TCS Economics Entrance to 6^{th} form Summer Homework 2021

- This work is to be completed before you start in September - **you must complete both task 1 and task 2**
- You will not be allowed to start studying Economics if this is not completed and submitted during your first week
- This will be the first piece of work that we mark of yours, make a good first impression!
- Good luck – we hope you enjoy thinking about Economics and look forward to seeing you in September

Summer homework for Economics A-Level students

Economics in sixth form will be split into microeconomics and macroeconomics – you will have different teachers for each. Microeconomics is the study of particular markets, and segments of the economy. It looks at issues such as consumer behaviour, individual labour markets, and the theory of firms, whereas macroeconomics is the study of the whole economy. It looks at issues such as GDP growth, inflation and the trade balance.

Task 1 - Microeconomics

Write a report examining the reasons for, and implications of, the change in prices of a commodity of your choice **over the past 10 years.** *N.B. A commodity is a raw material or primary agricultural product that can be bought and sold e.g. gold, oil, sugar, etc…(be as original as you can)*

YOU MUST CHOOSE A COMMODITY OTHER THAN OIL

You need to:

1. Find a recent article from a broadsheet newspaper (e.g. The Times, The Guardian, The Telegraph, The Financial Times, Economist) relating to the price of the commodity you have chosen.
2. Copy and paste this article into your report.
3. Give a brief introduction to your commodity – what is it predominantly used for? Which countries have the highest demand for it? Which countries supply most of it?
4. Find and copy a graph that shows the change in the price of the commodity you have chosen over the last 10 (or so) years
5. **Describe the trends** demonstrated in the graph. When was the price at its highest/lowest? Did it fluctuate a lot? What was the range? **Use data from the graph to back up your points**.
6. Explain **potential causes for the change** in the price of the commodity. The article you have found should help you, but you may wish to do some further research. *If you have studied economics before, you should use a supply and demand diagram to help to illustrate your points.*
7. **Comment on the potential effects of these price change**s for producers (of the commodity, but also other firms who may rely on it in their production process), consumers and governments.

Additional information

- Your report should be written using a computer and be around 750 words long (NOT INCLUDING THE ARTICLE ITSELF)
- It should be PRINTED OUT **and ready to hand in to your teacher** on the 1st day of sixth form
- You need to include links to sources that you use at the end in a bibliography
- Try to use a range of sources: newspapers, magazines, websites and journal articles
- We have included a good example from a previous year in this document below – READ THIS

Useful websites

- www.bbc.co.uk
- www.economist.com - The school has an online account with the Economist magazine – username is jwatkins@charternrothdulwich.org.uk and the password is charter19 (lower case C)
- http://www.indexmundi.com/commodities/
- www.ft.com
- www.theguardian.co.uk
- www.telegraph.co.uk
- www.tutor2u.net

Task 2 – Macroeconomics

Read the article below and answer the following questions in full sentences/paragraphs - ensure this is ready to hand in *on paper* for your first economics lesson.

1. Explain the difference between a budget deficit and the national debt
2. Why are historical and international comparisons of deficit and debt measures presented as a proportion of GDP?
3. Does it matter if a country has a large national debt as a proportion of its national income?
4. Whilst some argue that rising economic growth can help to bring debt levels down, there are others who argue that there needs to be government spending cuts and/or increases in taxation to do this. Write **at least one page of A4, maximum of 2, explaining**:
    a. Which taxes you would increase to increase government revenue (and explain WHY you chose these)
    b. Which areas of government spending you would cut to decrease overall spending (and explain WHY you chose these areas)
    c. Use the following websites to help you – there is no right answer to this question, I am interested to hear *your* views in your own words. [How much is Covid costing the UK and how will we pay? - BBC News,]() [Budget 2021 (HTML) - GOV.UK (www.gov.uk)]() (Use chart 1 and chart 2 to help you)

