

CMP Upgrade 2024/25

Subject SA7

CMP Upgrade

This CMP Upgrade lists the changes to the Syllabus objectives, Core Reading and the ActEd material since last year that might realistically affect your chance of success in the exam. It is produced so that you can manually amend your 2024 CMP to make it suitable for study for the 2025 exams. It includes replacement pages and additional pages where appropriate. Alternatively, you can buy a full set of up-to-date Course Notes / CMP at a significantly reduced price if you have previously bought the full-price Course Notes / CMP in this subject. Please see our 2025 *Student Brochure* for more details.

This CMP Upgrade contains:

- all significant changes to the Syllabus objectives and Core Reading.
- additional changes to the ActEd Course Notes and Assignments that will make them suitable for study for the 2025 exams.

1 Changes to the Syllabus objectives

This section contains all the *non-trivial* changes to the Syllabus objectives.

There have been no significant changes to the syllabus objectives.

Changes to the Core Reading

This section contains all the *non-trivial* changes to the Core Reading.

Chapter 3

Section 9.2

Towards the end of this section there is a minimum level for Basel III, which has been increased from 7% to 8%. The paragraph now reads:

Banks must maintain a minimum solvency ratio, defined as:

$$\frac{\textit{regulatory capital}}{\textit{risk – weighted assets}}$$

of 8% compared with a previous minimum requirement of 2%.

The paragraph of ActEd text that follows this is no longer required and has been deleted.

Chapter 3

Section 10.2

This entire section, titled ‘Factors to consider when setting up a hedge fund’, has been deleted.

Chapter 4

Section 4

There is a paragraph that discusses actual equity and bond returns over a selected period. The returns have been updated and the paragraph now reads:

Returns on equity investments have historically been very good; they have been one of the top performing asset classes over time. For example, over the 43-year period from December 1976–December 2023, a period which has included several booms and recessions, market corrections and geopolitical or financial crises, US equities returned an average of 11.5% *pa* compared with bonds which returned 6.1% *pa* over the same period

Reference: *US equities based on S&P500 Index total return; US bonds based on Bloomberg Barclays Aggregate Bond Index (and its predecessors)*

However, equities have usually also been the most volatile of the asset classes (having a standard deviation of annual returns of 16% over the same period compared with bonds at 7%) and returns have had a negative skew. On a risk-adjusted basis, the performance of equities relative to other asset classes is much less attractive.

Chapter 4

Section 5.1

The definition of 'short' has changed from 5 years to 7 years. the paragraph reads:

Conventional government bonds are classified according to their term to maturity. In the UK for example they fall into in the following bands:

- **'Shorts' (term to maturity up to 7 years) including 'Ultra-shorts' (up to 3 years)**
- **'Mediums' (7 to 15 years)**
- **'Longs' (over 15 years)**
- **Undated (no predefined redemption date).**

Chapter 4

Section 10

This section contains many charts and graphs of historical investment performance. The graphs have been updated, and replacement pages are included at the end of this upgrade note.

Chapter 7

Section 2.1

An additional paragraph has been added to the end of this section. It reads as follows:

The approach to regulation

Regulations and laws governing the operation of financial services firms and markets change over time according to several, sometimes interrelated influences. Regulators and lawmakers will seek to address current concerns or encourage/discourage certain behaviour depending on elements which include:

- **the political attitude towards more or less regulation**
- **a desire to grow the domestic financial services industry, which would be encouraged by a lessened regulatory burden**
- **the role of the government in the domestic economy**
- **the importance of the country in international financial markets and the desire to attract (or not) foreign capital and foreign financial firms**
- **trends in global regulation and efforts to harmonise these across markets**
- **recent developments in the local or global markets that prompt regulatory action, especially following a spell of adverse events (for example, a series of bank runs may result in higher capital adequacy requirements for banks going forward)**
- **social concerns stemming from business practices (for example, banning payday lending to overleveraged customers).**

Predicting the direction of regulation can be difficult due to the number of factors and their interaction. However, financial services firms often need to make assumptions about the future regulatory environment when deciding where to establish a presence and what products or services to offer into a local market. In general, a stable, predictable regulatory environment which balances consumer protection with freedom to innovate is likely to be most attractive. Having said that, the trend over the past 20 years or more has been clearly in favour of increased regulation across nearly all financial markets with an associated substantial increase in the cost of compliance, slower innovation and reduced business volumes but arguably also a safer overall market environment.

Chapter 8

Section 3

There are some charts on money supply and central bank asset growth which have been updated. Replacement pages are included at the end of this note.

Chapter 11

Section 8.6

There is a section entitled 'LDI implementation, which has been extended by the addition of a paragraph on the LDI crisis in the UK in September 2022. It reads as follows:

The choice of implementation method for LDI can have a profound impact on the success of the strategy and even the solvency of the scheme. A stark example was provided during the UK's 'mini-budget' in September 2022 which led to an unexpected sharp increase in interest rates. Many UK schemes at the time were using leveraged LDI solutions which incurred losses as bond prices fell. Even though the schemes were largely immunised against this on their overall balance sheet (due to a comparable reduction in the liabilities), the need to post margin to cover the leveraged losses forced them to sell liquid assets such as government bonds which drove interest rates further up. Eventually the Bank of England was forced to step in to stabilise interest rates and defuse the panic. The crisis led to several LDI providers closing their funds as a consequence.

2 Changes to the ActEd material

This section contains all the *non-trivial* changes to the ActEd text.

