

6 April 2010

## Client Letter for Month Ending 31 March 2010

In March our performance was very much better than our benchmarks. Our USA reference account increased by 10.9% and our Australian reference account by 8.2%.

After 10 months and allowing for all paid and accrued fees US \$10,000 invested with Bronte is now worth US\$14,487 and for our Australian accounts A\$10,000 has increased to A\$13,368. Although the Australian account has not achieved the same percentage gain as the US account we are nonetheless pleased with its performance which has been against the headwind of a very strong Australian currency.

Our returns however have come in spurts. We had unsustainably good performance when we started our fund. In the middle four months we lagged indices by one or two percent per month – and we had slightly negative returns. We have now recovered all that underperformance. [This is a relief, in part, because we had a large client who invested on the exact day our fund peaked.]

### New positions

After spending much of the first quarter trawling through the wreckage of American small regional banks we changed tack in March to increase our short positions. Most notably we are now short **First Solar** and discuss it later in this letter.

We have also shorted a number of very hot speculative stocks in the resource sector some of which have been heavily promoted by brokers or promoters we believe are dodgy.

We think that honest large-caps on average offer reasonable value (especially in the United States). However we are finding rampant frauds and stock promoters in the small and mid-cap area.

As per usual we will discuss some of our shorts based on fundamental analysis or straight over-valuation but we will not discuss shorts where our reason for being short involves issuer or promoter fraud.