Covid-19, Keynes and the national debt

During 2020, the global economy was hit by the Covid-19 pandemic, and governments in many countries poured funds into countering the virus and trying to preserve their economies. **Peter Smith** explores the repercussions for the national debt

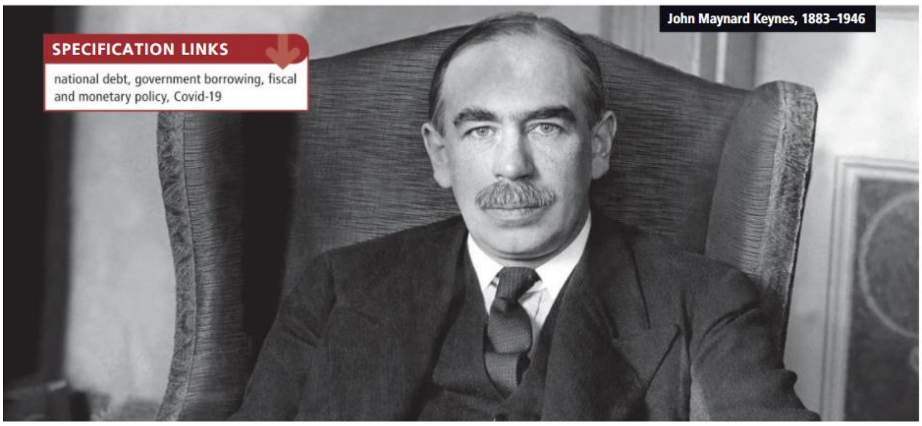
As the Covid-19 pandemic spread rapidly around the world, scientists rushed to analyse the virus and to develop treatments and a vaccine to prevent infections. However, the virus was highly contagious and by late 2020 there was still no known cure. For many who caught it, it was fatal.

The first priority was to halt or slow the spread of the disease, but this required severely limiting social interactions between people. A key way in which people interact is in the workplace, so slowing the spread of the virus could only be achieved by forcing businesses to close, or to find ways in which their employees could work from home.

This conflict between securing public health and maintaining economic activity coloured the design and balance of economic and social policy in countries worldwide. The policies that were introduced had a major impact on government finances.

Government finances: the background

Put simply, the government raises revenue through taxation and undertakes expenditure on goods and services. If a government spends more than it raises in taxes, it runs a budget deficit, which must be funded in some way.



John Maynard Keynes, 1883–1946

There are two basic options: the government can print (or create) money, or it can borrow. Printing money is risky because it can result in inflationary pressure. Where this strategy is used too enthusiastically, it can lead to hyperinflation, as happened in Germany in the 1920s, in some Latin American countries in the 1970s and 1980s and in Zimbabwe in the late 2000s.

The borrowing option also has costs, not least of which is the need to meet interest payments in the future and to repay the debt at some point. The accumulation of debt that results from government borrowing is known as the national debt.

The national debt in history

The national debt in the UK first emerged during the reign of William III, with the Bank of England being formed as a private bank in 1694 to act as banker to the government. Much of the borrowing that took place was used to finance wars, peaking at the time of the Napoleonic wars, when the national debt reached an estimated 237% of GDP in 1816 after the Battle of Waterloo. The First World War also brought heavy government expenditure, and the national debt rose in consequence. Figure 1 shows the national debt (that is, public sector net debt) since 1921.

A key feature of this figure is the way that public sector net debt rose sharply during the Second World War and its aftermath, between 1939 and 1947, but then fell steadily until the late 1980s. It is also interesting to note the way that the national debt fell during the 1930s. This might be seen as a bit surprising given what was happening to the unemployment rate in this period, as you can see in Figure 2.

Unemployment rose steeply in the 1930s, reaching a peak of 22% in 1932. However, this was when the national debt was falling steadily. John Maynard Keynes was a critic of the policy stance at this time, arguing that unemployment could have been alleviated by government expenditure to boost aggregate demand. However, the government of the day did not take this view, and in 1938 the unemployment rate was still at 12.9%. The combination of mobilisation of troops during the war and the increase in government expenditure brought unemployment down to a level that was then maintained through the 1950s and 1960s.