ActEd Course Notes

Chapter 3

Section 8.4

A new ActEd question and solution have been inserted at the end of this section:



Question

A government has made a proposal to force DC pension schemes to disclose their investment portfolios, the proportions invested outside the country and the investment return. What are the likely benefits and drawbacks for the government and for the DC pension providers of this proposal?

Solution

From the government perspective:

- DC schemes may feel pressurised to move investments back to domestic markets, which would help local listed companies by boosting their share prices.
- A clearer comparison could be made between difference providers and fund managers, which may lead to better allocation of investment, and therefore increase the efficiency of capital within the economy.
- If DC schemes move money back to domestic markets, they may have to buy more investments that breach their ESG guidelines such as oil and gas shares. The blame for this may fall on the government's head.

From the perspective of the DC schemes:

- More disclosure about investment portfolio structure may lead to healthy competition and could assist some DC providers market their services. The higher returning fund managers would be able to use the disclosed information for their advantage.
 - A focus on returns may lead providers to invest more in shares rather than bonds, which could increase the risk level for pensioners.
 - If trustees of larger DC schemes feel pressurised to move money back to the domestic market, and it leads to lower returns, they could be sued for a breach of their core fiduciary duty to manage the funds to achieve a good return for pensioners.
-

3 Changes to the X Assignments

Assignment X3

Question 3.2 parts (ii) and (iii) have been changed slightly. The question now gives the ungeared beta, rather than the geared beta, and students are required to calculate the geared beta rather than the ungeared beta.

The loan stock trades in the market at a yield margin of 1% *pa* above government bonds, which offer a gross yield of 4% *pa*. The company finance director (FD) has measured the beta of the company's shares by observing their movements relative to the FTSE RishiLand All-Share index over the last year (the FTSE RishiLand All-Share gave a return of 10% over the year). The FD has stated that the measured geared beta of the shares in the stock market seems to be rather high, and that it may put investors off if the company were to have a rights issue.

- (ii) Discuss the FD's comments that a high beta puts investors off the company's shares, and comment on the method used and assumptions involved in estimating the beta. [5]

The ungeared beta of the company's shares (beta of its assets) is about 1. The FD thought that changing the gearing level to around 25% (*ie* 20 debt / 80 equity) would decrease the geared equity beta to around 1.2, which was more acceptable.

- (iii) Calculate the 'geared beta' of Company A's shares from the ungeared beta given its *current* level of gearing. Calculate whether the finance director is correct in the prediction that Company A's equity beta would change to about 1.2 if the debt level was changed. [5]

Solution

- (ii) **Comments to the director**

Observations

It is certainly true that a high beta means that the share has a high level of systematic risk, which may put shareholders off investing ... [1]

... and potentially stop investors from supporting a rights issue. [½]

Some shareholders, however, may have a high risk appetite and prefer companies with high levels of risk. [½]

Method used and assumptions

The FD has made various assumptions along the way, which we should point out. The following points would be made:

- One year may not be a fair reflection of the long-term variability of the shares, and a longer period should also be considered. [1]

- There may have been specific events that occurred in the year that would have affected the results, for example a rights issue, a merger, a large debt issue or management changes. [1]
 - The company's financial structure might not have remained the same over the observation period. [1]
 - Any changes in gearing would affect the level of the equity share beta observed. [½]
 - The mix (by industrial sector or sub-sector) of the underlying business may have gone through some changes during the year. [1]
 - The FTSE RishiLand All-Share might not be an appropriate index against which to measure the volatility and correlation of the share. [½]
 - The index may not be fully diversified itself, perhaps with specific exposures to certain sectors which have impacted the performance over the year. [½]
- [Maximum 5]

(iii) ***Gearred beta and reduced level of gearing***

Calculate the 'gearred beta' of the shares using current debt levels

We know that the risk-free rate is 4% *pa* and that the company's debt yields 5% *pa*, therefore we can deduce that the beta of the company debt is given by:

$$5\% = 4\% + \beta_{debt} \times ERP \quad [½]$$

where the equity risk premium (*ERP*) is 10% – 4% = 6% *pa*.

Therefore $\beta_{debt} = 0.17$. [1]

Using the current mix of debt and equity, the beta of the debt, and ungeared equity beta we can determine the geared equity beta of the company in its current capital structure:

$$\beta_{assets} \text{ (or } \beta_{equity}^{ungeared}) = \frac{500}{1,000} \times 0.17 + \frac{500}{1,000} \times \beta_{equity}^{geared} = 1 \quad [1]$$

So $\beta_{equity}^{geared} = 1.83$ (or about 1.8, which is very high). [½]

[NB alternatively using the Core Reading formula: $\beta_{equity} = \beta_{assets} + \frac{debt}{equity} \times (\beta_{assets} - \beta_{debt})$

$$\beta_{equity}^{geared} = 1 + \frac{500}{500} (1 - 0.17) = 1.83]$$

Beta changing to 1.2

Suppose that the capital structure was changed to 20% debt / 80% equity. Then the geared equity beta would be given by the formula:

$$\beta_{assets} \text{ (or 'ungeared beta')} = 1 = 0.2 \times 0.17 + 0.8 \times \beta_{equity}^{geared} \quad [1]$$

$$\text{therefore } \beta_{equity}^{geared} = 1.21 \text{ (or about 1.2)} \quad [1/2]$$

At this point we have assumed that there is no change to the required return on the company's debt (and therefore its debt beta) as a result of the restructuring process. [1/2]

The outcome is that the FD is correct in the conclusion about the change in the company's equity beta. [1/2]
[Maximum 5]

Assignment X6

Question X6.2 (iv) has been rewritten. The question now reads:

Following an unexpected sharp movement in long-term yields the scheme experienced a significant cashflow challenge which required some assets to be sold at poor prices.

