partially account for the fall in share prices.

This article carries a cautionary tale of the solar industry and explores three “macro” factors that have driven dozens of solar companies out of business.

Collapsing Silicon Prices Changed Relative Competitiveness

Most commercial solar cells have two main inputs – the underlying technology and silicon. In 2005, there was a surge in the demand of solar devices and for a brief period of time, silicon demand outstripped its supply, pushing silicon prices over US\$400 per kilogram. But as new sources of silicon were made available, prices started to fall and currently, they are now \$16 (less than 5% of their peak prices). This meant that manufacturers, who had signed long term contracts with fixed silicon prices, found it difficult to compete with new entrants.

Fluctuating silicon prices has also affected the relative competitiveness of competing solar generation technologies (See Figure 2). Decreasing prices of silicon meant that technologies that used less silicon were less price competitive than when silicon prices were higher. For example, when silicon prices were hovering around US\$400, thin-film technology was thought to be the future of solar generation because it used considerably less silicon and was as much as 20% lower than the cost of crystalline silicon cell equivalent. But when silicon prices came down, firms that had built thin-film factories suddenly found themselves less competitive against their silicon intensive cousins.

Evolving Technology Created A Last Mover Advantage

Converting light energy into chemical energy is not a simple process and unlike other types of electricity generation, technological options available in Solar look as varied as the choices available in the smartphone market (See Figure 2 in *Appendix*).

There are lessons that we can draw from Figure 2.

Firstly, there are many ways to generate solar power and amongst the competing technologies, there are bound to be winners and losers. According to one estimate, the level of technology innovation means that old technology is phased out in just 5 years and this creates a “last mover advantage”. This means that for an incumbent to survive, it would need to continually pick the right technology to invest and champion correctly at least once every 5 years.

The second conclusion (which is less direct) is that efficiency does not equate to profitability. For example, multijunction cells have made great efficiency gains from under 16% to over 44%. However, the technology is currently not commercially viable due to the exotic semiconductors like gallium arsenide and expensive components like light concentrators to work under normal conditions. What does mean is that there might be still be a long way to go before solar technology reaches its full commercial potential and with the advancements in nanotechnology, Solar is likely to only get cheaper.

Hangover from Government Subsidies

Recently, many governments have stopped funding or at least scaled back on their solar ambitions. The ebbs and flows of government support for solar cells have had a real impact on final demand. Last year, when the UK government decided to half subsidies for the feed in tariff for solar devices, new solar installations fell by 90%. Many developed countries have flip-flopped on the solar issue and this has been akin to switching on the demand for solar on and off, hurting solar companies which cannot switch their factories on and off just as easily.

On the supply side, lavish Chinese subsidies have created large solar manufacturers. In fact, 7 of the top 10 manufacturers are Chinese companies and these manufacturers compete on the basis on volume and cost and have been (rightfully or wrongly) accused on dumping activities, lowering prices and profit margins throughout the whole industry.

Get Ready for More Consolidation

The solar industry will likely see would likely be greater caution and more consolidation. While valuations are relatively cheaper (which might make this a good entry point), the technology and regulatory dynamics make it difficult to choose the long term winners in this industry, where many past giants have fallen and many more are likely to follow.

Technology

Blackberries – back in season?

By John Peter Ong

Research in Motion (RIM) surprised on the upside over the past week by reporting a \$98 million profit in the past quarter, garnering an EPS of 19 cents per share, up from a loss of 24 cents per share in the same period last year. This performance surpassed many consensus estimates, some of which projected further losses, and has rekindled investor optimism in the company. In this exciting spring week issue, we zoom in on the smartphone industry, which is always a fun place to start any discussion on equity analysis. To this end, let us consider the prospects and pitfalls of going long RIM.

Fresh again

Possibly the biggest draw to purchasing RIM shares is its return to profitability. Pertinently, this recovery is due largely to the release of its latest smartphones equipped with the Blackberry 10 operating system, suggesting that this is a sustainable trend based on the company creating value for its users, rather than a capricious return of consumer interest. Moreover, since the Z10 and Q10 were launched late into the quarter, the figures do not include sales in the US and Asia – a region where the Blackberry

has enjoyed particular success – indicating that these positive earnings could merely be the beginning of bigger turnaround. Should RIM manage to release its upcoming Curve line with similar success, it is likely to

further enhance its net income, adding to shareholder wealth.