It seems likely that the famous macro-economist Keynes would have approved of the willingness of the Johnson government to spend so much to counter the effects of the Covid-19 pandemic in 2020 — but we will come back to that. Figure 3 shows government expenditure between 1920 and 1950, and you can see how expenditure expanded during the Second World War.

Figure 1 Public sector net debt since 1921 (% of GDP)

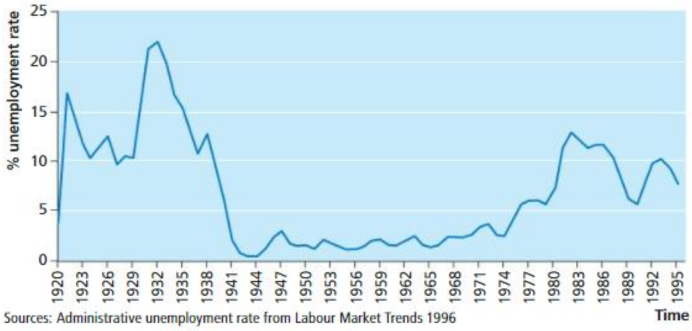


Figure 2 The unemployment rate in the UK 1920–95

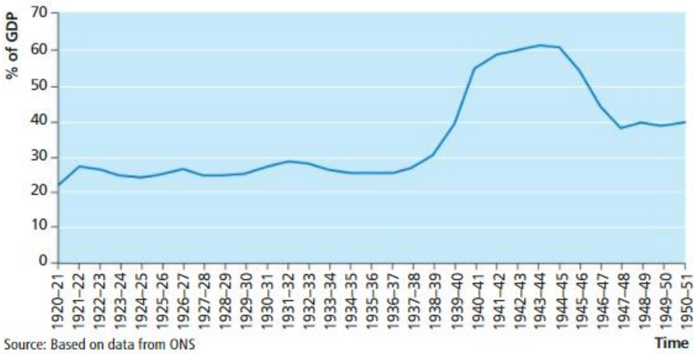
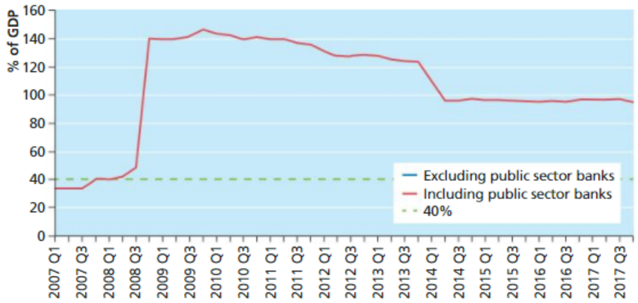


Figure 3 Public sector total managed expenditure, 1920–50

The national debt 1970–2007

Figure 1 shows that the national debt stabilised between 1970 and 2007. Indeed, under the Blair administration between 1997 and 2007, a 'golden rule of fiscal policy' was introduced. The idea behind this was that government borrowing should be



Source: Based on data from ONS

Figure 4 Public sector net debt in the UK, 2006–17

undertaken only for investment purposes, and not for current spending. The rationale for this was that borrowing for investment would benefit future generations, so they could be expected to help to finance it. However, current spending should be the responsibility of the current generation, and should not be funded by future citizens.

The indicator to monitor whether this rule was being kept was the size of public sector net debt relative to GDP, and the target was that this should not exceed 40%. Figure 1 shows that this target was met in the 1997–2007 period.

Financial crisis

This period of stability was not to last. A number of financial institutions in the UK, USA and elsewhere had been expanding quite aggressively during the 2000s, using innovative new financial instruments.

