



1573 – 2023

# THE ECONOBETHAN

March 2023

Edition XIII

450th Anniversary Special

450 SPECIAL

The Reformation Of the Elizabethan Charter

ECONOMICS

The Revolutionary Effectiveness of Nudge Economics

POLITICS

Using Game Theory to Predict The Outcome of the Russo Ukrainian War

# From the Headmaster's Desk

450TH EDITION

29th March 2023

Whilst the School's 450th anniversary is naturally a time for celebration - rejoicing in the strength and success of our modern-day community and giving thanks for the work of our forebears - it is also an opportunity to reflect upon its multi-faceted history. As my predecessor, Dr John Marincowitz (Headmaster 1999-2011), explained at this year's Senior Awards Ceremony, when discussing his new published history of the School, the fortunes of the School have repeatedly been shaped by the political, economic and social context of the time. He emphasised that much of the interest in the development of Queen Elizabeth's, and its multiple reinventions over the centuries, can be found in considering not just the 'what', but in the 'how' and the 'why'.

These are questions and discussions that this special edition of *The Econobethan* take up with great skill. The contributors, across the scope of the issues covered, are to be congratulated for their considered engagement with the material and for the courage in conveying their conclusions.

Though a publication primarily interested in economics, each edition emphasises the interconnected and multi-disciplinary nature of some of the most fascinating questions and debates facing us in the modern world, whether those connected to climate change, globalisation or the war in Ukraine.

*The Econobethan* is an excellent example of what we refer to here as free-thinking scholarship. The curiosity and drive to explore and investigate topics of interest, beyond the curriculum, offering new insights and ideas. By researching these matters and committing their thoughts to paper, our writers are developing their own understanding of our school, our society and the wider world and I am sure that readers will be similarly engaged and inspired.

*Neil Enright*  
Headmaster



Hello!

Welcome to this academic year's 4th instalment of the Econobethan! We are a student-run, multidisciplinary publication committed to providing thought-provoking insights, commentary and articles exploring the relationships and dynamics between theory and application. Our talented writers across the Upper School strive to provide a comprehensive and nuanced understanding of the humanities. We cover a wide range of topics from microeconomic insights through game theory, financial markets, political development, and social issues, aiming to shed light on some of the most pressing issues facing society.

This edition aims to highlight the journey and development of our school across its rich 450 years of history, and includes a multitude of multifaceted perspectives and comprehensive insights ranging from an exploration of the economic factors and impacts surrounding the reformation of our school's Elizabethan Charter, to an investigation into QE's formula for success in the 21st century.

Our first article informs on the origins and political significance of the Elizabethan Charter, and the historic ramifications it has had on English society. Here, Saim explores the lasting impact the reformation of the Charter in the 19th century has had on the school across the centuries. Rishab takes us a century forward to present his investigation into the historical context of Britain post-WW2 and the prevalence of the effects of economic and social policy of the time on QE today. Akheel closely follows with a historical account of the changes that education policy in the mid 20th century had on the school and its performance. We are then taken through Aditya's insights into the factors, policies and strategies that play a part of QE's success in our modern era. Disparities in education have existed for generations and continues to be the subject of ancient, contentious debate in British politics. Nishanth explores this "Great Divide" and explores the disparities within post secondary education outcomes in the UK, and how QE continues to maintain its top position despite failing social contracts in education. Bringing us back to the modern day, Nikhil investigates QE's strategies to navigate through the uncertainty and difficulties of the COVID-19 pandemic, and marks the end of the 450 special of this edition.

Aston brings the focus back to pure economics and presents a microeconomic insight into the conflict economics used by the British Empire for ascendancy, utilising game theoretical insights as a lens to investigate the interactions of the Empire and other economic agents. He then follows with a pressing macroeconomic debate surrounding the mandates of the Bank of England and the implications of climate change challenges on future monetary policy. Shrey investigates the revolutionary advent of Nudge economics in the modern economy and policy implications for the future. Ahyaan provides his technical perspective on the political agendas and strategies at the disposal of Russia and the West, employing game theory to calculate payoff's and predictions for the future of the Russo-Ukraine war. Sajin provides a unique comprehension of the effects of the development of chemical processing techniques on the UK economy and its origins. Avinash employs macroeconomic insights into the global economy to provide a broad judgement on the true nature of globalisation in the modern disposition of the world. Our sociology expert, Sena, unveils the pro's and con's of the monarchy, a political debate which has grown in momentum exponentially, in recent times. Siddharth follows on with a striking investigation into the importance of confidence in central banks and their credibility.

Our resident linguists, Aayush and Aditya, explore the history of Thatcher's government and the founder of our school's charter in 1573, respectively, to finish off this edition with a thought-provoking account of the historical foundations of the modern UK economy and our school.

Thank you for joining us on the exciting journey of insights and accounts from our contributors in the 450 section, and engaging perspectives on broader economic, political and social issues across this edition of the Econobethan. We welcome feedback and suggestions from our readers, and are always looking for ways to improve and evolve our publication. Huge thanks to all our writers for the engaging curation of articles in this edition and the massive support from all our readers, we appreciate all the enthusiasm and quality of submissions and hope to maintain this through all future releases of The Econobethan.

Regards,

Aston, Aditya, Nishanth and Avinash

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# 450th ANNIVERSARY

24th March 1573

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1700

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24th March 2023

# The Reformation of the Elizabethan Charter

## Understanding Its Origins and Political Significance

Saim Khan

### Introduction:

Exactly 150 years ago, on its 300th Anniversary, QE underwent the biggest change throughout the course of its history until that point – the Elizabethan Charter, which had until then served as the school’s primary legal document, laying out the operation and ethos of QE, was relegated to the role of a historical document. It was replaced with the Stapylton–Hutton Scheme. This fundamentally shifted the framework – both legally and symbolically – upon which the school was based, heralding a range of changes including eliminating the existence of boarding students for the first time in 300 years.