- (iv) Describe the sources of liquidity risk in a large DB scheme such as this, describe how the scheme can monitor and manage this risk efficiently, and comment on any assumptions that need to be made when planning liquidity levels, giving examples where necessary. [9]

Solution

- (iv) **Liquidity risk**

Sources of liquidity risk in a DB pension scheme

The key source is the funding requirement for collateral accounts connected to derivative products that the scheme has purchased. [1/2]

Swap portfolios are typically fully collateralised and usually centrally cleared. This means that a high level of collateral will be required, only high quality assets will be accepted as collateral, and margin will be marked to market on a frequent basis. [1 1/2]

Certain geared liability-driven pooled funds are designed such that the scheme is responsible for collateral management, which means that the collateral accounts of any derivatives in the fund are the responsibility of the scheme to finance. [1]

Repo portfolios are collateralised and require the same cash management as swaps if the repos are rolled forward to perpetuity. [½]

There may also be liquidity risk in the liabilities, where lump sum withdrawals can be made by pensioners and deferred pensioners at short notice. These will tend to be smaller in size and less immediate. [1]

Monitoring and managing the risk

The most reliable way to monitor the risk is by using scenario analysis, whereby a series of very extreme swings in markets is modelled to determine the impact on collateral requirements (or pensioner behaviour). [1]

It is then essential to also model how that amount of cash can be raised from the existing marketable assets in the portfolio. [½]

Asset classes such as equities can be relatively marketable but require some days for settlement of transactions. Government bond markets are highly liquid and settle the following day. Corporate bonds have variable levels of marketability. [1]

Property and infrastructure are highly unmarketable. [½]

Many collective schemes may be marketable in stable times but impose lock-in periods in market turmoil. [½]

It is possible to have pre-prepared plans in place for how to generate immediate cash. Examples would be letters of credit from banks, or the ability to repo highly liquid bonds in large size. [1]

Assumptions involved

It will be assumed that marketable assets in the past remain marketable in future crises. [½]

If the turmoil stems from the government bond market, it is unlikely that government bonds will be as saleable as expected. This would apply to Treasury Bills as well. [1]

If the crisis stems from the banking sector it is very possible that pre-agreed loans and letters of credit may not be honoured, and that money market pooled funds with high levels of bank exposure, will remain at a stable price. [½]

It is therefore sensible to also model the marketability impact on key asset classes that are consistent with the scenario being modelled. [½]

[Maximum 9]

4 Other tuition services

In addition to the CMP you might find the following services helpful with your study.

4.1 Study material

We also offer the following study material in Subject SA7:

- Flashcards
- Mock Exam and AMP (Additional Mock Pack).

For further details on ActEd's study materials, please refer to the *2025 Student Brochure*, which is available from the ActEd website at www.ActEd.co.uk.

4.2 Tutorials

We offer the following (face-to-face and/or online) tutorials in Subject SA7:

- a set of Regular Tutorials (lasting three full days)
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- an Online Classroom.

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4.4 Feedback on the study material

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There are relatively few drawbacks other than the fact that the charges will be quite high relative to equity and bond CISs. Investors may also find that the forestry portfolio is invested more globally than they would prefer, exposing them to currency and political risks.

Perhaps the lack of ability to control the investment directly could be a negative. But in reality there are not many sub-sectors into which to divide forestry, so control may not be that much of an issue.

Depending on the commodity involved, the investment horizon could be short (many crops have 12-month or shorter growing cycle) or very long term (a timber tree may take many years to reach suitable size for harvesting).

The investor would also need to evaluate whether they have the necessary skills to set up, manage and harvest or extract the commodity. A typical pension fund, for example, is unlikely to have expertise running a plantation but may deem it worthwhile to obtain such expertise or partner with a production company if the perceived reward from the plantation investment is high.

10 Historical performance of asset markets

The following section is quite long and looks at the historical performance of various asset classes. It is more important to know the general shape of the historical performances, and the reasons for the trends and any sharp movements, rather than know the exact returns over historical periods.

The following charts illustrate the historical behaviour of various main market indices and indicators.