In 2007, the US government had taken over some mortgage finance agencies that had got into difficulties. This had knock-on effects for some investment banks such as Lehman Brothers, which collapsed in September 2008. This in turn affected some financial institutions in the UK. This was first seen in Northern Rock, a British bank that had been expanding rapidly, using international money markets to fund its expansion. This funding stream was blocked off by the problems in the US financial markets, and Northern Rock found itself facing a liquidity crisis, and a bank run (the first in the UK for about 140 years). The government stepped in to bail out Northern Rock, but this was not the end, as other banks (including HBOS and RBS) also needed to be bailed out.

The impact of this intervention on the national debt can be seen in Figure 4. Between the third and fourth quarters of 2008, public sector net debt rose from 48.6% of GDP to 140.3%. Over the following years, the debt gradually fell as the bailed-out banks began to return to the private sector. Most of the additional debt associated with the bail-outs had been repaid by the middle of 2014. Notice that even without the extra debt from the bail-outs, the public sector net debt remained substantially above the 40% mark.

The UK was not alone in appearing to settle down with a higher national debt ratio than in the recent past, as you can see in Figure 5, which shows the size of national debt relative to GDP for a range of countries. It is noticeable that the countries with the highest levels of debt to GDP are countries that have experienced recent recessions.

The collapse of Lehman Brothers in 2008 marked the beginning of a worldwide financial crisis

Covid-19

Figure 4 suggests that the size of the national debt had settled at around 80% of GDP from about 2014 (excluding the part associated with the public-sector banks). This is above the 60% considered to be acceptable within the EU. However, the Covid-19 pandemic that broke out in 2020 required unprecedented changes to economic policy, which had significant repercussions on the national debt.

A key part of the strategy to contain the pandemic was the lockdown that began in March 2020. Many businesses were instructed to close down, as were schools and colleges; working from home was encouraged where possible. This would of course result in a large fall in GDP, and with no action unemployment would have soared. There was also a real danger that the NHS would not be able to cope with the rising numbers of people with the virus. The government introduced a range of measures to try to mitigate the impact of the pandemic.

Government expenditure

Figure 6 shows how government expenditure increased. At the end of 2019, expenditure was just over £220 billion per quarter. In the second quarter of 2020, expenditure was almost £300 billion. Expenditure measures included spending on public health, notably the building of the Nightingale hospitals and purchases of personal protective equipment, together with funding of research into treatments and vaccines.

In order to try to protect jobs and ensure that the economy could recover at the end of the pandemic, the government launched the Coronavirus Job Retention Scheme (commonly referred to as the furlough scheme), which covered a proportion of wages for employees unable to work.

At the same time, the HS2 project was given notice to proceed, in spite of being well over budget. Other expenditure

Government expenditure during the Covid-19 crisis included the establishment of temporary Nightingale hospitals

measures were also introduced to affect aggregate demand.

This might be seen as the 'Keynesian' part of the policy strategy to combat the effects of the virus. Keynes had argued that government expenditure was a vital part of a strategy to deal with recession.

Taxation

The government budget is not only determined by expenditure, but also by tax revenue. Tax revenues would automatically fall as the economy went into decline, but the government introduced additional measures, such as the deferral of VAT payments.

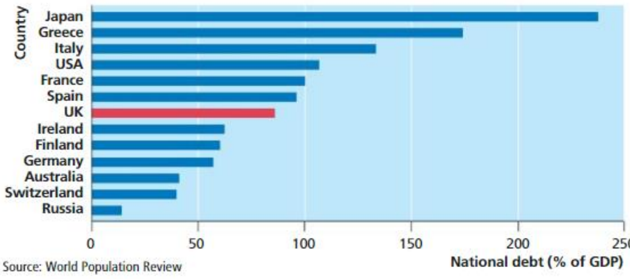
Quantitative easing and interest rates

The Bank of England had set the bank rate at 0.75% in August 2018, but reduced it to 0.25% on 11 March 2020, reducing it again 8 days later to 0.1% (the lowest on record). This was to reinforce the other measures taken by the government.