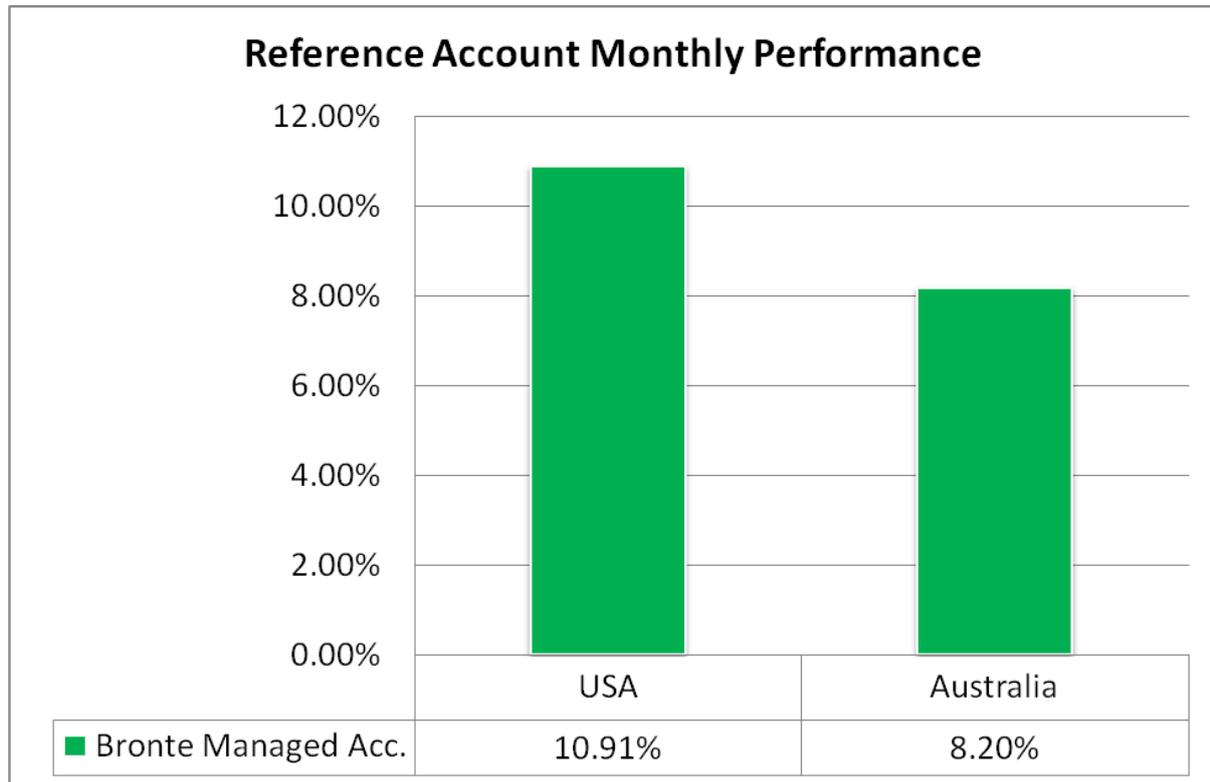
### Portfolio Management

	Long	Short	Net Long
USA Reference Account	108.0%	30.8%	77.2%
Australian Reference Account	108.2%	32.0%	76.2%

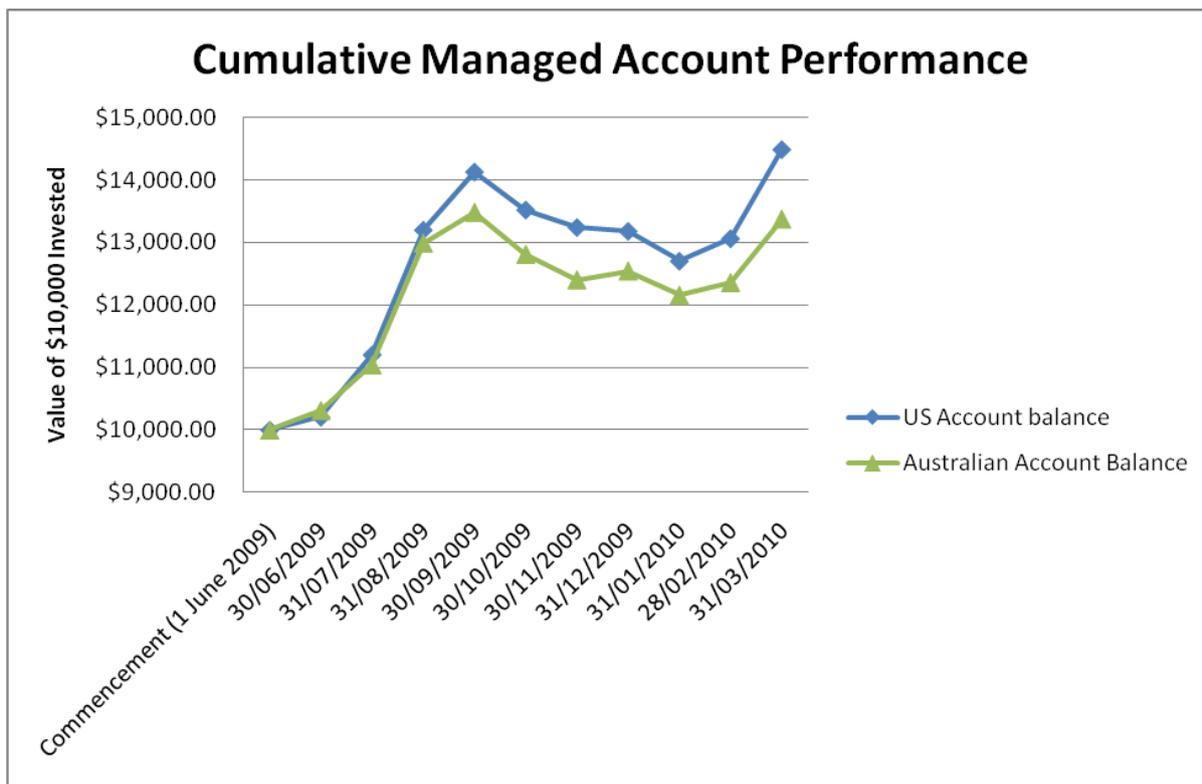
The long percentage in the accounts has been creeping up. This tends to happen when the markets appreciate because our shorts go up (costing us capital) and our longs go up. Leverage necessarily increases. We are in the process of slowly trimming positions to offset this effect. Contra: when markets decline our shorts will hopefully return capital to us which will enable us

to increase long positions at times stocks are weaker. Hopefully (but not necessarily) this will result in us tending to buy low and sell high.

