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A catalyst for division: Brexit, UK tech and the end of Britain

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It's time for me to talk to you directly about the most critical financial and political issue of our lifetimes:

Brexit.

It's not in my nature to be a pessimist but I have become deeply concerned over the summer with the trajectory of politics circumstances in the UK.

That's why I am devoting this month's issue of *Frontier Tech Investor* to discussing what I feel are the most pressing Brexit-related issues affecting the UK that are simply not

getting discussed in the media.

The simple fact is there have been trends under way for decades that have brought us to the uncertain period we now find ourselves in and they were going to have to be addressed sooner or later.

Brexit is a perfect catalyst for instituting the kind of visionary thinking that would help reset the inequality so many people are concerned with, but the problem is we are not blessed with visionary leaders in Westminster.

I feel strongly that the gap between the rich and poor is going to get wider, UK

standards of living are going to deteriorate and manufacturing is going to disappear in Great Britain. Believe it or not, this was going to happen with or without Brexit but the plebiscite was a catalyst for change. Unfortunately, the opportunity is being blundered.

Remember this question?

Should the United Kingdom remain a member of the European Union or leave the European Union?

It's a very black and white query, yet the political response to the people's decision is anything but clear. In fact, it is reasonable to say that



every effort has been made to fudge exactly what “leave the European Union” means.

I am writing to you now about this topic because I wanted to get this note out before negotiations are concluded.

Once the negotiations are concluded there is a very real chance Parliament will not vote to support the proposed treaty. Then we are going to have a general election and it is going to be one of the most divisive in the country’s history.

The long-term prosperity of the nation is literally hanging in the balance. If you’re an investor of any hue this is something you should be interested in.

The entire Brexit discussion is a symptom of the rise of populism/nationalism/anti-immigration/xenophobic movements all over the world and the concurrent failure of centrism in the very same places.

The problem for establishment politicians is they have become so conditioned in trying to co-opt upstart movements, that they think this one will sidle off into the shadows before long.

That instinctual response is wrong.

There is something broken at the core of social democratic multicultural societies. We have been busy cementing this flaw in the West for the last 40 years – and the

underlying causes demand to be addressed.

Let’s start here:

Manufacturing is in terminal decline

Here’s something to chew on. In 1978 there were 6.7 million people working in manufacturing in the UK. Today that figure is 2.69 million. So, we’ve lost 4 million manufacturing jobs in 40 years. Average it out and that’s 100,000 a year.

At the same time the population has swollen from 56 million to 66 million people so the role of manufacturing in the wider economy is deteriorating not only in

absolute terms but also in relative terms.

So what? I hear you say. Aren’t we a finance, technology and services driven economy now? Why should we be paying attention to the grubby old world of metal bashing?

Well there is a clear reason. Manufacturing tends to pay better wages and not just a little better, a lot better. Take a look at this table (below) I compiled from data provided by the Office for National Statistics.

Everyone knows that the financial sector is important to the UK economy. It employs lots of people in Greater London and pays them lots of money. It is the best-paying sector in the

Sector	Weekly wages	Annual Wages
Finance & Insurance	1398	72,718
Mining/ Quarrying	1289	67,015
Information & communication	901	46,835
Manufacturing chemicals/Fibres	852	44,295
Manufacturing engineering Etc	757	39,355
Professional Science	752	39,100
Utilities	751	39,035
Construction	651	33,843
Wholesale	645	33,514
Transportation & storage	619	32,201
Education	614	31,902
Manufacturing Other	568	29,553
Real Estate	563	29,298
Manufacturing Food & Beverage	551	28,656
Health	458	23,833
Public Admin	456	23,729
Manufacturing Textiles	454	23,625
Agriculture/Fisheries	439	22,828
Arts Recreation	428	22,329
Other Services	417	21,658
Retail	356	18,521
Accommodation	275	14,291



country.

Ever wonder why it is always coal miners that agitate most aggressively for protections for their industry? Well, the simple fact of the matter is they have a very clear financial incentive to do so. Historically the average miner made not much less than the average financial sector worker but had to spend a lot less time in education to achieve that feat.