The bank also extended its quantitative easing to help with the crisis. Quantitative easing is effectively a way of injecting money into the financial system. It is put into operation when the bank creates electronic money and uses it to purchase bonds. Table 1 shows the way in which quantitative easing has been used. Notice that the purchases undertaken in response to the pandemic far exceed those in the preceding period. This shows how monetary policy was being used to reinforce the fiscal measures taken in respect of expenditure and taxation.

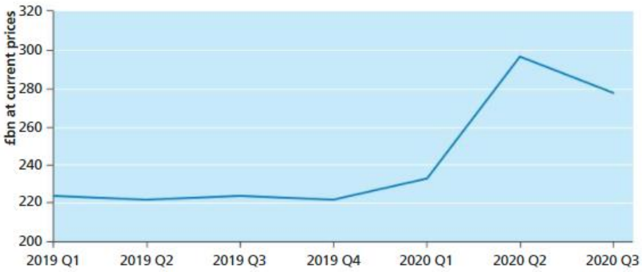
The effect on the national debt

Figure 7 shows how the national debt has increased during the pandemic, rising from 84.5% of GDP in January 2020 to 114.6%



Source: World Population Review

Figure 5 National debt (% of GDP) 2018, selected countries

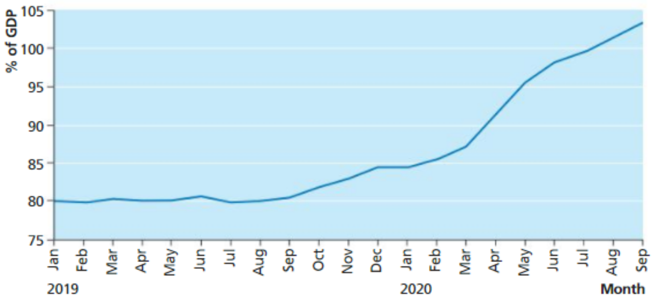


Source: Based on data from ONS

Figure 6 Public sector total managed expenditure, 2019–20

Table 1 Purchases of bonds by the Bank of England (£ billion)

Date	Amount (£bn)	Reason
November 2009	200	Financial crisis
July 2012	375	To meet the inflation target
August 2016	445	To help the economy after the Brexit referendum
March 2020	645	Covid-19
June 2020	745	Covid-19
November 2020	895	Covid-19



Source: Based on data from ONS

Figure 7 Public sector net debt 2019–20 (monthly)

in December 2020. This is nowhere near the 250% of GDP that was the national debt after the Second World War, but it still represents a substantial rise — and these data only cover the period up to September 2020, before the second lockdown was instituted in November 2020.

Why does it matter if the national debt rises?

The 40% 'golden rule' of the Blair government has long been abandoned, as has the 60% indicator of fiscal responsibility used by the EU. But why is this important? After all, in the years following the Second World War, the national debt fell steadily through the 1950s and 1960s, as you can see in Figure 1.

One consideration is the need to meet interest payments on outstanding debt. It could be argued that when interest rates are at such a low level, with the bank rate at 0.1%, the payment of interest should not be a major issue. However, there is no guarantee that interest rates will remain so low into the future. If rates were to return to the level seen before the financial crisis of the late 2000s, the repayments could become a drain on government finances.

There is also the possibility that such high levels of government borrowing will restrict the amount of credit available to the private sector — a process known as 'crowding out'. Pension funds could also find difficulties in the future, especially given the ageing UK population.

How to return to 'normal' levels of national debt?

Low interest rates help to control the national debt, but may not last for ever, so how can the national debt be brought back to more normal levels?

A return to steady economic growth is one factor that could help, and this arguably contributed to the reduction of debt in the 1950s and 1960s. However, it is likely to be some time before real GDP gets back to its pre-virus level. Inflation could also help, but is unlikely to be acceptable. In the 1950s, the UK was able to borrow from the USA (and pay it back gradually). This does not seem likely in the current climate when the USA also faces high national debt.