## Performance Data <sup>1</sup>



<sup>1</sup> All performance data is adjusted to allow for an accrual of the annual performance fee.



## Case study: our short on First Solar

Investing in technology stocks has lots of traps for neophytes – and by-and-large we are neophytes so we do not do very much of it. We however spend a lot of time thinking about it primarily because we are scared of what technology can do to other businesses. (The demise of many low-tech newspapers provides a good demonstration of why – as investors – we should think about technology.)

Technology offers value creation like few other industries. In Australia Cochlear has created enormous value and improved the world. It can literally plug a bionic ear into someone's brain-stem and get them to hear. And the stock has paid about 20X – which is better than anything in our portfolio. Many of the biggest fortunes were made in technology. But technology – and specifically technological obsolescence has thrown many a fine company to the wolves. Palm for instance is likely to go bankrupt even though the concepts it pioneered are in everyone's pocket.

We do however have a framework to hang around our (limited) technology investments. A technology, to be a really great investment, must do two things. It must change part of the world in a useful way – a big part of the world is better of course – but you can be surprisingly profitable in small niches. And it must keep the competition out.

In technology the competition is remorseless. In most businesses the competition might be able to do something *as well as you* – and it will remove your excess profit. People will build hotels for instance until everyone's returns are inadequate but not until everyone's returns are sharply negative. Even in a glutted market a hotel tends to have a reason to exist – it still provides useful service. And someday the glut will go away so the hotel will retain some value.<sup>2</sup> In most

<sup>2</sup> Unfortunately the hotel is usually mortgaged – and the value often reverts to the debt holder.

businesses the game is incremental improvement. If you get slightly better you can make some money for a while. If the competition gets slightly better you will make sub-normal returns until you catch up.

In technology the threat is always that someone will do something massively better than you and it will remove your very reason for existence. Andy Grove – one of the most successful technologists of all time (Intel Corporation) – titled his book “Only the paranoid survive”. He meant it.

If your technology is obsolete the end game is failure – often bankruptcy. Palm will fail because Palm no longer has a reason to exist. If we wait 20 years Palm will be even more obsolete – but the hotel glut will probably have abated. *Nothing left in Palm is likely to have any substantial value. Businesses that produced plenty now, produce nothing then.*

Surprisingly, changing the world looks like the easy bit. Plenty of companies do it. The problems are in keeping the competition out. Only a few do that (Microsoft, Google are ones that seem to). Hard drive makers changed the world (they allowed all that data storage which made things like digital photography and internet multi-media possible). But they never made large profits – and they trade at small fractions of sales.

The limited technology investments we have are not driven by any real understanding of the technology. Sure we try – but if you ask us how to improve the laser etching on a solar panel then we will not be able to help. The driver of our investment theses in almost all cases is watching the competition.

A simple example is Garmin. We have a small short position in what is a very fine company. Garmin – once a small avionics company - led the mass-marketing of satellite navigation and allowed John – without stress – to find his son's Saturday sports game. Sat-nav it seems has saved many marriages and meant that school sports teams do not run short players because dad got lost.

Garmin has over a billion dollars cash on the balance sheet – and that cash represents past profits. It has changed the world – and thus far it has been well remunerated.

The only problem is that they can't keep the competition out. Nokia has purchased a mapping company. Iphone now has a Tom-Tom app, downloadable for \$80. Soon sat-nav will be an expected application in every decent mobile phone. Google has mapping technology too and will embed it into their android phone. Eventually the maps will be given away because people might book hotels using their sat-nav device whilst they are travelling. [It is darn useful to know where a decent hotel with a spare room is when you are on the road.]