10.1 Equity markets

Global equity markets

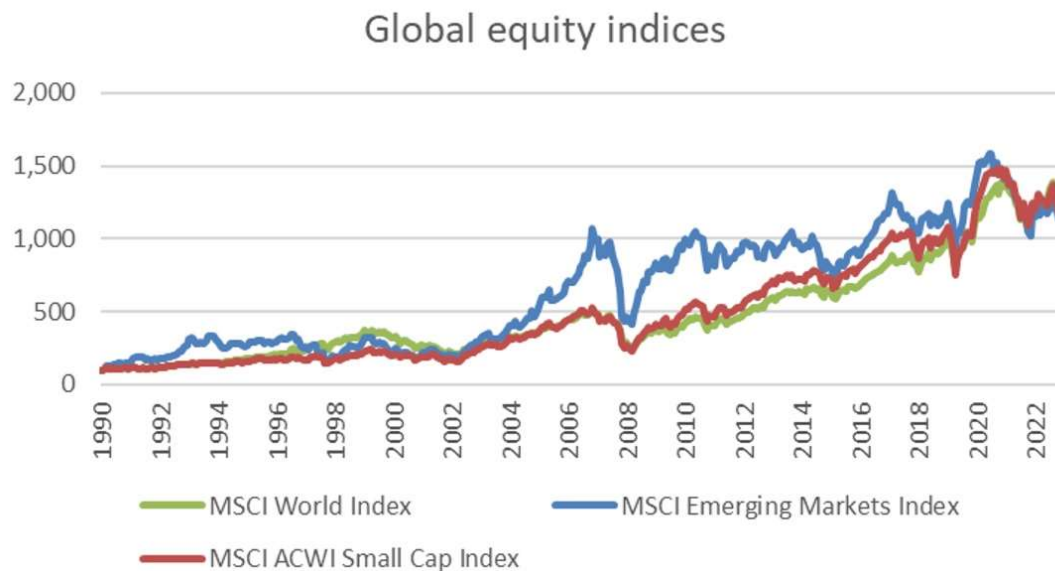


Figure 4.10.1

Source: MSCI: IFoA calculations

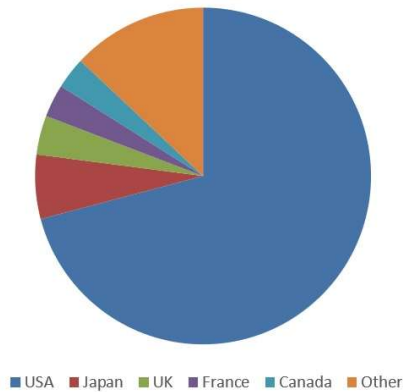
The World index is the one that is less volatile in the picture, and emerging markets is most volatile, mainly above the other lines.

Performance of the MSCI World Index, a widely used index for global developed market equities, and the MSCI Emerging Markets and small cap indices, rebased and shown from Dec 1990 – Dec 2023.

The World Index is dominated by developed markets, notably the USA. Note how performance is positive overall, but with significant negative periods corresponding (in the case of World Index):

- to the 'dot.com' bubble bursting in 2000-2001
- to the 2008-2009 financial crisis
- (in the case of the Emerging Markets Index) additionally to the Russian and emerging markets debt crisis of 1997-1998.

Developed markets country weights



Emerging markets country weights

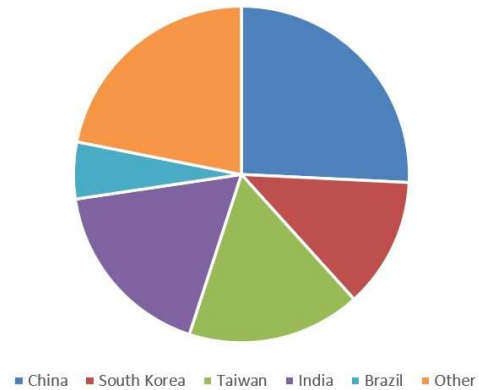


Figure 4.11.2 (both charts)

Source: MSCI; As at February 2024

If the colour categories cannot be easily seen in black and white, the segments begin at 12 o'clock and work clockwise (eg in the first graph USA is the largest, then clockwise Japan, UK, France, ...)

The USA is the world's largest equity market, representing over half of global market capitalisation. In emerging markets, China has grown rapidly over recent decades to become the largest single constituent.

The information technology sector is the largest individual sector in both, making up around 20% of each index.

The historic dividend yield for the MSCI World Index is around 2% while the MSCI Emerging Markets Index yield is about 3% as at March 2023. It has been in the range 1.5%–2.5% for most of the past decade.

US equity markets

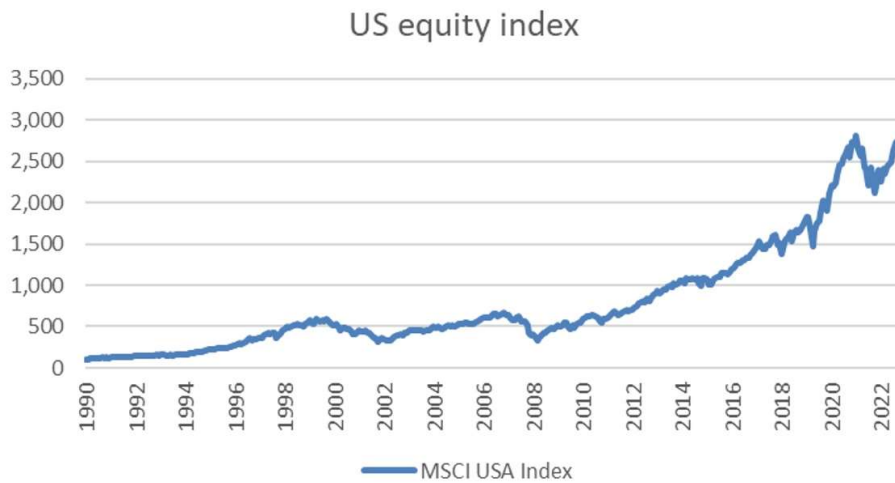


Figure 4.10.3

Source: *St Louis Federal Reserve; IFoA calculations*

The performance of the S&P500 Index is widely used for large cap shares in the US equity market, and the Russell2000 Index for small cap shares, both rebased and shown from Dec 1990–Dec 2023.

Small cap shares have outperformed very slightly over the period 1990 to 2021 but with periods of under- and outperformance at various times.