Another strategy that would not be at all popular would be to raise taxes and reduce public expenditure in order to reduce the debt. Given the extreme social pressures that have been put on the electorate through the Covid-19 restrictions, a period of austerity would not go down well with the populace. And then there is Brexit to cope with as well.

The best hope is that the economy will recover and that economic growth will allow the debt to be brought down — but this will not be a rapid process.

KEY POINTS

1 Policies introduced in the UK during the Covid-19 pandemic had a strong impact on government finances.
2 When the government runs a budget deficit, debt can accumulate. This is known as the national debt, measured by the 'public sector net debt'.
3 The size of the national debt relative to GDP has varied over time, especially expanding during times of war.
4 The Blair government of 1997–2007 introduced a rule that the national debt should not exceed 40% of GDP.
5 The need to bail out banks during the financial crisis of the late 2000s took the national debt to more than 100% of GDP; this later reduced to about 80%.
6 During the Covid-19 pandemic, government expenditure increased substantially, and tax revenues fell.
7 The Bank of England used quantitative easing in an attempt to bolster the economy.
8 The national debt inevitably rose, creating potential problems for the future.
9 A strategy to reduce the national debt over time will be required, but the authorities will want to avoid inflation and austerity.

Questions

1 Explain the difference between a budget deficit and the national debt.
2 Why are historical and international comparisons of deficit and debt measures presented as proportions of GDP?
3 Does it matter if a country has a large national debt as a proportion of its national income?

Peter Smith is emeritus professor in economics at the University of Southampton and a member of the Economic Review editorial board.

Example Summer Homework for Task 1: Commodity Research - Copper

A. Student

Article below taken from the Guardian – written in January 2015

Is a global economic recession coming? Copper prices say 'yes'

The market for copper, a metal that two years ago was being stolen by thieves looking for big profits, is crashing – the latest in a string of commodities nosedives that have experts worried about the broader implications for the global economy. The copper market crashed overnight to its lowest level since the middle of the financial crisis in 2008, fueling fears that the global economy is slowing more sharply than many experts had anticipated.

Wednesday's drop is the sixth consecutive decline in copper prices. Currently trading at around $5,560 a ton, the prices are causing significant pain to mining companies like Glencore, whose stock responded to the copper crash by hitting a record low. Like oil, copper has a deep effect on the world economy because it is key for phone lines, cables and other infrastructure. It is also important to several world economies; the world's largest copper producers, in order, are Chile, China, Peru, the US and Australia.

The copper market is just the latest commodities market to suffer from a kind of panic, as oil prices have halved in just a few months. Copper is also at the center of a black market trade that has been shrinking from a level of $1bn just two years ago, as an epidemic of copper thefts swept the country with thieves robbing warehouses and stripping telephone wires to resell the metal for a profit. The National Insurance Crime Bureau, which tracks metal theft, called the crime wave a threat to US infrastructure. Claims for metal theft have since declined, the NICB said.

The worry about the fall in copper is that the rout in crude-oil prices could be spreading to other commodities, sparking concerns that the slowdown in the global economy might be much deeper than thought and not limited to the energy market. China, with an economy that has grown relentlessly in recent years, is the world's largest user of copper, eating up 40% of supply. China's imports of copper hit an all-time high in December.

But China is slowing. Just Tuesday, the World Bank suggested that a "disorderly slowdown" in China would force it to reduce its forecast for global growth outside the US. It said the slowdown in Chinese property and land sales will prevent the national and local governments from boosting growth by investing in infrastructure. The World Bank said the world economy would grow by only 3% for 2015, down from an earlier estimate of 3.4%.

"I'm getting worried that this [drop in copper prices] is telling us not all is right with the global economy and that it is slowing faster than anticipated," said Robin Bhar, head of metals research at Societe Generale. "If you asked me three to six months ago, I would have been less worried; I would have said it's oversupply of oil, iron ore, coal. But the combination of greater supply with weaker demand is suggesting it's indicative that the global slowdown is taking place."