However, whilst it may seem remarkable to us now, this was by no means a sudden or shocking change at the time – in fact, it was typical of what was happening to grammar schools up and down the country. The 1860s and 70s were in many ways at a confluence in the rivers of time, with rapid economic progress, rapidly evolving ideas around government duty, electoral reform, powerful statesman dominating the political scene and so much more all melding together to create the perfect storm of volatile socioeconomic conditions that led to the complete uprooting and overhaul of the way education was approached in this nation. Through this article, I hope to first outline more broadly the undercurrents of political, economic, and social factors which helped mould and shape English society during the mid-1800s, before exploring how the changes at QE were a microcosm of this broader societal shift. Philosophical Upheaval:

To understand what was being done in the 1870s, it is first important to understand what the thought process was of those who were making decisions. The 1700s and 1800s marked arguably the biggest explosion in philosophical thought since the Greeks first formalised the discipline around two millennia prior. The famed ‘Age of Enlightenment’ in the 18th Century saw rise to the works of thinkers like David Hume, Immanuel Kant and Voltaire. Many new political and philosophical theories also emerged over these two centuries, with John Locke’s ‘social contract’ theory giving rise to Liberalism by the end of the 17th Century, the emergence of Conservatism in the UK under Thomas Hobbes and Edmund Burke, Communism’s rise due to Karl Mark in 1848, Utilitarianism’s inception by Jeremy Bentham and JS Mill in the early to mid-1800s and many, many others. The vast majority of these political philosophies also called for overhauls, oftentimes radical, in the role of the government of a country. Suffice to say, whilst historically governments in the UK had tried to remain as uninvolved as possible in both people’s personal lives and the economy, there was growing pressure for government involvement in areas such as education.

This growing pressure came from these aforementioned prominent thinkers who almost invariably argued that it was the government’s responsibility to provide education to its citizens, from as early as Adam Smith in “The Wealth of Nations” (1776) when he argued that the government needed to provide education to all its citizens to increase their productivity, to JS Mill arguing in “On Liberty” in 1859 that education should be available to all regardless of their social class. Cumulatively, this meant that whilst schools, and in particular grammar schools, had been given large amounts of independence in their functioning up until this point, they were, as the 1850s, 60s and 70s rolled by, increasingly subject to government scrutiny due to this increased expectation that the government would involve itself more directly with education in a country. This would in part help lead to the eventual reformation of QE’s charter.

### The Industrial Revolution:

The economic context is another indispensable factor when considering the wider societal shifts occurring over this period. In the late-1700s and early-1800s, Britain (along with large parts of continental Europe and America), underwent a huge economic shift, with the previously agrarian economies giving way to facilitate the rise of the new manufacturing-based industrial economies (as a result of both the Industrial and Agricultural Revolutions). This was crucial because it enabled primitive forms of social mobility to occur on a meaningful scale in the first time in British history. Rather than having the vast majority of common people being forced to work on farms to help feed the population, inventions like new ploughs (e.g., the wooden plough) and harvesters meant that fewer people were needed to provide sustenance to the population. This instead enabled people to work in new trades and jobs that were available in the new industrial towns. Thus, people who had for generations been stuck in the lower classes of society (carrying out subsistence farming) were now occasionally able to climb up the social hierarchy by apprenticing in respectable trades in the towns and cities, with one example being “pauper apprentices”, which were orphans who were taken on as apprentices in mills to try and help them break free from the cycle of poverty.

Thus, there were now more of this ‘middling sort’ (i.e., people working in trades and jobs deemed ‘respectable’ rather than being trapped on farms) than ever before. Therefore, in the hundred years or so that followed the start of the Industrial Revolution, the middle class emerged as a large and distinct societal group for the first time in British history

(since that was enough time for a couple of generations of people from traditionally lower class families to climb up the social ladder in small but promising steps). This burgeoning middle class then wanted to ensure that their children were guaranteed the best possible futures and thus demanded a higher quality education than that which most local grammar schools – most of which were originally designed to help “Foundation Scholars”, or non-fee-paying pupils – could provide. However, these families still weren’t rich enough to access the high-quality and high-fee education provided by the premier institutes of the country, like Westminster School and Winchester College, and places at these institutes were often reserved for the children (mostly sons) of the elite aristocracy. Therefore, the families of the new middle classes weren’t happy, and thus exerted huge levels of pressure on the government to fix the situation and provide education more directly suited to their needs. The situation was perceived to be so dire that Lord Brougham (Lord High Chancellor) describing the middle classes as “the most neglected of all in respect to the means of a good education”.

### **Political shifts:**

A lot of what the article has thus far served to address has ultimately served to lead to increased pressure on the government to act in regards to schooling (whether it be due to the growing middle class or the emergence of new political philosophies). However, there are still a few more key political events that must first be understood in order to fully comprehend why QE would end up overturning a 300-year-old document. Firstly, the process of significant electoral reform had occurred in the 19th Century, with the Great Reform Act (1832) enabling middle class men to vote for the first time, and working class men being given the vote in 1867. This directly incentivised governments into adopting much more progressive positions – including reforms to education – in order to capture this increased vote base.

However, one can never truly discuss the political landscape of the latter half of the 19th Century without addressing the true political geniuses who led the two main parties at the time – William Ewart Gladstone (Liberal, PM four separate times) and Benjamin Disraeli (Conservatives, PM twice). Between the two of them, they ruled for all but 7 years from 1868 to 1894.

These two political powerhouses, these great statesmen known for rousing public speeches and levels of popularity with the electorate that most modern British political leaders couldn’t even dream of, had a great personal rivalry.

Within this rivalry, one strong element of it was over social reform – Disraeli was by nature rather elitist, and desired to maintain the older social hierarchies that had dominated English society.

However, he was a strong opportunist, and realising that (with the expansion of voting rights) social reform would be one of the strongest platforms to campaign on, made sure to present himself as a man with the interests of working and middle class men at heart. Gladstone, on the other hand, was a bona fide reformist, desiring to alleviate the struggles of the lower and middle classes, including equitizing access to education. Therefore, educational reform was an item that was high on the agendas of both men.

### **Impact on QE:**

Thus, the stage was now set – the political reform, rapid economic development, radical philosophical shifts all served as the backdrop under which QE would transform away from its roots and into a new era of education.