Another case to buy RIM stock is that its market price arguably represents good value for now. Given that investor sentiment for RIM has generally been pessimistic – short interest rose sharply for its earnings report on Thursday – stock prices are unlikely to have overpriced growth prospects, allowing significant appreciation should the company maintain growth. This is in stark contrast with Apple stocks last year, which were possibly overrated by investors; though highly profitable, Apple stocks tumbled more than 30% since its high last September, elucidating the importance of purchasing shares of a company which is not only profitable, but which few people expect to be profitable as well.

Buyer beware

However, the RIM earnings report also came with bad news. Its revenue fell from \$4.2 billion a year ago to \$2.7 billion, and its subscriber base shrunk by 3 million, ending up with a total of 76 million. While tanking sales figures is a red flag for any firm, it is of particular concern for mobile phone companies, which thrive on market penetration to build a critical mass of interface users. This is especially so for the Blackberry Messenger (BBM), one of RIM's key strategic assets, which is only as useful as there are Blackberry users to connect with. Given RIM's business model and product offerings, sales growth is arguably no less important than profitability when analyzing the viability of the firm.

Despite this bleak picture, there are certain mitigating factors to consider. First, RIM is currently undergoing an overhaul, refreshing both its operating system and smartphone lines. Users could take some time to warm up to the new interface, and numbers from US and Asia might bolster weak revenues. Moreover, RIM has clearly outlined its strategic direction to roll out mixed price phones moving forward in an attempt to shore up its declining market share, demonstrating its focus on this key factor of success. On the whole, while RIM exhibits

enticing profitability and value, it also suffers dwindling market share. Investors clearly did their share of soul searching after the earnings report, with prices jumping by 10% following the release, only to finish lower by 0.8%. Any purchase of RIM stock should be a vote of confidence in its business prospects and the success of its new strategic focus, factoring in a firm belief that Blackberry will manage to grow its user base, or at least protect its industrial niche. Picking fruit sometimes requires a leap of faith in the producer – the Blackberry happens to be no exception.

Research Team Application Essay

The Eurozone Crisis

By Jonathan Denham, 1st year BSc Economics Undergraduate

Q: How the Eurozone financial crisis came about and one trade recommendation you have based on your view of how the crisis will pan out.

Over the past few years not a day has gone by without the Eurozone crisis being mentioned in some form in the news, with many journalists commenting on bailout plans, the persistence of recessions in peripheral countries, high youth unemployment and more recently the possibility of a break up of the Euro. But what caused the Eurozone crisis and why is there so much talk of PIIGS? I shall cover 2, not obviously interlinked, reasons for the EZ's current pitiful state: It not meeting the conditions of an optimal currency area and the widespread accumulation of public and private debt by peripheral countries.

Optimal Currency Area

The theory of the Optimal Currency Area (OCA) was established by the economist Robert Mundell, winning him a Nobel Prize for his work. It seems strange to think that he is sometimes nicknamed the godfather of the euro, considering how few of the requirements of being an OCA the euro meets. Many would blame the EZ crisis on the 2008 financial crisis, whereas others believe that

the Eurozone should not have come into existence at all, mainly due to the EZ not qualifying as an OCA. One key condition of being an OCA is that all countries have synchronised demand shocks. This would allow monetary policy to be used to manage fluctuations in the members' economies effectively. However, this condition was not met, with many periphery countries, such as Ireland, facing higher growth rates than countries such as Germany. These periphery countries would have benefitted greatly from tighter monetary policy, but instead were burdened with loose monetary policy followed by the ECB, benefitting the slower growing core countries, but causing the peripheral economies to overheat, fuelling the bust.

Debt Problems

The convergence of EZ countries' interest rates at such a low level is a significant cause of the current crisis. Joining the Eurozone allowed peripheral countries to borrow at record low interest rates, an opportunity that was often used to borrow unsustainable amounts. In theory, this should not have occurred: the Stability and Growth Pact (SGP), signed in the late '90s, prevented government's running a budget deficit more than 3% of GDP. This, however, did not transpire. Germany was the first country to break the pact, with Greece never sticking to it and even manipulating its borrowing statistics to be allowed in the EZ in the first place. Although strict enforcement of the SGP would not have prevented Spain accruing a high level of private sector debt, it could have avoided countries, such as Greece, getting into such extreme difficulty due to their high level of public debt, making the crisis so widespread.