Why does copper matter? Because it's used in all sorts of building materials and historically its price movements were tracked for insights into the robustness of industrial activity. "Copper is a good barometer of economic health and always has been," Bhar said. While there are concerns about the slowing global economy and whether the strength of the US economy can withstand sluggishness elsewhere, Bart Melek, head of commodity strategy, rates and foreign exchange research at TD Securities, said the copper market itself has had its own problems for a while now.

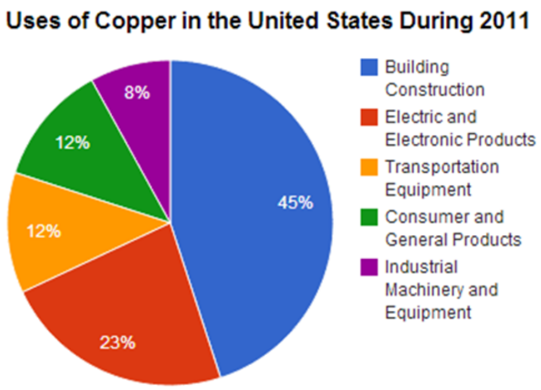
Chiefly, its problem is overproduction. Copper mining supplies are growing at a faster pace than demand, and have been since 2013, Melek said. Melek said copper demand from China, the world's No 1 user of the red-colored metal, is still expected to grow by 4% to 4.5%, but the issue is that previous expectations were for greater growth. "I think there is certainly concern on the part of Chinese traders," he said, noting most of Wednesday's price break occurred during Asian trading hours. During the US trading day, prices started to rise off those lows. Bhar said what may have triggered Wednesday's plunge is that in the past few days there were fewer purchases by metal buyers, sending signals that perhaps copper users wouldn't need as much supply as originally thought.

Combine that with the weakness in oil, a trend of weakening copper prices anyway (prices fell for much of 2014) and general malaise about the global economy and there were reasons to sell, he said. And of course, trimming copper production in the face of lower values isn't as easy as pressing the "off" button for miners. It takes a long time to stop and restart production.

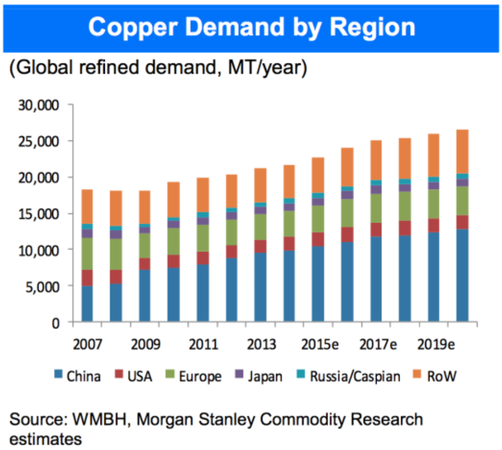
My Commodity report

A brief introduction to copper

Copper is primarily used in construction, for example in roofing and plumbing and to make industrial machinery. Another important use of copper is to make electrical equipment. Copper is also used in coin making, e.g. all US coins are now made of copper alloys, as well as serving a few uses in the agricultural industry as it can be used as an algaecide in water purification.

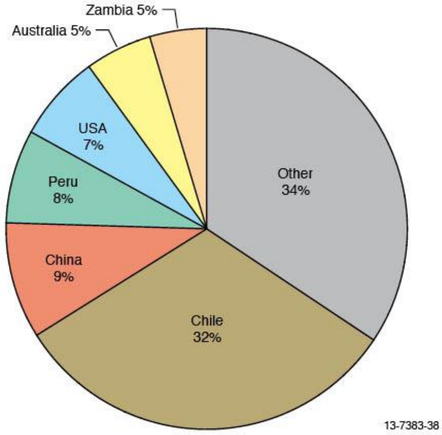


As of 2016 China is the largest user of copper, in fact the demand for copper is greater in China than the rest of the world. This is due to the fact that recently China has started to greatly expand its current infrastructure; this is a result of both a huge growth in the Chinese middle class as well as a need to expand infrastructure to cope with a massive population.