UK equity markets

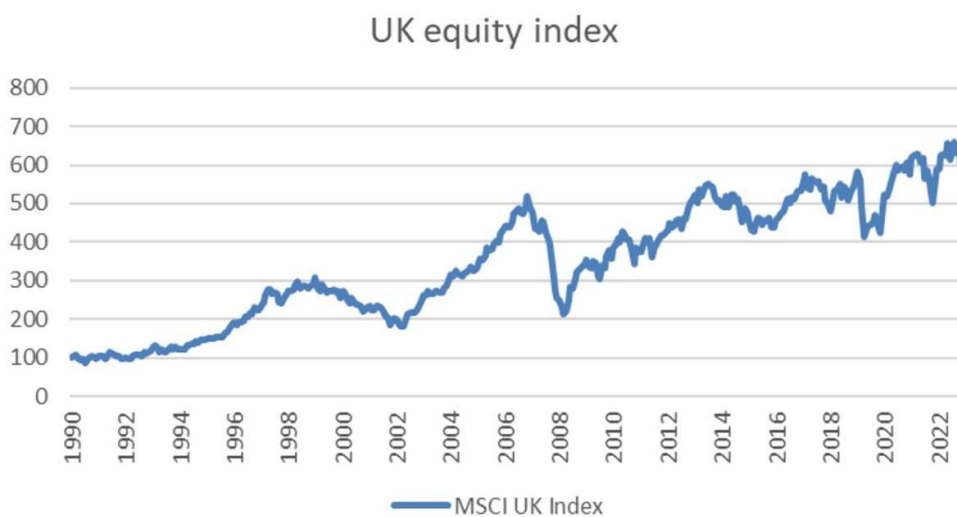


Figure 4.10.4

Source: *London Stock Exchange; IFoA calculations*

Performance of the MSCI UK Index, the main market index for the UK equity market, rebased and shown from Dec 1990 – Dec 2023.

The performance pattern is broadly similar to the US market index. More recently the higher number of 'mega cap' technology companies on the US market has resulted in some divergence in performance.

10.2 Fixed income markets

Global bond markets

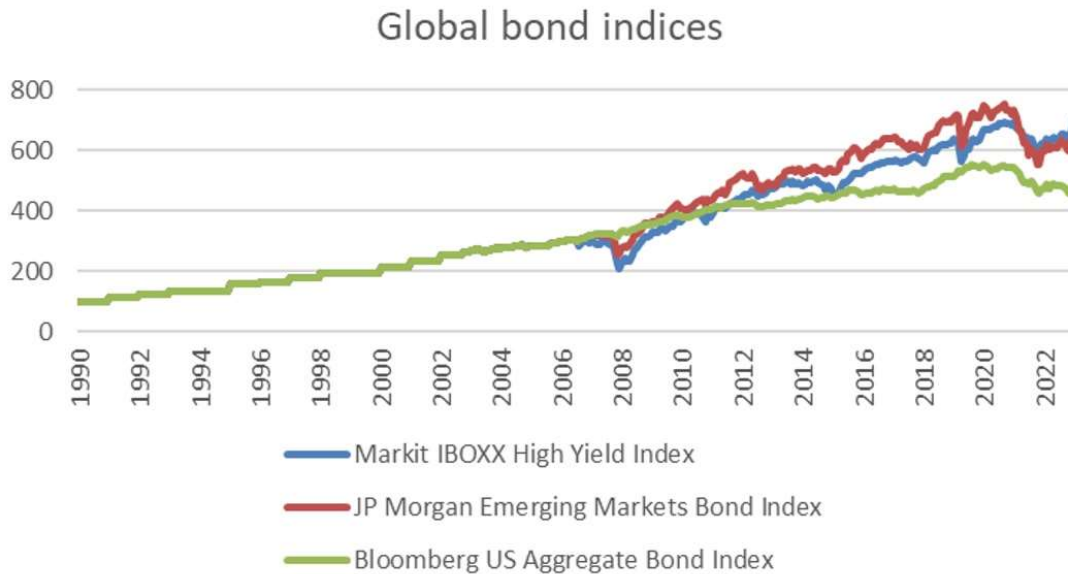


Figure 4.10.5

Source: *iShares.com*; *IFoA calculations*

Performance of the Markit iBoxx US Liquid Investment Grade Corporate Bond Index and Markit iBoxx US Liquid High Yield Bond Index, both representative of the US bond market, rebased and shown from Dec 1990 – Dec 2023.

As might be expected bond indices have displayed a smoother, less volatile (and overall less rewarding) profile than comparable equities. Having said that, high yield bonds suffered particularly during the 2008-2009 financial crisis; this may be as expected since the crisis was foremost a *fixed income* or *credit* crisis rather than one affecting equities more generally.

Performance of the JP Morgan Emerging Markets Bond Index, as shown in Figure 4.10.5, is a representative index of emerging market bond performance, rebased and shown from Dec 1990 – Dec 2023.