Coal mining employment peaked in 1920 at 1.2 million people and trended lower to 250,000 in the early 1980s and has virtually disappeared today with only six functional collieries. The 160,000 people still working in mining and quarrying in the UK today are primarily focused on the energy and construction sectors.

Subscribers will be more than familiar with the moniker “Tech Britain”. The UK is the primary destination for venture capital in the Europe. It has given rise to monikers like Silicon Roundabout in East London or Tech City UK to describe London. The technology cluster in Cambridge has also been the genesis point for a couple of the positions in our portfolio.

There is more capital focused on London than just about anywhere else, but it is also worth remembering that the entire focus on technology is figuring out how to do more with less.

The sector requires technical training and expertise. It employs 1.56 million people and saw growth of 2.8 times between 2011 and 2014 alone. Technology jobs are also high paying and they represent the vanguard of the services industry. On top of that, they represent one of the truly impressive growth areas for the UK economy and people quite naturally think about the sector as the future of the economy.

That instinct is correct. There is no possible future scenario where the UK economy flourishes without having a vibrant technology sector and a healthcare system founded on technologically driven solutions.

The UK workforce is comprised of approximately 34.25 million people. There are about 1.07 million in the finance sector, 160,000 in mining/energy and 1.56 million in information technology so what do the other 31 million people do?

Seven million are in education and health. However, when you look at the figures, education pays £614 a week while healthcare earns £458.

The fact that high-paying doctors are lumped in with nurses in healthcare highlights just how low nurses’ pay is. You’ll notice from the table that a considerable number of manufacturing jobs pay more than the average healthcare job.

Seven million are in distribution, hotels and restaurants. These are not well-paying jobs but they represent 21% of the total UK workforce. There are also 2.9 million employed in retail and these are some of the lowest paid people in the country.

Ok, so what does all this mean?

Well, the clear conclusion is that the demise of manufacturing has been a major contributing factor in the narrowing of the middle classes. It now requires much more education and training to migrate into higher paying jobs. Without that training, the alternative for many people is to subsist on a meagre salary in the low-end services sector.

That’s the main point that gets lost in all the discussion about the growth services sector. The vast majority of jobs in services have crappy pay that is difficult to subsist on. We don’t need living wages for low-quality work, what we need are jobs that command a better salary.

It is the manufacturing sector that used to fill that gap. It paid well, offered good conditions and it allowed people who were not especially academic, but who were willing to work, the opportunity to attain a reasonable standard of living. Without it we are posed with a void that is difficult to fill and the jobs replacing manufacturing pay a lot less.

If we are looking at a cause for the rumbling discontent that



resulted in slightly more than half the population voting to leave the EU and strike off in an uncertain direction... then the narrowing of the middle classes and the widening gulf between the unskilled and the highly skilled has got to be a major factor. That is true regardless of what the negotiations with the EU result in, but that's not the whole story.

The trend of manufacturing employment is heading lower. The consultancy firm Price Waterhouse Cooper estimates it will drop to 2 million by 2020. However, if we look at the consistency of the trend from the early 1980s, then we can clearly see that during recessions the UK manufacturing sector declines violently and never recovers the loss.

It really irks me when I hear politicians talk about the recovery in manufacturing. The number of jobs created is paltry relative to the decline when we take the time to look at more than six months of data. There is a simple conclusion from this. Manufacturing in the UK is in terminal decline.

The chasm between the privileged few earning more than £50,000 a year and everyone else is only going to get wider.

The first order conclusion, therefore, is that the polarisation of political discourse is only going to get worse.



Worker intransigence at technological development is a major reason why.

Trains with no destination

Ever since the dawn of the Industrial Revolution, the UK has been a petri dish for exploring the relationship between capital and labour. Whether it was rampant mercantilism, the rise of Marxism, land rights, the trade union movement, strikes and the Big Bang, it is in the UK where there have been some of the most vociferous discussions about the rights and obligations of both employers and workers.