Until now, all of the above factors have merely pressurised governments into acting, into taking a much more active role in managing schools around the country by ensuring that there is some national standard of education, even if it meant removing the relative freedom each grammar school had until now enjoyed. However, the methods through which this was achieved are still left to touch on – in the context of QE, the most important reform was the Taunton’s School Enquiry of 1864. Following the Clarendon Commission in 1861 which investigated the top 9 leading public schools in Britain (QE was sadly not considered good enough), the Taunton’s School Enquiry had the oh-so-simple job of investigating the remaining 782 endowed grammar schools in the country (with endowed just meaning that at least in part the schools relied on some level of public funding), since these were where middle-class families would be getting their children educated.

The recommendations of the enquiry were published in 1868, calling for a national, centralised system of secondary education, with a central authority which managed endowments for all schools. This centralisation aimed to eliminate schools’ reliance on their original Charters or Statutes, and hoped to get a much greater homogeneity nationally around standards of education. These recommendations were duly incorporated into national law in the 1869 Endowed Schools Act under the first Gladstone Ministry, which formalised the authority of the central government over the prior independence that endowed grammar schools like QE had enjoyed. One of the first tasks of the new School Commissioners (as members of the new central board were called) was to create and deliver new schemes of managements for endowed schools across the nation, with over 300 schools receiving these new schemes by 1874. The reason so many schools, and more importantly their Boards of Governors (who had until now largely controlled these schools in their own manners),



were so willing to give up this independence was that it enabled them to access much greater funding from the Exchequer. Funding education had been one of Gladstone's key promises but was only available to endowed grammars which followed new schemes of management to ensure that there was greater central control over educational standards too.

In December 1868, before the Act had even officially been passed, QE's Governors had declared their full support for receiving a new scheme of management and integrating QE into this new model of education. The additional funding that they were to receive from the government was bolstered by the fact that the nearby Jesus Hospital Charity had excess funds and, since it was founded by the son of a QE Governor from 1610, the charity decided to bequeath these excess funds to QE. In 1871, the Stapylton-Hutton scheme as it came to be known (since Stapylton and Hutton were the two governors who were tasked with creating the scheme) was finalised with the Endowed Schools Commissioners in 1872, before receiving the Royal Sanction in 1873. Thus, it formally replaced the Charter as the instrument by which the school was governed, bringing a highly respectable one-off payment of £5,000 to the school (£430,000 in modern day value) and an annual grant of £400 (£34,500 in modern terms). The new scheme had a few significant differences from the old Charter, including:

Eliminating the provision for boarders since, due to the rapidly growing middle class in the High Barnet locality (which was benefiting from the rapid growth of London as a city), there were enough fee-paying day students that could come from the local area without the need to have boarders as well. Providing for a separate Lower and Upper School, unlike the original charter. The Board of Governors became an unincorporated body, unlike the previous one which had been designated a corporate body.

### **Conclusion:**

QE's 300th Anniversary was a time of huge change for the school – its core document, the one that had underpinned its existence for the last 300 years, was replaced by an entirely new scheme of management drawn up by two QE Governors. Yet, as radical as we may see such a shift to be today, it was the result of strong government guidance and part of a wider shift in educational attitudes around the country at the time. The reforms were spearheaded by a social reformist and political giant, William Ewart Gladstone (recognised by broadcaster Iain Dale as the second best PM of all time, behind Churchill). Yet, these reforms were only possible due to the backdrop of the monumental shifts occurring in society, such as the emergence of a middle class to demand these new educational facilities in the first place, and electoral reform which allowed the concerns of the middle classes to be considered seriously by politicians. These were politicians who realised that common societal and philosophical opinion was now that it was their duty to manage national standards of education.

The new Stapylton-Hutton scheme would go on to last a mere 31 years, until 1904, unlike the unchallenged dominance of the Elizabethan Charter in dictating the course of the school for 300 years, as a new era of social, political and economic change would bring new demands of the management of the school. However, suffice to say that the study of the reforms at QE, themselves a microcosm of wider societal shifts, provide a valuable insight into the volatile, constantly evolving social, economic and political climate of the 1860s and 70s.



# The Historical Context of Post War Britain and Its Impact on QE

Rishab Banerjee

## Introduction

What is Britain? We can talk about the roaring 50s or the downright detestable War periods. We can even mention the Normans and the Romans. Our school is lucky enough to have witnessed the greatest periods in Britain's history none more so than the recovery of the 1950s, a template which is needed currently in the modern times. The 50s resembles a manufacturing boom, an export led-growth haven but most importantly the sight of the UK climbing back to the top step of the ladder. Fortunately, QE was present to see this first-hand.

Every economist talks about post war Britain about how politicians were plotting a way back to high GDP growth. But let's delve into the background. Britain had just come out of the Second World War and now was firmly in the midst of the Cold War, with the Western powers trying to out-manoeuvre the Axis Powers. Productivity was low and National debt was at an all-time high in the late 1940s, approximately over 230% of GDP. Something was needed to be done otherwise Britain would be in dire straits. Fortunately, the coronation of Queen Elizabeth the second in 1952 provided a moment of inspiration and hope for the UK economy. This means that the rebirth of the monarch coincided with economic policies such as higher government spending, and higher spending into sectors such as education, healthcare which shifted the long-run aggregate supply of the UK, maximising steel and silver productivity in the economy. Social reforms as well as political reforms also took place with tensions easing between Japan and Germany and the UK as well as free trade between the West increasing, causing UK's export-led boom. Not only did this increase GDP but the financial standpoint of the UK across the globe changed with Britain being seen as a reliable trade partner once more.

What about immigration? UK's recovery also brought betterment in equality and acceptance of different cultures in the 1950s. UK's economy growth was so rapid that labour shortages were seen as inevitable. But the incentive for higher wages and increased GDP by over 43% resulted in increasing rates of migration into the UK, resolving the labour shortages problem in manufacturing and primary sectors that the UK was experiencing at the time. Social equality also occurred as the UK seeped innovation from Mary Jackson, where black people and specifically women were being incorporated into the UK engineering workforce.

We had also mentioned before about the improvement in education, something that our school has so much thrived upon. This can be seen about QE itself where the late end of the 1950s marked QE becoming comprehensive, giving opportunities to those where merit and academic success

counts, establishing a need for skill and academic brilliance so that the Elizabethan children could be incorporated into the labour workforce of the 1960s and late 1950s. To talk about the UK, there was a 25% growth in investment into the higher education systems and universities, with secondary education becoming more comprehensive. This allowed for brilliant students to thrive in post-war Britain.