Many would argue that the fate of the Eurozone was sealed since its introduction all the way back in 1999 – many people of the time thought it, like investing in dot-com companies, as a great idea. The fact of the matter is the creation of the Eurozone, whether it should have occurred or not, has resulted in crisis. Crisis creates uncertainty, and where there is uncertainty, there is money to be made.

Note: Trade recommendation has been excluded by the editor.

Research Team Application Essay

The 2008 Global Financial Crisis

By Zak Simpson, 1st year BSc Mathematics and Philosophy Undergraduate

Q: Explain how the 2008 Global Financial Crisis came about, with particular focus on elucidating the role of securitisation, proliferation of derivatives and moral hazard.

Lehman's failure in August 2008, possibly the peak of the global financial crisis, was the largest bankruptcy in American history. It outstripped any previous financial incident in its gravity, revealing that the 'Credit Crunch' had gone much further and deeper than policymakers had suspected. As The Economist observed, what was emerging was not simply a subprime crisis but also a banking crisis, a crisis of liquidity and a crisis of collateral. The causes of such a global meltdown can arguably be traced back to the decisions made in the securities and derivatives markets months before.

The very beginnings of these crippling seizures that occurred within the interbank market can be found in the inflation of asset prices during the late 1990s and early 2000s. The Case-Shiller house pricing index indicates that over this period, American house prices rose 124% and British home prices rose 194%. Significantly, owing to this bubble in the housing market, a huge volume of subprime borrowers were able to take out mortgages against these properties in the hope that house prices would continue to rise.

What made this development so dangerous was the process of securitisation. This was a procedure developed roughly thirty years ago at Salomon Brothers' in an attempt to free up banks' balance sheets. The major driving force behind the need for this process was the capital adequacy requirements imposed on banks, which called for them to hold enough capital to be able to meet withdrawal demands from customers. Since the capital held by a bank was finite, its lending capabilities were limited. Something was needed to free up the balance

sheet to allow more loans and more profit; hence securitisation. In short, this turned illiquid loans into securities with appeal and liquidity, and banks were then able to sell exposure to their loan book via a Special Investment Vehicle designed to issue securities based on cash flow from the loans.

This process, however, did not originally account for the possibility of default on the loans since in the US, most mortgages are guaranteed by Fannie Mae and Freddie Mac. But owing to the house price bubble, these federal institutions as well as other mortgage providers had expanded into the subprime market; making a default on the asset-backed security issues increasingly likely. When the housing market began to slow in 2007, this danger became a reality, making many of the issues worthless. Loan books faced significant write-downs and mistrust grew dramatically between banks. This spread quickly, as investors and institutions realised the hundreds of billions of dollars locked into these exotic securities in portfolios around the world could be worthless.

Furthermore, the growth of increasingly complex products - through the repackaging of these securities - made ascertaining their true worth difficult. One example is collateralised debt obligations (CDOs) - pooled groups of loans and assets of varying risk levels

put together to be securitised and sold off in different tranches. Due to their complexity, the risk/reward ratio of CDOs was obscure. This market boomed to \$180 billion during 2007; however as uncertainty grew around their underlying mortgages, institutions realised the riskiness of their exposure to CDOs and feared the exposure of their peers. These fears were exacerbated by the extensive nature of the derivatives markets, which traded many products using these risky securities as their underlying. The sheer volume behind these markets made them highly sensitive to changes in investor sentiment. Consequently, banks became unwilling to lend to each other and liquidity in the interbank markets dried up.

All the while, while banks attempted to bolster their overexposed positions, there emerged indications that the ethos of banking needed to be changed. As 'toxic waste' assets were continually discovered on banks' balance sheets, it seemed bankers had neglected their long term responsibilities in favour of short term profit. The pay and incentive structures in the sector encouraged short term gain over long term welfare and arguably moral hazard played a subtle but ever present role in the emergence of the global financial crisis.