The primary reason I am writing to you is it is now potentially on the cusp of the next major evolution.

It would be convenient to think the dominance of capital over labour, and vice versa, ebbs and flows over time, but that is

just not true.

We live in a global economy where competition for jobs, production, regulation and energy is an ever-changing dynamic. Capital is both global and mobile and it migrates to the regions with the best prospects for growth. For decades that place has been Asia and particularly China.

I've been reading up on the subject for some time and this is not a new story. Back in 1980 Andrew Kilpatrick and Tony Lawson wrote an article for the Cambridge Journal of Economics entitled "On the nature of industrial decline in the UK". Here is an important point: "the relative industrial decline of the UK economy has been underway for a century."

Perhaps the most important point made in the paper was that collective bargaining and "high manning levels" were a key contributor to



the lack of vital energy in the manufacturing sector.

I don't think this point gets nearly enough attention.

The UK was where industrialisation first occurred. It was also where organised labour movements first gained traction. Collective bargaining and the rights of the downtrodden first gained collective appeal in the UK precisely because it was the first to industrialise.

An additional point is the UK has never been invaded, at least since the Industrial Revolution, and did not have the same political upheavals as a result of rapid industrialisation that countries like Germany, France and Italy did.

In fact, the UK's war effort and the commitment to all pull together meant that the centralisation that defined the post-World War II experience of continental Europe did not occur to the same extent in the UK. Rather, job-based worker organisation led to the creation of unions with strong roots in individual communities.

The trade union movement has been the enemy of the efficient organisation of the manufacturing sector for decades. Constant demands for higher pay, shorter hours, longer holidays, better conditions, longer lunches, Christmas bonuses, defined benefit pensions, etc, all contribute to the costs of

manufacturing.

However, it is resistance to deploying new labour-saving devices that has been one of the primary obstacles to the UK holding on to its manufacturing sector.

Trade unions inhibit the ability of management to engage in forward planning, whether in the private or public sectors. That was particularly true in the 1970s and 1980s when there was a great deal of industrial action because inflation was contributing to declining living standards for workers.

With economic liberalism in the 1980s, companies were able to avail of lighter touch regulation and unions lost some of their sway over the direction of the economy. Profitability improved and the stockmarket took off, but this was also when globalisation took off so uncompetitive businesses migrated to Asia or closed entirely.

The Cambridge article goes on to make the point that not only did the UK fail to create an effective technical training programme in the 1800s but even when inventions such as the Solvay process, the Parsons steam engine and ring spindles originated in the UK they were more aggressively put to use in places like the US and Germany.

What I find particularly interesting is that the UK is still talking about creating

an effective technical trade school system. Here is what Theresa May had to say back in February:

“Our action will help ensure young people develop the skills they need to do the high-paid, high-skilled jobs of the future. That means boosting technical education and ensuring we extend the same opportunity and respect we give university graduates to those people who pursue technical routes.”

There is absolutely no doubt that training programmes are required to develop a technically proficient workforce that can man the shop floors of the future.

However, if the trend in the decline of manufacturing is not reversed there will be nothing for these aspiring young workers to do. They'll have the skills, but to what end? They'll try and enter the workforce like a train leaving the depot with no destination.

Lots of robots protect manufacturing

Manufacturing is historically cyclical. When the economy is going well, factories expand and produce more goods. When the economy contracts, they reduce production and some go bust.

In the normal course of events, manufacturing tends to be hit hard during recessions but bounces back stronger in the



recovery. The reason wages are better than less risky professions accounts for that cyclicity.

The first chart below of German manufacturing employment is a good example of what we can expect from the cyclicity of the sector. It is not immune to recessions but it also tends to bounce back impressively on the recovery.

South Korean manufacturing employment gives us a similar example, which can be seen in the second chart below.

What is it that Germany and South Korea have in common and sets them apart from the UK? They have some of the largest numbers of industrial robots in the world per worker. (see charts on the next page).

If we have to answer the

question of why British manufacturing is in terminal decline, then the lack of mechanisation is a big part of the answer. If your workers do not have the very best tools, they have no hope of being competitive in a global economy.