Why was this significant? You may ask. The fact that new investment into schools and education as well as higher govt spending into trade links and manufacturing industries meant that the UK was heading towards an eradication of the laissez-faire attitude, which was highly prevalent in the 18th and 17th centuries. This marked a new scope for more government control and recognition among the British civilians, shown by the Festival of Britain event, where millions were invited across the North and South. Soon, by the mid-1950s, the UK re-established itself as a global power

Now to talk about society and socio-economic changes, there was a huge change in attitudes towards pop culture and modern music and art. People became more affluent and accustomed to popular arts and humanities with the decade of the 50s being the start of American Rock and Roll. This also stemmed from economic policies such as increases in expansionary fiscal policy, government spending and more freedom on advertising rights, where people had the voice to suggest their opinions more freely and honestly. The 1950s brought affluence and more liberation to many but it was also a place for people that left school, got a job and settled down and that is what made this decade so wonderful.

Everything that has been mentioned before revolves around a central theme and that is patience. The UK needs to follow their own model of the 1950s recovery and learn that not every economic recovery can happen overnight. Do we need to trust the government in power? That is up to you but what we must do is trust the policies being put in place. Just like how the old Elizabethans trusted the 1950s government of Churchill, we need to support our leaders in every way possible. That defines our 450th history. Trust, courage and belief.

# QE Goes Comprehensive

Akheel Kale

## Introduction

The 1960s saw a cultural upheaval within the UK; described as having the “first generation” free of conscription, there was a wave of radical ideas and ideologies washing over the former colonial power.

At the same time, it also saw grammar and independent school enrolment plummet from 8.1% to 5.7%; as part of the 1965 Comprehension Act. One of these schools was our

very own Queen Elizabeth’s School, which was forced into comprehensive status in the 1960s.

This article will look at the ideas and economic theory that influenced the act, as well as the impact on QE, and the aftermath and efficacy.

## The Labour Government, 1960

The labour government’s hold on power in 1964 was quite tenuous: they’d secured parliament with a majority of just 4 seats, and that was off the back of the now infamous Profumo affair, which saw the former secretary of state for war, John Profumo, unsuccessfully deny having an affair with Christine Keeler, who was also romantically involved with a Russian spy, Eugene Ivanov, who was then able to collect British secrets from Keeler.

At this time, Britain’s waning global significance meant domestic affairs further began to take center stage. Underneath Wilson’s government, significant progress towards social reform was made with the decriminalisation of homosexuality, legalisation of abortion and abolishing censorship within theatres.

This is best outlined within the Labour government’s manifesto; proclaiming that they’ll usher in a “New Britain”, united under “a national plan”. The focus was on accelerationism: in order to boost national production, as well as reducing the UK’s trade deficit.

One of the core aspects of such policy was education; the labour government’s manifesto details the Conservative “investment in people” as “tragically inadequate.” The notable aspect of such policy, and what was significant for QE at the time, was the 2nd bullet point:

“(ii) Labour will get rid of the segregation of children into separate schools caused by 11-plus selection: secondary education will be reorganised on comprehensive lines. Within the new system, grammar school education will be extended: in future no child will be denied the opportunity of benefiting from it through arbitrary selection at the age of 11. This reform will make it possible to provide a worthwhile extra year of education by raising the school-leaving age to 16.”

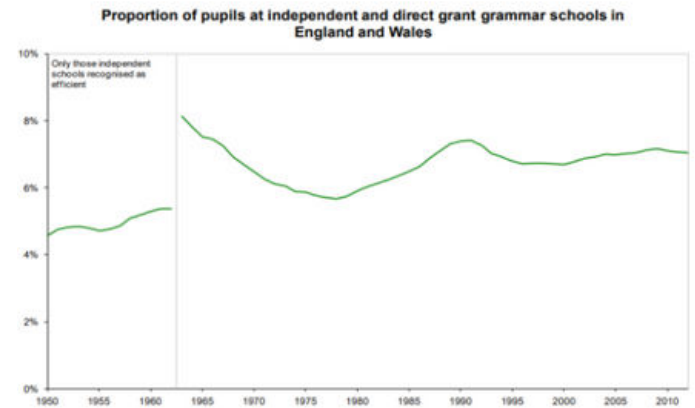


Figure 1 Grammar school enrollment over time (UK Parliament, 2012)

Essentially, the focus was to cut back on the academic separation of the grammar school system in England: and to assimilate the student population into schools that were open to all, and to teach the same curriculum.

## UK Schooling

For context, the UK schooling system operated on a tripartite system. Primary school education would proceed as normal, along with 11+ examination, but students would then be placed into 3 areas. Grammar schools, for academically inclined students; technical schools, where students could learn a trade (although this was never; and secondary modern schools, which would provide a basic secondary education, where students would undertake “O-Levels”, instead of “A- levels” which were equivalent to GCSEs. As well as this, there was little movement within secondary modern schools and grammar schools; with students that scored particularly strongly in O-Levels still being unable to move up to grammar schools.

Undoubtedly, criticism was lobbied at this system over the fact that an examination at age 11 would decide the course of a person’s academic study, and potentially their life; a clearly flawed system that would prevent social mobility.

120 Girls Passing H.S.C. or G.C.E. ‘A’ level  
Social Class of Fathers

|                     | percentages |        |
|---------------------|-------------|--------|
|                     | 1949–51     | 1952–4 |
| Higher Professional | 14          | 21     |
| Lower Professional  | 32          | 39     |
| Clerical            | 22          | 14     |
|                     | 68          |        |
|                     | 74          |        |
| Skilled Manual      | 21          | 19     |
| Semi-Skilled Manual | 6           | 7      |
| Unskilled Manual    | 5           | 0      |
|                     | 32          |        |
|                     | 26          |        |
| Total %             | 100         | 100    |
| Number              | 63          | 57     |

Figure 2 Girls in upper/middle social classes had a much higher chance of passing secondary education, before and after the 1944 Education act (Jackson and Marsden, 1962)

This was further compounded on through Brian Jackson’s and Dennis Marsden’s “Education and the working class”, where they would go on to detail that the secondary system would lead to many passes in upper class students, with little for lower classes, who would often be placed in secondary modern schools. It also showed how the previous 1944 Education Act, designed to promote increased social mobility, still had little change.