10.3 Currency markets

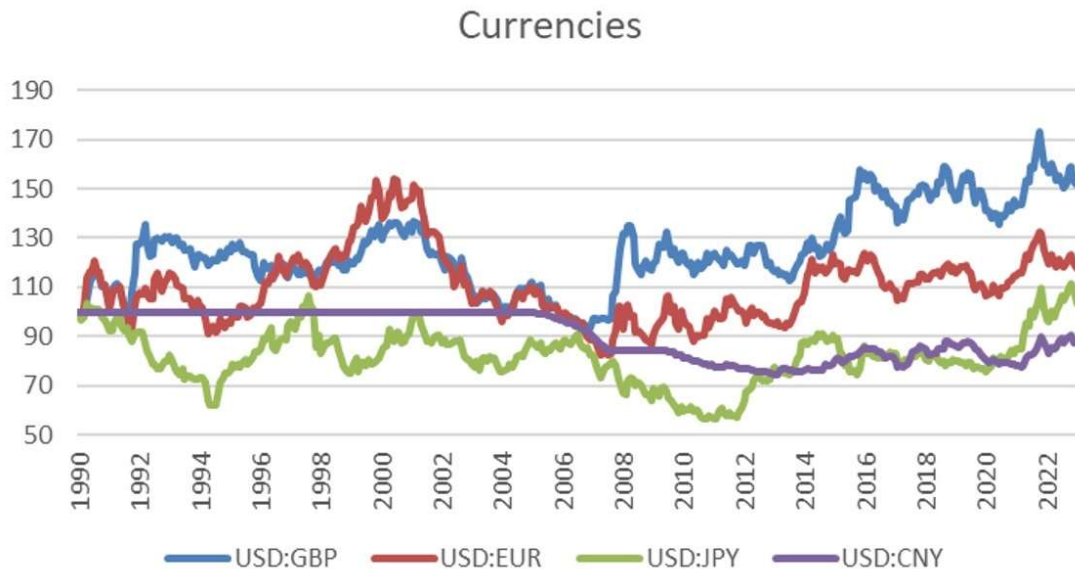


Figure 4.10.6

Performance of the GBP/USD, EUR/USD, JPY/USD and CNY/USD exchange rates, rebased and shown from Dec 1990 – Dec 2023 (Renminbi since Aug 2005). An increase in the chart level indicates a *weakening* of the respective currency against the US Dollar.

A rise in the currency chart indicates a weakening currency relative to the dollar. The smoother chart is the Chinese Renminbi which only moves from 2005, the weakest performer (top line) is the pound, and the line that spends most of its time at the bottom is the Yen.

Some exchange rates are driven by market forces whereas others tend to be managed by the relevant Central Bank (that is, the movement in the exchange rate is a combination of market forces and intervention by the Central Bank to achieve a particular level or particular path). The Chinese Renminbi for example, tends to experience less volatile behaviour than, say, UK Sterling because the People’s Bank of China is more active in managing the path of its exchange rate.

Over time, exchange rates have fluctuated, however there is also an argument that exchange rates are somewhat mean-reverting – in that they return to a long-term level after short-term deviations. Certainly looking at the historical performance as above shows there have been large intra-period moves, but without an obvious trend in favour of any one major currency. Currencies which are undervalued tend to result in cheaper exports for the country in question, which increases the inflow of foreign currency from foreign consumers, which in turn causes the local currency to re-appreciate. As a consequence, many investors prefer to hedge out their currency exposure, or to engage in short-term tactical currency trading. Few investors consider unhedged currency positions as long-term strategic allocations.

10.4 Commodity markets

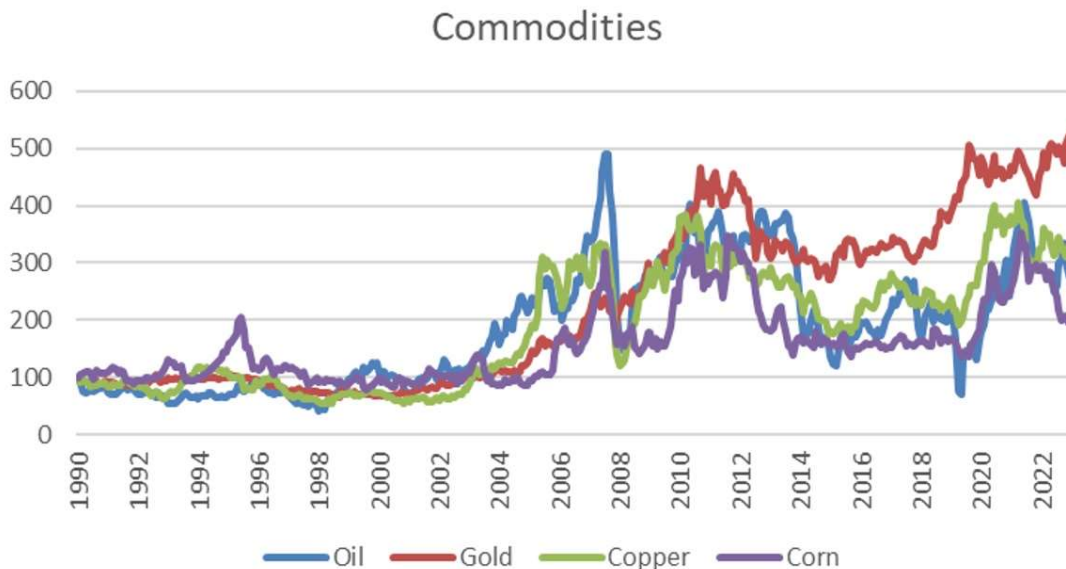


Figure 4.10.7

Source: *macrotrends.net; IFoA calculations*

Performance of oil, gold, copper and corn spot prices, in nominal terms, rebased and shown from Dec 1990 – Dec 2023.

Commodity prices typically exhibit greater price volatility than equities. In particular, commodities can be prone to ‘bubble’ and ‘depression’ behaviour, where belief of a shortage (or conversely belief of excess production) has a significant impact on short term prices. Also, there is an argument that the price of a commodity does not necessarily have any long-term growth underpin – unlike, say, a company which can grow its earnings year by year. Continuously increasing commodity prices would imply either an ever-worsening shortage caused by some combination of ever-increasing demand (with constant supply) or constant demand with a depleting resource. New sources of production or substitutes for demand are often found, causing the market to adjust back to a ‘normal’ level. An example of this would be the discovery / invention of the shale oil process over recent decades which enabled large previously-untapped oil reserves to be accessed. This was initially driven by a high oil price, promoting the discovery and development of new drilling techniques which in turn led to an increase in supply.