Consumption of copper rose greatly in China during 2009, primarily due to the increase in demand for copper from China. Predictions are that demand for copper will continue to rise in the future, but perhaps at a slower rate , with demand rising from the 'rest of the world'.

Copper production, by region



Copper total mine production = 17 096 kt

Chile is the main producer of copper globally, producing 32% of all copper sold worldwide. The main producers are a combination of developed (e.g. USA) and developing (e.g. Zambia) countries

Price of Copper – key trends

The graph below displays how the price of copper has fluctuated over the previous ten years.

Over the ten year period, the price of copper has fluctuated widely, with a range of approximately £4,200 per metric tonne. The lowest price of copper over the last ten years was during 2008-2009, where prices reached £2000 per metric tonne of copper. The price of copper rose sharply during 2009-2010 and, despite a dip in mid-2010, it reached a peak of over £6000 per metric tonne in January 2011. Since the summer of 2011, the copper price dropped by approximately 40%, falling from almost £6000 per metric tonne to approximately £3700 per metric tonne.

Potential causes of these price changes

The largest fall in price over this period coincided with the 2008-2009 financial crash. I believe that during the financial crash there was low demand for copper, this is because as previously mentioned copper is mainly used in construction; since people had little money during the financial crash demand for new buildings would be very low, as people wouldn't have enough money to be able to move in. Furthermore copper is also used in electronic products as well as consumer/ general products, since these goods are non-discretionary goods people would have had to stop buying them into order to purchase essentials during the recession.

The decline in the price of copper since 2011 is most likely due to less spending on infrastructure by China; this is because currently China has far exceeded its infrastructure requirements, this has led to the creation of many "ghost cities" in China as too much urban housing has been built for the current amount of civilians living in urban areas. These cities were built to accommodate the anticipated population growth as well as higher paid workers looking for accommodation in urban areas instead of agricultural heavy countryside. As China makes up 40% of world demand (according to the newspaper article), any reduction in demand from China would lead to a fall in the price.

As the article say, the over-supply of copper on the markets recently has led to the reduction in price – suppliers of copper were expecting a higher demand for copper and so produced more than ended up being needed, leading to a reduction in price.

In September 2015 the price of copper rose slightly due to the large trading firm Glencore PC suspending production in two of its copper mines for 18 months in order to lower operating costs. The suspension of the two mines, located in the Democratic Republic of the Congo and Zambia removed 400,000 tonnes of copper from the market, this significant decrease in supply boosted the market price of copper.

Potential effects of the current price changes

This current low price of copper could help the governments of poorer countries invest in infrastructure (given that copper is heavily used in this) as it will be cheaper, thus boosting their development. However, governments might expect prices to fall even lower, and thus wait before investing in improved infrastructure and this could cause copper prices to fall even further as demand falls. Since copper is used to produce electronics and consumer goods the prices of such goods will mostly fall as the cost of production will fall for manufactures. This again could lead consumers to be cautious and wait for products to decrease more in price. Furthermore the decrease in the price of copper could lead to producers of copper having to lay off workers in order to profit, this would increase unemployment in countries that produce a lot of copper, such as Chile, and could lead to lower growth rates in these economies.

Bibliography

- http://www.indexmundi.com/commodities/?commodity=copper&months=120&currency=gbp
- http://geology.com/usgs/uses-of-copper/
- http://uk.businessinsider.com/copper-demand-by-region-2015-1?r=US&IR=T
- http://gizmodo.com/chinas-building-cities-so-fast-people-dont-have-time-1446570856
- http://www.marketwatch.com/story/copper-prices-may-get-a-break-as-glencore-suspends-two-big-mines-2015-09-07
- http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp171766_256980.pdf
- https://www.theguardian.com/business/2015/jan/14/copper-prices-fall-fears-looming-global-recession