### Human Capital

Additionally, John Vaizey, an advisor for the labour government, was also further pushing his theories about investment into people, or the idea of “human capital”. Prior to the 60s, the theory was difficult to prove, as it was quite difficult to provide the hard data required. Vaizey used the USA’s growth of 3.1% annually, and then compared it with the subsequent increase in capital and labour inputs being only 1%, to suggest that qualitative improvements in capital were at play; better workers, machinery, etc. He then further suggested that this same improvement could be linked to advances in education creating more skilled workers, thus increasing productivity and production (Wheelwright and Vaizey, 1963). Today, this theory, although perceived as valid, isn’t as simple. Behavioural economics attributes this increase to a multitude of factors, and not simply just educational increases.

### Implementation and QE

During July 1965, Circular 10/65 was issued; and declared the “end of selection at eleven plus”. This was further incentivised by the fact that only comprehensive schools would be able to receive government funding. QE was one of these schools, and immediately saw a doubling of all admissions to over 500 places; although these numbers would fall in the 70s and 80s. This wouldn’t last, by any means, as Harold Wilson’s Labour would be taken out of power, and circular 10/70 was the then secretary of state for education and state, Margret Thatcher’s attempt to rollback 10/65.

Figure 3 shows the policy was successful in greatly reducing the number of grammar schools within the country, from 1,285 in 1965, when the policy was put in place, to 173 in 1985; as well as increasing the number of comprehensives from 262 in 1965, to over 3000 post 1980. In terms of being able to achieve higher labour productivity, according to human capital, it can be reasonably assumed the policy was unsuccessful. This is shown through Figure 4: there is no indication that UK labour productivity significantly rose, apart from post-WW2 economic recovery, of which all countries experienced. And today, the UK still has one of the lowest labour productivity levels in the G7 nations. Finally, QE was able to move out of its comprehensive status under Eamonn Harris, and rose to academic prominence in the early 2000s to become one of the most prominent British secondary schools in recent memory.

|                           | Modern | Grammar | Technical | Comprehensive | Other | Total |
|---------------------------|--------|---------|-----------|---------------|-------|-------|
| <b>Schools</b>            |        |         |           |               |       |       |
| 1955                      | 3,550  | 1,180   | 302       | 16            | 96    | 5,144 |
| 1960                      | 3,837  | 1,268   | 251       | 130           | 315   | 5,801 |
| 1965                      | 3,727  | 1,285   | 172       | 262           | 417   | 5,863 |
| 1970                      | 2,691  | 1,038   | 82        | 1,145         | 324   | 5,280 |
| 1975                      | 1,216  | 566     | 29        | 2,596         | 155   | 4,562 |
| 1980                      | 445    | 224     | 17        | 3,297         | 60    | 4,120 |
| 1985                      | 284    | 173     | 4         | 3,479         | 42    | 4,028 |
| <b>Pupils (thousands)</b> |        |         |           |               |       |       |
| 1955                      | 1,234  | 528     | 87        | 16            | 49    | 1,914 |
| 1960                      | 1,638  | 673     | 102       | 129           | 182   | 2,724 |
| 1965                      | 1,555  | 719     | 85        | 240           | 221   | 2,820 |
| 1970                      | 1,227  | 605     | 44        | 937           | 197   | 3,010 |
| 1975                      | 698    | 344     | 18        | 2,460         | 100   | 3,620 |
| 1980                      | 235    | 135     | 10        | 3,398         | 35    | 3,813 |
| 1985                      | 166    | 114     | 3         | 3,205         | 26    | 3,513 |

Figure 3

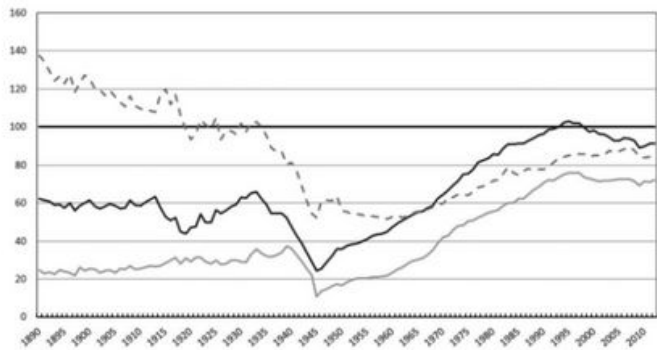


Figure 4 Labour productivity from 1890 to 2010. US Level = 100 (Berguard and Lecat, 2014)

# QE's Formula For Success In the 21st Century

Aditya Kute

## Introduction

Since its inception in 1573, QE has undergone a period of continuous development and continuous betterment, both in the facilities that it provides to its students, as well as the educational experience and support that it endows them with. Over the course of the past 5 centuries, QE has faced several challenges, which began even as early as its establishment – Underne risked complete personal financial ruin in setting up the school, yet his success in doing so serves as a testament to the ethos that has defined QE over time – providing a world class education, and doing so in the face of whatever adversity it is faced with.

The period of time that has passed since the arrival of the new millennium is arguably the culmination of this key tenet of the school's existence. As economies and even entire societies came to a standstill during the events of the 2008 financial crisis and the 2020 coronavirus pandemic respectively, the school continued to flourish. In 2008, 37 QE boys took up places at Oxbridge, with 83% of pupils achieving A\* or A grades at A-level. Yet in the 15 years that has passed since then, the school has continued to celebrate a new best on almost a yearly basis, accumulating a flurry of accolades and a renowned status as one of the country's top institutions.

Despite the pandemic bringing about the first prolonged school closure in decades, in 2022, QE came out firing on all cylinders, achieving the best A-level results of any state school, as well as the best GCSE results of any boys state school, gaining it the title of the Sunday Times state school of the year.