Garmin has a great product. They have improved my world. The only problem is that they can't sell their product at any price that competes with “free”. Garmin's business is going the same direction as Palm. Bankruptcy however is only a remote possibility – they have a billion dollars on the balance sheet and unless they do something really stupid on the way down they will remain a profitable avionics business.

*Is it fair that Palm is facing bankruptcy? Or that Garmin is being displaced? We don't think so – but then capitalism is not necessarily moral or fair – but it does produce goods and services quite well. We don't invest on the basis of fair – we invest to make you good returns.*

## ***The solar industry – and the possible failure of the good***

First Solar is a company that improved the world. It drove the cost of production of solar cells to quite low levels and made utility-scale solar farms viable with only modest subsidies. There are some places where solar is now viable without subsidies.<sup>3</sup>

Our biggest short position though is First Solar – a company we have little but admiration for. There is a distinct possibility that First Solar's business will fail in the same way as Palm or Garmin. It won't be fair – but fairness has nothing to do with it. Like Garmin it probably won't go bust because it has a billion dollars in liquid assets on the balance sheet – assets which represent past profits.

Moreover we suspect that First Solar's profits are about the same as the rest of the industry put together. The stock still trades with a high teens trailing price-earnings ratio – a fading growth stock. *It hardly looks like a failure.* It is a strange conclusion to come to. So we should explain how we got there. To do that we need to explain how a solar cell works.

### ***How a solar cell works***

To make a solar cell you need three things.

- 1). A substance which is excited (i.e. spits off electrons) when a photon hits it.
- 2). A layer which separates the electrons. This layer is usually a “semiconductor” which means that electrons go through one way and cannot go back.
- 3). Something at the back which conducts the electrons away.

### ***Thin film versus wafer***

Traditional solar cells were made with a semiconductor ingot cut to a thin sheet. On one side it was “doped” with a substance that kicks out electrons. The other side was laced with wires to conduct the electrons away. This was expensive.

There were generally two types of ingot – monocrystalline – where the wafer structure was perfect or near perfect and polycrystalline which had visible crystals in the wafer. Monocrystalline wafers are primarily used for computer chips (where atomic level imperfections are problematic) and are expensive.

Polycrystalline silicon is cheaper. For most large-scale uses polycrystalline wafers were sufficient. These have about a 17 percent conversion rate – which means that 17 percent of the photon energy that strikes them is turned into electricity.

The ingot itself was a substantial part of the cost of a photovoltaic cell. Polycrystalline ingot used to sell for \$450 per kg.

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3 One way amuses us greatly. Walmart started putting solar cells on the rooftops of many of their super-centers in the Southern United States. They did this originally because of implicit subsidies. However the test centers showed something quite interesting. Good solar panels turn quite a lot of the energy hitting the rooftop into electricity which is conducted away. That energy does not wind up as heat in the building – and the cooling load of the building went down. The rooftop solar installation may not have been justified by the electricity output alone – but combined with lower

First Solar (and others) developed a process for making solar cells with considerably less semiconductor material. They have a Cadmium Telluride process which vapor-deposits semiconductor at atomic level thickness and comes up with a cell that is now exceeding an 11 percent conversion ratio.

This company is a technological wonder. Glass goes in on one end of the manufacturing process and comes out as solar cells at the other with next to no human intervention. Labour is used only when it comes to putting frames around the glass and for similar tasks.

This was revolutionary – it made cheap solar panels and hence made possible commercial scale plants like this 1.4 megawatt roof installation in Germany. This is enough to supply a few hundred households – not earth shattering – but a complete revolution in the solar industry.