Appendix (Figures for *Has the Sun Set for the Solar Industry?*)

Figure 1 – Beware of the rising and setting sun

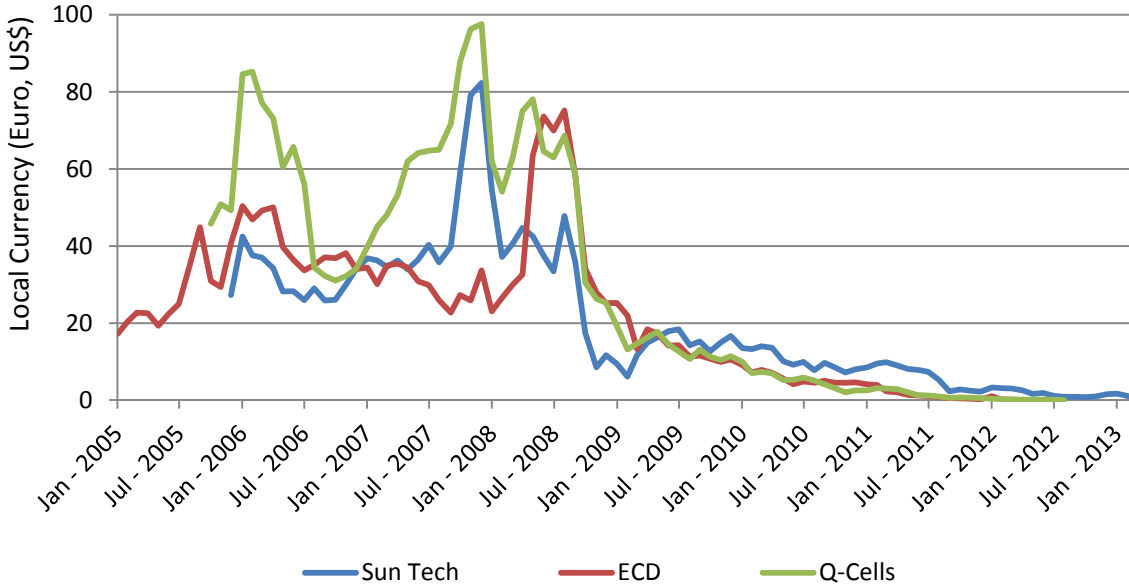
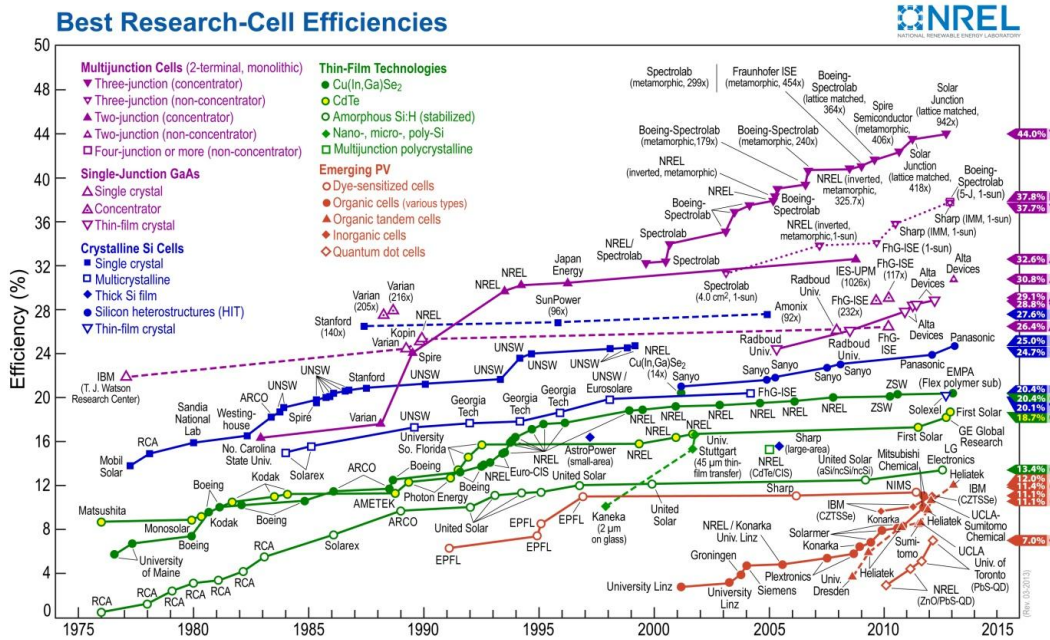


Figure 2 – Evolution of Solar Generation Efficiencies¹



¹ This is taken from the National Renewable Energy Laboratory. The picture can be access here at: http://www.nrel.gov/ncpv/images/efficiency_chart.jpg.

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