The Progress 8 score is a measure of the impact that secondary education is likely to have on the level of a student's attainment moving from key stage two to four across 8 subjects, with the national average being -0.03. This means that on average, secondary education in the UK can barely keep up with the standard of primary education at their respective levels of attainment. Yet QE's progress 8 score remains consistently around 1.15 – students are likely to achieve an entire grade higher in their KS4 qualifications as compared to KS2, which, taking into account that QE only takes in the ~192 brightest students out of above 3,500 applicants, seems almost absurd. QE is one of the only state schools that is able to provide an experience that is able to foster such transformative improvement in students who are already the best of the best.

At this point, there's only one question left to address, and that is: why? Why is it that despite being a state school, QE is able to reach new heights of success seemingly on a yearly basis?

What is it that QE is doing differently to other schools that enables this to happen?

## Leveraging past success to secure future attainment

When initially researching about entry into secondary education, the first thing that any prospective parents would realise is that it is selective on a purely academic basis. Unlike other secondary schools which operate 'catchment' areas, limiting the location that their applicants can come from to a radius typically around 3 miles of the school, QE operates admissions based solely on its the famed entrance exam. The only criteria that that students need to meet is an aggregate score above the cutoff in the entrance exam, ensuring that QE receives only the best and the brightest – regardless of their location or socioeconomic status.

Obviously, it is only able to continue to do this so long as the number of applicants far exceeds the number of seats, enabling it to cast a wide enough net enabling it to only filter out those with the highest possible chances of success. In order to maintain this incredibly high level of demand, QE needs success. But once it has the students that it needs, the first piece of the puzzle is already in place – the success that these individuals bring to the school does well to keep the stream of applicants coming on a yearly basis.

Having said that, attracting these students isn't as easy as it sounds. After being forced to become a comprehensive school in the late 20th century, the resultant plunge in QE's academic attainment meant that attracting top talent was relatively difficult. As a result, it focussed on improving educational attainment over the next decade which poised it for the level of success that it has experienced in the 21st century.

## Teaching, Culture and Environment

From Ofsted's most recent report on the school (Outstanding), it is clear that whilst students in the school may have become accustomed to the standard of education that they are receiving, viewing it as 'normal,' it is anything but. The author of the 2022 Ofsted report was quick to point out that pupils are 'determined to succeed in all aspects of their lives' – evidenced by the 'elite clubs in mathematics, robotics and cricket.' It is clear that QE has created a culture in which mediocrity is unheard of – even in the simplest of tasks, the work of QE students is viewed as 'exceptional,' even if they do not think so themselves. By normalising such a high standard of work and fostering healthy competition between students, students may come into QE slightly overwhelmed, but by ensuring that the school only takes in students that are able to thrive in



such an environment and providing the appropriate support, the school can ensure that they soon adjust.

is why it stands at the pinnacle of secondary education.

At the same time, the report recognises that ‘teachers are experts in their subjects.’ Once again, the level of secondary school teaching that may be viewed as standard for a QE student that hasn’t experienced any of the alternatives is remarkable for those on the outside looking in. The fact that every teacher knows their subject area inside out is another example of something that has been normalised within QE, but is anomalous within the scope of the state education system as a whole.

### **Opportunity**

After handpicking the most academically able students in the UK for entry, providing them with an environment in which they can thrive and compete – aided by teachers who are experts in their respective fields – the last piece of the puzzle is providing students with the opportunity for extracurricular and supercurricular involvement. Whilst it is true that events like QE’s annual university challenge style showdown between houses – QIQE, as well as its clubs, societies and competitions aren’t exclusive to QE, the diversity of opportunity that it provides is. Whilst you’ll find a maths club at almost any school that you go to, it is far less likely that you’ll find an entire ecosystem of clubs designed to enrich students and provide value for anyone that could need it. The fact that elite maths and maths clinic with their own separate divisions for every year group exist, among the expansive array of student led initiatives, such as clubs dedicated solely to the consideration of interesting maths puzzles, serves as a testament to the fact that there really is something for everyone at QE. Once more, the fact that this diversity exists not only for subjects traditionally viewed as central to education i.e. maths, english and sciences, but for almost every subject that QE offers is what sets it apart from every other school.

The first piece of advice that anyone will give a new student is to ‘get stuck in,’ the meaning of which may not seem immediately apparent, but will be after the annual clubs and societies fair.

A key component of providing this diversity of opportunity is older students, which Ofsted was also quick to grasp, stating that ‘older pupils provide academic and emotional support to younger pupils.’ The subject specific clinics and clubs common to each faculty are almost entirely staffed by 6th form students, with students being allowed to start their own clubs from year 9 onwards.

A key component of QE’s formula for success is attracting the top talent, taking that talent to seemingly unattainable heights, and then using that same talent to nurture the next generation of top talent.

Ultimately, QE’s strategic use of its long standing history, a team of dedicated experts and a commitment to excellence that it fosters in each and every one of its pupils

# The Great Divide

## Exploring the Disparities in Post Secondary Education Outcomes

Nishanth Bhasuru

Secondary school education resembles a major cornerstone in the lives of citizens of the United Kingdom, being a major segment citizens' lives under the current education system of the UK. This begs the question- if all citizens of the United Kingdom are promised and provided the 'same' education, through the various syllabuses posed by educational bodies and governments, for what reason is there such a stark difference in income and subsequent quality of life post secondary school? What are the true discrepancies in quality of life between a student who studied at a Grammar or Private school, as opposed to a student studying at a State school? Would the same student really be disadvantaged if they studied at a Public school over a Private/Grammar school?

|                                                                    | Grammar Schools | Comprehensive/<br>State Schools | Private Schools |
|--------------------------------------------------------------------|-----------------|---------------------------------|-----------------|
| Students achieving<br>(++) Grades 7 and<br>above at GCSE<br>[2021] | 68.4%           | 28.1%                           | 61.2%           |

FIGURE 1

Grades are an important element of secondary school education in the UK- they are ideal indicators or measures of student aptitude at given points of time throughout the academic year, which may help identify weaknesses, strengths and possible groupings of students that may benefit all parties involved [i.e. the government, the student and schools]. These grades therefore also make up a large proportion of the academic image surrounding a student. Using the UK's progressive GCSE grading system (1-9), we can compare the academic rigor in students across various types of schools. This would make up the majority of the pre-16 educational profile, hence is a critical measure of academic performance of all students, making it a suitable measure to use to compare aptitude of students from all types of school. Both private schools and grammar schools in particular have seen a much greater proportion of students achieving one or more grade 7s and above, reaching rates that are double that of State schools. (figure 1) The importance of this statistic is in its' core- it highlights the large, and widening, gap in educational outcomes between private and public education. While this data shows us a correlation between grammar/private schooling and educational outcomes, it does not however highlight a clear causal link.