We can think of few companies which have pushed a technology so far and with such high environmental benefits. *Companies like this will allow us to maintain a modern lifestyle whilst addressing greenhouse issues.*

Still for all the benefits of First Solar's cells, they are inferior in many important ways to a polycrystalline cell. Their efficiency is lower – which means you do not get as much solar energy off the constrained roof space. Secondly, whilst they save a lot on the semiconductor part of the manufacturing process they have to use more glass, more wires etc to generate the same amount of solar electricity. Each cell generates less electricity too so inverters, connectors, installation all cost more with thin film. Thin film also degrades over time. First Solar warrants their performance over their lifetime – but with the warranty being for lower levels of performance in the second decade of operation (google the Staebler-Wronski effect for a non-trivial explanation). Thin film does however have some advantages in low light - keeping a slightly greater proportion of their peak capacity.

Indeed the main advantage of thin film is cost – and that cost advantage has been driven by the cost of the semiconductor component. After all ingot did cost \$450 per kg.

That cost advantage made First Solar absurdly profitable – and they used that profit to grow into a behemoth. Revenue has grown from \$48 million to over \$2 billion. Gross profit has grown to over \$1 billion. We do not want to tell you how far the stock ran for fear of invoking insane jealousy. This stock would have made Berkshire Hathaway shareholders jealous.

But remember – all of that was predicated on a cost advantage (almost all other things being inferior). And that cost advantage is predicated on expensive semiconductor material.

## ***Competition cometh***

To make money in technology you need to do two things. Firstly you need to change the world (which First Solar clearly did) and secondly you need to keep the competition out. Alas very few businesses manage the second trick.

The competition came in a couple of forms. Firstly it came from **Applied Materials**. Applied Materials, or AMAT (as the company is known) is the most important company in the world you have never heard of. It is the dominant maker of capital equipment that goes into semiconductor factories and it is thus the company that – more than any other – provides the kit to keep Moore's Law active.

AMAT has tried competing head-on with First Solar in the thin-film space. AMAT developed the vapour deposition equipment that made large-screen LCD televisions possible. This entails deposition in large sheets (5.6 square meters) which are then cut down into several large screen TVs. An imperfection in the vapour deposition shows on the TV as a bad pixel.

AMAT appropriated this technology for solar. The silicon semiconductor is not as efficient as First Solar's Cadmium Telluride technology – and it is equally subject to the Staebler-Wronski effect, however they can do much larger panels than First Solar (with comparably lower wiring, inverter and balance of system costs). AMAT's thin-film business could do some damage to First Solar – but it is unlikely to kill it. (Indeed AMAT appears to be de-emphasizing that business for the reason discussed below.)

Far more important have been developments in the wafer business. AMAT (often the protagonist) has developed wire saws for cutting wafers thinner and thinner. They are now 80 microns thick. These wafers are so thin that they flutter down in air and break if held on their side. AMAT will of course sell the whole kit for handling these wafers – including laser etching material and other steps in the manufacturing process. **Much less semiconductor is needed in the wafer business.**

But worse – the price of ingot has fallen – and spot prices are now \$55 per kg – which is a lot less than \$450. The cost of ingot is still falling. First Solar's advantage is entirely dependent on the fact that they use much less semiconductor than wafers – an advantage that disappears entirely as wafer prices fall. At that point all of First Solar's many disadvantages will shine through.

We are trying to work out the cost-structures of the polycrystalline manufacturers – but it looks to us that the extra glass and other balance of system costs that First Solar panels have are getting close now to completely removing the advantage of low semiconductor material usage.

If that happens though, First Solar is toast. It probably won't file bankruptcy because it has so much in past profits to fall back on – but it will be every bit as obsolete as a Palm organiser is now or a Garmin car navigation system might be in five years.

We do not wish failure on First Solar – and if we are right it could not have happened to a nicer company (no irony intended). Capitalism is not fair – and technology investment is particularly unfair.

We don't make money from fairness. We make money from getting the business analysis right and betting on (or against) the right business – and in this case we are betting against the most successful company in a massively important growth industry.

If we are right (and we think we are) then we will make money from the demise of a company that has **much improved the world. We like to think our business is noble. And it is sometimes – but in this** case we can see why people dislike short-sellers. Their opinion however is not our business.

Thank you for placing your trust in us.

John  
Simon