This gets to the heart of one of the most misunderstood aspects of technological development.

The one question I am asked more than any other is, “What am I going to do when the robots take my job?” This is the wrong way to think about the rise of assistive machines.

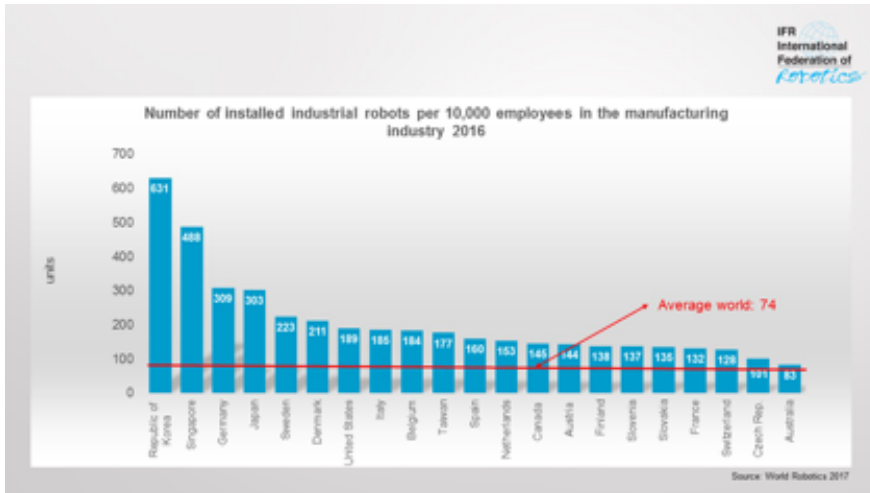
If we look around the world, the simple fact of the matter is that the countries with the most vibrant manufacturing sectors are those that have the most industrial robots.

That does mean people’s jobs will be replaced, but evidence from places like South Korea and Germany tell us that they will be replaced by better jobs if automation is embraced.

How many horseshoe makers do you know? Or manual loom operators? Or VHS repair men? When technology is properly supported, it creates a plethora of new jobs.

The more important point is that without embracing it, the need to innovate manufacturing disappears. That is what is happening in both the UK and US.





manufacturing champions reside in the aerospace industry. The UK accounts for 17% of the global aerospace industry, second only to the US. The jobs it provides are exactly the kind we need more of.

Airbus released a report in June 2017 highlighting how it is responsible for 117,400 UK jobs and contributes £7.8 billion to the economy. As a pan-European company, it obviously wishes to remain as close to the EU as possible and not least because its headquarters are in France.

Obviously, Airbus is one important component of the UK's aerospace supply chain but it is not the only part. Rolls-Royce, GKN Aerospace, Eaton Aerospace, Zodiac Seats UK, IPECO, UTC Aerospace, AMCR/ Cranfield University/ QinetiQ and BE Aerospace all make parts for the Boeing Dreamliner in the UK.

In June, Rolls-Royce announced it is cutting 3,000 jobs from a total of 26,000 in the UK as it refocuses on electrification and digitalisation. That is a part of the normal transition of the business as it adapts to a changing global macro environment.

That said, the UK needs to ensure its companies are making decisions about future investment by putting the UK at the head of the queue for potential locations.

The EU has been driving towards progressively tighter

Holding on to what we've already got

I vocally supported Brexit because I believe the UK needs a reset. The squeezing of the middle class is not about to get better on its own and in fact, without clear remedial action, it is going to get worse.

A clear plan is needed to deliver a better standard of living for millions of people. That is what everyone thought they were voting for when they decided to leave the EU.

It's not at all what they are going to get.

A common though not clinical definition of insanity is doing the same thing over and over again and expecting a different outcome. Can the remedial action that the UK economy needs *really* be best achieved by continuing to pursue failed relationships, methods, agreements and treaties or by starting afresh?

That is the essential question behind Brexit. And the UK voted by a slim margin for the latter option. However, that is not the conclusion reached by many people in the manufacturing sector.