One of two major arguments proposed, include the fact that grammar and private schools have a higher proportion of and quality of useful resources boosting rate of learning, retention and so academic ability, giving rise to greater performances and results in public examinations. This argument states that private schools have a larger funding pool to re-invest into improving the quality of education

received by students, purchasing the best possible factor inputs such as the best teaching facilities, textbooks and achieve the highest quality in teachers, therefore educating students to the best level possible in the United Kingdom's education system, setting them up for success in the UK's very much skill-based income system, eventually leading to a higher standard of living. We will further explore possible root causes of this inequality later in this article.

Another argument states that, for grammar schools especially, pre-age 12 aptitude examinations such as the 11+ examinations that are school/county specific allow the students with the highest academic rigour to study at grammar schools, meaning these students of higher general ability are all grouped together. These students are therefore also expected to outperform other students, identified as outstanding students pre-age 12 (the most likely therefore to attain excelling GCSE results) hence explaining the discrepancy between GCSE attainment between grammar and comprehensive schools.

While these arguments identify the underlying reasons for the gap in educational quality and therefore post-age 16 quality of life (in other words the inequality in education), they do not do a good job at representing the direction of development of inequality in the UK. Under David Cameron and George Osborne, this inequality in opportunity and quality of education has only widened. While it may be argued that more wealthy parents that worked through older education systems are rightfully able to provide better education opportunities to their children (through their own past efforts), through their own merit, it could also be argued that this inequality of opportunity is simply unjust, and must be rejected, or ushered out of modern society. However, in line with other political changes and variances in social trends (such as cuts in public spending), inequality of opportunity has only widened between 2010 and 2016, perhaps explaining the underlying causation of the figures stated in figure 1.

A secondary impact to consider is the increasing rate of offering and intake rates, in the UK of vocational courses, T-Levels, B-Techs etc. A general rise in intake of these programmes has reduced the dependence of citizens upon the stereotypical route of attending secondary school in preparation for University, and has somewhat added a new branch to the mould that is the UK educational system.

One of the major separating factors between Private schools and comprehensive public schools is the average class size- 15 and 22 students respectively. While at first this may not seem a monumental difference, studies have demonstrated that smaller class sizes not only help teachers direct learning around their students more easily and effectively, but also allows a smoother and more flexible teaching routine that ensures all students are both comfortable within these classes and are best using class time to develop necessary skills.

### **Inequality of Opportunity:**

Up until now, we have considered inequality in its most raw form- however, a key distinction to make is the difference between inequality of opportunity and inequality of outcome. Inequality of opportunity is a key consideration to make in this argument, considering both inter-generational issues via discrepancies in parental wealth, status and possibly relationship, as well as geographical discrepancies in opportunity [though this applies less strictly to the UK, in a national backdrop (more stark when comparing education internationally)].

Various scholarly studies have shown time and time again that private tutoring and private schooling means that students coming from high-income families are much better placed to succeed in the academic climate of the UK, being much more likely to, therefore, achieve a better range of skills to best provide for their future studying endeavours, leading to the development of a stronger skillset and raising the likelihood of working at a higher income in future as a result. These underlying inter-generational discrepancies that emerge as a result of varying levels of parental wealth may be difficult to oust, however inheritance tax places a large but certain limit on the ability of parents to provide for all their children. Regardless, there is a strong correlation between wealth of parents and opportunities provided.

So, how does QE fit into all of this? Well, the truth is, it doesn't strictly! Our school is completely based off merit and is one of the most competitive schools in the UK, with just over 10 applicants per place in the school! The school runs on a complete merit-entry basis- in other words, those who perform the strongest in entrance examinations are offered a seat, and in turn only the top 10% of students that apply are offered a seat! This creates an intense climate in which students are predicted to thrive in, as a result of the competitive nature of every class students are placed in, and the innate human fear or unwillingness to 'fall behind' to peers. Similarly, the fear of 'losing' a ranking or place (in a set for example) motivates students to work and loss averse.

Though the factors stated earlier may play a role, it is fair to say competition is for sure one of the more important factors in determining QE's success over its' lifespan of 450 years, rather than its nature as a Grammar school.

# How QE Was Able to Respond to the Coronavirus Pandemic

Nikhil Mark

Today marks the day QE has been open for four and a half centuries, and one of the most remarkable things about our school, is that it has stayed open continuously, seemingly oblivious to the events that transpire outside of school grounds. After all, QE was able to remain open during 2 World Wars, and even in the Civil Wars during the very infancy of this institution. However, the world of destruction and despair has long faded upon the entrance into the 21st century; it appeared that schools could now enjoy a golden age of prosperity, fuelled by greater funding and also the dormant threat of any catastrophes targeting this growth. It is then quite ironic that QE was forced for the first time to shut its doors to the majority of students on the 20th of March 2020, due to the Coronavirus pandemic.

It didn't seem like a surprise that the schools closed. I still remember sitting in front of the TV gazing expectantly at the routine 'briefings' hoping to miss my end of topic tests due to the virus's dispersal. As each day passed, we inched closer and closer to this closure, so when it finally happened, you'd expect it to be handled well, right? That wasn't what happened. Schools closing was a disaster. Its unprecedented nature affected not just QE, but it presented a host of problems to every school.

The main one was work. The first strategy to deal with lockdown was to send work as tasks for students to complete them. In a survey aimed at Year 11s, the vast majority (56%) claimed to be able to complete this work regularly on time. Despite this, it was clear there was a limited work life balance as indicated by many individual students and even teachers. While it was easier to just dole out worksheets, teachers noticed there was no real way of making sure students were doing the work, and due to outside restrictions, lower extracurricular engagement and 40% of students not feeling engaged with lessons at all, it is no wonder then, that 65% of students did not think that QE handled the transition to online education effectively. It wasn't all doom and gloom though; the first lockdown was a learning opportunity for the school (and a lot of the students, who found it apt to work on their video game skills after completing the work).