Students should be aware of the major events that have occurred in the last 10 years, and the events that dominate financial market discussion leading up to the exam dates (for the 2025 exams for example, that means events up to the end of 2023).

The steep incline for most commodities since 2020 is in part due to the Ukraine war, and the inflationary impact on the costs of many products has had serious implications for global economies. The incline over the last decade is in general also due to the vast increase in the money supply in almost all economies over that period, which has fuelled demand-pull inflation.

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3 Key global economic and monetary trends

3.1 Monetary Policy and Central Banks

In 1971, the US officially terminated the convertibility of the US Dollar into gold, thereby making the US Dollar a fiat currency. A fiat currency is one without any intrinsic value. This brought to an end the Bretton Woods agreement for the management of international monetary regimes established at the end of World War II, whereby internationally currencies, not backed by gold, could be converted into US Dollars, which was convertible into gold. The Bretton Woods agreement was a quasi-gold standard. Before Bretton Woods, the gold standard was in operation whereby international currencies were mostly convertible into gold.

Since 1971, the money of most countries does not have any intrinsic value. Historically in such regimes the money eventually became worthless as governments began to print increasing amounts of it. As Voltaire put it, '*Paper money eventually returns to its intrinsic value*'.

A graph showing the growth of OECD broad money (M3) since 1990 is given below:

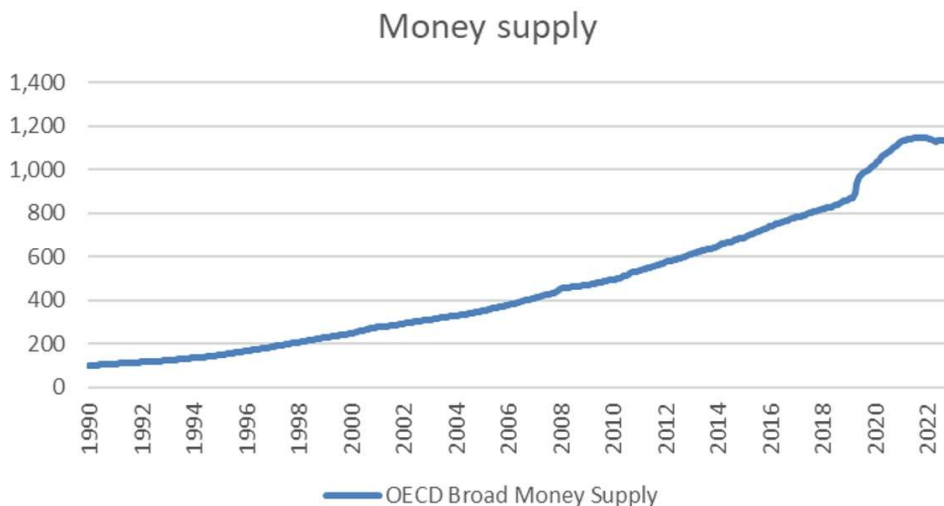


Figure 8.2

Source: <https://data.oecd.org/money/broad-money-m3.htm>

Broad money (M3) is defined by the OECD as currency, deposits with an agreed maturity of up to two years, deposits redeemable at notice of up to three months and repurchase agreements, money market fund shares/units and debt securities up to two years.

The graph shows that money supply has increased at a significant rate since the end of Bretton Woods, and very significantly since the start of 2019 in response to the COVID19 pandemic.

A graph showing OECD broad money as a percentage of GDP is given below:

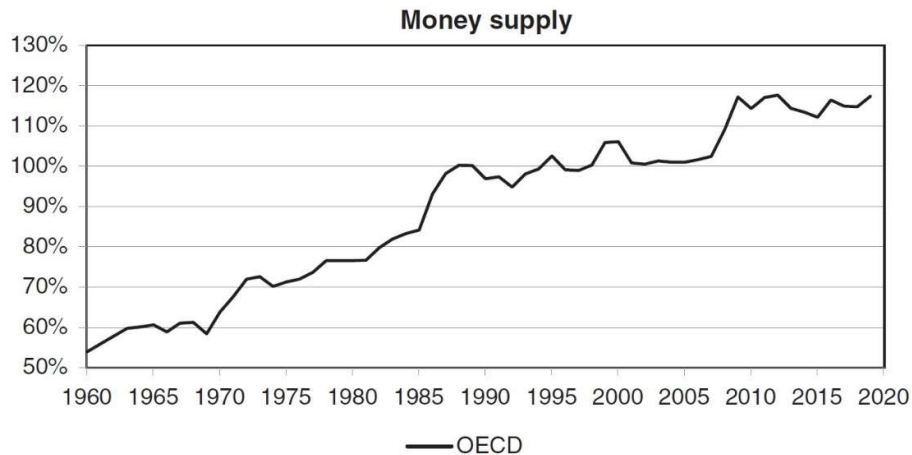


Figure 8.3

Source: OECD

The graph is based on data from the World Bank and shows broad OECD money supply as a percentage of GDP increasing considerably since the collapse of Bretton Woods. For example, in UK the percentage went from 40% to almost 140% from 1960 to 2015.