Right now, the UK's



integration for decades so there has been a lot of cross-pollination between the UK and its European neighbours. If the UK is going to prosper in an environment outside the EU, then the government will need to come up with very clear strategy for ensuring companies like Airbus, with all its high-paying jobs, stays.

I realise I have been pointing out why we are where we are (and what needs to be done)... but that is not quite the same as I what think is in fact going to happen.

Let's consider that we are coming to the end of August so silly season is finally winding down. Brinkmanship has

anyway.

The reality remains that the concessions the UK has already agreed to in order to ensure it will have at least some access to the EU's market under preferential terms means that the potential for a clean break is over.

The UK will continue to pay into the EU's coffers, accept its rules on customs and that means the whole notion of negotiations is a pantomime.

The end result is likely going to mean that what the Brexit people thought they were voting for is already off the table. Instead what we are going to be presented with is a Brexit in name only, if it happens at all.

The UK will continue to be a rule taker rather than a rule setter.

The means adopting a competitive labour, regulatory, taxation and subsidy structure that is more akin to what China did to become the world's manufacturing hub, rather than any other strategy.

No clean break

The problem is that with a slim majority in Parliament the current UK administration has very limited resources to push for the wide-ranging trade liberalisation package that would be required to achieve that necessary step.

There is also the simple fact that the vast majority of lawmakers did not vote for Brexit – yet they are trusted with implementing it nonetheless. That is far from an ideal scenario and the result has been a watering down of what people thought they were voting for.

characterised most of the commentary we have seen over the summer. The UK side has been adroitly holding to the contention that “no deal is better than a bad deal”.

The EU side has been sticking to its red lines. Every so often one side or the other decides it is time to show some leniency, only to walk back from it in following days.

Everyone gets back from the summer holidays this week and they will be working towards making some headway by October.

Theresa May kicked things off over the weekend with an editorial in The Telegraph claiming there is no prospect of a second referendum and that she will not tolerate a watering down of her Chequers proposals. Never mind that the Chequers proposals give the EU just about everything it wants

When I advocated for Brexit this is not what I thought I was voting for. In fact, it is the exact opposite.

The UK looks primed to accept a membership-lite package from the EU, which will ensure access to the EU's customs union but not for finance. It will give the European Court of Justice some sway over Northern Ireland which means *the UK will continue to be a rule taker rather than a rule setter.*

It will mean the UK is unable to adopt the trade liberalisation, business-friendly regime that is the only chance the country has of closing the gap between the haves and the have nots.

The one thing the EU is more

afraid of than anything else is that the UK will leave and adopt a highly competitive tax, regulatory and tariff regime which would put the continent at a grave disadvantage.

By ensuring the UK gets some kind of deal, that fear is obviated. Therefore, the EU has a clear incentive to cut a deal, regardless of the brinkmanship that has characterised the repartee over the summer.

There is no way that such a deal is going to be better for the UK than simply staying inside the EU. That realisation is why David Davis and Boris Johnson quit Theresa May's administration. They can see the writing on the wall.

There is going to be a deal and it is going to mean no money saved and a permanent loss of sovereignty for the UK.

If Parliament votes in favour of that deal, the UK electorate is going to be hopping mad. Brexit for Brexit's sake is madness because what is likely to be offered is Brexit in name only.

The most important point of all is that the UK population is being misled to think that a life outside the EU will heal the inequality that is leading to lower standards of living for so many people.

It is impossible to create prosperity by taxing the wealthy into oblivion. The only way that capitalism succeeds in

lifting people out of poverty is to raise all boats at once.

The question has always been between the right balance between socialism and capitalism to deliver a fair and equitable society. Surely people can realise that this system is not working for a large segment of society, particularly young people.

I've written to you previously about the fact that the UK is no longer energy independent. It is not a coincidence that inequality has become a more

If that government is reform minded and business friendly, the stockmarket is likely to benefit inordinately and technology firms in the UK will likely enjoy a renaissance.

How Brexit continues to unravel is an increasingly major factor in my thought process when selecting stocks for the *Frontier Tech Investor* portfolio. As the story moves on, I'll keep you clued in on the impact I see it having and how I believe we should all respond.

We could be facing an entirely

The only way that capitalism succeeds in lifting people out of poverty is to raise all boats at once.

vocal source of disquiet since the UK became an energy importer. It quite literally means there is less money to go around.

So, what does all this mean for you and your investing?

The good news is that the dog in the street knows that the UK needs to invest in technology. The big question is just how much support it is going to get from the next UK government.

If that government is led by Jeremy Corbyn, then tax and spend will be the order of the day and the technology sector and the City will be targets for revenue-raising measures.

new investing landscape a lot sooner than the majority of people realise. The key thing is to recognise that, and begin strategising.

Ok, that's all for this unusual but, I hope, critical look at what Brexit means for the UK and the tech industry.

It's a lot to digest and I'd like to hear your views on this issue and how you see the impact of Brexit (if that's what we can still call it, with a straight face) playing out for the tech industry and Britain as a whole.

Email me at eoin@southbankresearch.com with your thoughts.

Energy



Company	Ticker	Rec Date	Price Then	Price Now	Gain/loss %
Orocobre Ltd	ORE.AX	07/04/16	A\$ 2.92	A\$ 4.43	51.71
Ormat Technologies	ORA on NYSE	06/06/17	\$58.79	\$52.65	-9.44
Smart Metering Systems	SMS LN	03/10/17	735.5p	646p	-11.46
Sherritt International Corp	S CN	06/02/18	C\$1.18	C\$0.83	-29.66

Technology



Company	Ticker	Rec Date	Price Then	Price Now	Gain/loss %
Cyberdyne	7779	30/05/16	JPY 2,353	JPY 1,251	-46.83
IBM	IBM LN	07/06/16	\$153.33	\$146.48	3.21
SAIC	SAIC US	05/07/16	\$58.20	\$90.22	59.81
Garmin	GRMN US	02/08/16	\$55.75	\$68.14	29.58
2U INC	TWOU: US	06/02/17	\$33.25	\$89.36	168.75
Cisco Systems Inc.	CSCO: US	03/04/17	\$33.80	\$47.77	46.72
Advanced Micro Devices	AMD US	26/07/17	\$14.76	\$25.17	70.53
Microsoft	MSFT	31/07/17	\$73.04	\$112.33	56.63
Northrup Grumman	NOC US	06/07/17	\$301.66	\$298.49	-0.02
Intel Corp	INTC	06/06/18	\$56.60	\$48.43	-14.55

Medical



Company	Ticker	Rec Date	Price Then	Price Now	Gain/loss %
Autodesk	ADSK	19/07/17	\$108.83	\$154.35	41.83
Abcam	ABC	07/03/17	907.5p	1539p	71.09
Illumina	ILMN	04/09/17	\$207.15	\$354.83	71.23
PureTech Health	PRTC-L	09/01/18	155.75p	156.50p	0.48
Agios	AGIO	06/03/18	\$84.23	\$80.72	-2.81
Becton Dickinson and Co	BDX	03/05/18	\$221.35	\$261.87	18.64
Canopy Growth Corp	WEED :CN	21/03/18	C\$33.11	C\$59.64	80.13
Advanced Oncotherapy	AVO	03/07/18	48p	50.50p	5.21
Boiquest	BOE :LN	07/08/18	430p	560p	27.27

Moonshot



Company	Ticker	Rec Date	Price Then	Price Now	Gain/loss %
SolarWindow	WNDW	07/04/16	\$3.96	\$2.79	-29.55
Alkane Resources Ltd	ALK: AU	05/09/16	AU\$ 0.31	AU\$ 0.22	-29.51
Haydale Graphene Industries	HAYD	02/5/17	178.5p	55.50p	-68.91
Superconductor Tech Inc	SCON	28/03/17	\$9.60	\$2.37	-75.31

For the full portfolio including live prices, please visit the *Frontier Tech Investor* subscriber area. [You can view that by following this link.](#)

Risk warning

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