Since the financial crisis of 2008 - 2009, the main monetary policy used by the large developed economies in the world has been QE. This involves the central banks printing money and buying assets that increase the size of their balance sheets.



Question

Discuss the reasons why QE became the dominant monetary policy in developed countries from the financial crisis in 2008 until the end of Covid in 2021. Discuss why Quantitative Tightening (QT) is now commonly undertaken in developed economies.

Solution

Why QE became the dominant policy

One of the main reasons is that the other traditional tool, lowering and raising short-term overnight interest rates, became constrained by the fact that rates in most developed countries were close to or at zero. If central banks wished to stimulate growth (through borrowing) then there was no more scope for interest rate reductions. QE is then the tool of choice as its use is not constrained. A central bank can theoretically increase its balance sheet indefinitely as it is not subject to regulatory constraints such as Basel II or Basel III.

A second reason is that the developed countries found that the currencies of countries that did not embark on QE strengthened on the FX markets, causing difficulties for exporters, and causing an increase in imports from overseas. It therefore became difficult to resist the trend when other countries were engaging in QE. This was linked to the fact that some central banks believed that competitive devaluation of their currency was the right thing to do at that stage in the economic cycle.

A third reason was the threat of deflation. This had been considered to be a danger since various economies became stuck in a devaluation 'spiral', whereby consumers put off any purchases because they believed that prices would be lower in a year's time. This further weakened spending and therefore caused companies to further decrease prices to sell their products, and hence deflation became worse. Many developed country central banks believed that QE was a way to avoid this, by ensuring that the commercial banks had plenty of scope to increase their lending books and expand money supply.

A fourth reason is perhaps that QE led to a catch-22 situation, whereby if a central bank that had undertaken significant QE stated that the policy is to end (tapered) or be unwound (Quantitative Tightening), the bond markets became very nervous. This left the central bank as a large holder of government bonds, exposed to large losses (which are amortised annually to the government that underwrote the policy).

Why QT is now common

The money supply of most western economies was significantly expanded in the years from the 2008 financial crisis leading up to 2021, and the inflationary impact took a long time to materialise. But after the pandemic, as economies began to return to normal, demand-pull inflation rose rapidly, and became difficult to control. The Ukraine war then added some cost-push inflationary pressures to the system, leading to a situation where inflation became hard to contain. Central banks used short-term interest rates, but these impact mortgage borrowers more than other individuals. Governments can use tight fiscal policy, but western governments are already raising more tax from their economy than they have in post-war history; raising more would risk a severe recession. Cutting public spending is proving politically unpalatable, which leaves the option of reducing money supply gradually through QT.

A graph showing the increase in the size of central bank balance sheets in these countries is given below:

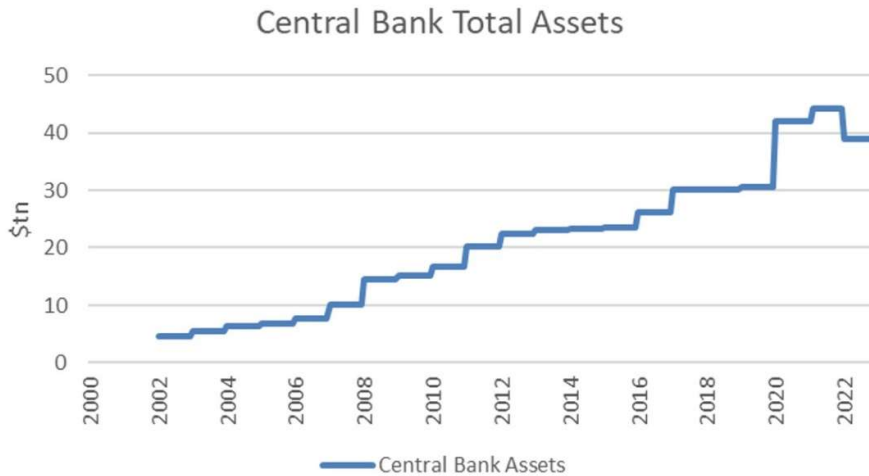


Figure 8.4

Source: Statista

At the time of the financial crisis the rapid increase in central bank balance sheets was unprecedented, and in relative terms remains a very significant increase indeed. With the benefit of hindsight the continued application of QE and more recently the response to COVID 19 has resulted in balance sheets today being many multiples larger than they were before the financial crisis.

3.2 A brief history of political economy

Most western developed economies are 'capitalist' as distinct from the more centrally planned economies of communist and formerly communist countries.

Capitalist economies aim to give more economic freedom to their people. This freedom has usually enabled people to take more risk, by giving them greater access to markets and to speculate on these markets, which may result in a better allocation of capital to profitable projects (as those projects with higher expected returns attract capital). However, the same freedom also increases the volatility of the capitalist economy, as people are free to be fearful and greedy at different points of the economic cycle.

The easier access to markets brought about by financial deregulation and improvements in technology has arguably brought in more investors less well equipped to make good investment decisions (particularly individual investors) which might be regarded as also contributing to the greater volatility.

Some of the challenges of operating a free economic and political model are summarised in a discussion by the American public relations expert, Edward Bernays:

'It might have been better to have, instead of propaganda and special pleading, committees of wise men who would choose our rulers, dictate our conduct, private and public, and decide upon the best types of clothes to wear and the best kinds of food to eat. But we have chosen the opposite method, that of open competition. We must find a way to make free competition function with reasonable smoothness. To achieve this society has consented to permit free competition to be organised by leadership and propaganda.'