The jubilation following the reopening of schools was short lived, and amidst exponential growth of cases, on the 13th of December QE closed its doors once again. This time, however, they were more prepared. The strategy following this was to increase student engagement by using MS teams, and this was far more effective. Extracurricular events like virtual choir could commence (albeit with less success), and teachers found it much better to interact with students.

Students in the survey noted the lessons were more effective, with 70% feeling engaged with the lessons and 83% understanding all the content. Work was still completed on time and teachers like Miss Partington observed that virtual music involvement increased compared to the last lockdown. This doesn't mean there were still problems though, as technology was intermittently functional varying between students and there could be more government provision of technology as teachers like Ms Hood outlined. Despite this, the school's

response to the second lockdown was far superior, with 84% of students in my year agreeing with me. I know it is very unlikely for there to be another event like this, but if there will, at least QE will be prepared.



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# How the British Empire Used Economics to Rule the World:

## A Game Theoretical analysis

Aston Daniel

During the 16th to 18th century, the British Empire set up colonies in the New World, an era of human history which bore the discovery of new lands, foundations of modern technological instruments and the expansion of British influence to establish and maintain global dominance. The British Empire's economic policies towards its colonies were characterised by a combination of protectionism, exploitation, and paternalism, which allowed it to extract resources, control trade, and maintain dominance over the colonies. Like many European powers of the past, the British used mercantilism to dominate the New World and provided the foundation for the emergence of a global economy and industrialisation, through the integration of cultures and regions into a unified global trade system. Through the use of comparative advantage, monopolistic power and game theory, the British held economics as a key doctrine to their strategy to achieve world dominance. This article aims to provide a deeper understanding of the role of Britain's economic system in colonialism and their ascendancy in the Age of Discovery.

### Mercantilism

The theory of mercantilism consisted of a collection of economic policies and ideas aimed at maximising a nation's wealth by promoting exports, restricting imports, and accumulating precious metals, particularly gold and silver. At the core of mercantilism was the belief that the wealth of a nation was measured by the amount of precious metals it possessed. Mercantilists asserted that the only way to increase a country's wealth was to create a favourable balance of trade, in which the value of exports exceeds the value of imports. To achieve this, they advocated that a country should limit its imports and encourage exports by imposing tariffs on foreign goods, subsidising domestic industries, and establishing colonies. One of the key tenets of mercantilism was protectionism. Mercantilists believed that a country's economy was a zero-sum game, where one country's gain is another's loss. To achieve this trade balance, they proposed that countries should protect their domestic industries from foreign competition by imposing tariffs on imports, and banning the export of raw materials. In practice, mercantilism led to the creation of monopolies and oligopolies. Mercantilist policies encouraged domestic manufacturers to produce goods for export, while discouraging the importation of foreign goods. This created an artificial demand for domestic goods, allowing manufacturers to charge higher prices. As a result, many domestic industries were able to establish monopolies or oligopolies, which further increased their profits. Mercantilism played a crucial role in the development of capitalism as it encouraged the growth of domestic industries and commerce, which later became a central tenet of capitalist ideology.

It provided an essential framework for economic policies, which enabled European countries to amass substantial amounts of wealth through trade, and ultimately led to the Industrial Revolution.

The Industrial Revolution, which began in Great Britain in the late 18th century, brought about a shift in economic thought from mercantilism to liberalism. The industrialization of the economy meant that the production of goods was no longer limited to the production of raw materials. Instead, new technologies and innovations enabled manufacturers to produce goods on a large scale, leading to an increase in productivity and a decrease in production costs. This led to a decline in the importance of precious metals, and the focus shifted to the production and consumption of goods. The rise of liberalism led to a shift in economic policies towards free trade, as liberal economists advocated for the removal of barriers to trade and the protection of property rights. The economic theories of Adam Smith, David Ricardo, and John Stuart Mill emphasised the importance of free trade and the role of markets in promoting economic growth and development. The implementation of free trade policies led to the growth of international trade, which played a crucial role in the expansion of the global economy.

### Game Theory

We can also use Game Theory to explain the British Empire's economic policies.

The first scenario we can use explains the payoffs for the Empire and its colonies. Here, the Empire seeks to extract resources and wealth from the colony while the colony seeks to maintain economic independence and autonomy.

Let's say that the Empire has two possible strategies: "Cooperate" and "Exploit." If they cooperate, they might offer the colony some degree of autonomy and economic development in exchange for resources and taxes. If they exploit, they might simply take what they want without regard for the colony's well-being.

Similarly, the colony has two possible strategies: "Submit" and "Resist." If they submit, they might agree to the Empire's demands in exchange for some degree of protection and support. If they resist, they might try to fight back or refuse to comply with the Empire's demands.

|            | Submit | Resist |
|------------|--------|--------|
| Co-operate | (A,B)  | (C,D)  |
| Exploit    | (E,F)  | (G,H)  |

In the above payoff matrix, A represents the payoff to the Empire if they cooperate and the colony submits, B represents the payoff to the colony in that scenario, and so on. The payoffs could represent things like resources extracted, taxes paid, economic development, and so on.

To bring in some numbers, let’s say that A = 5 (meaning the Empire gets 5 units of payoff), B = 3 (meaning the colony gets 3 units), C = -2 (meaning the Empire suffers a loss of 2 units), D = 1 (meaning the colony gains 1 unit), E = 7, F = -5, G = 0, and H = -10. We then get the following matrix:

|            | Submit | Resist  |
|------------|--------|---------|
| Co-operate | (5,3)  | (-2,1)  |
| Exploit    | (7,-5) | (0,-10) |

One common game theory tool is the concept of a dominant strategy which is the strategy that a player should always choose, regardless of what the other player does. In this case, we can see that if the Empire chooses “Exploit,” then the colony’s best response is always to “Resist,” since they do better (-5 payoff instead of -10) if they resist than if they submit. Similarly, if the colony chooses “Resist,” then the Empire’s best response is always to “Exploit,” since they get more payoff (7 instead of 5) if they exploit than if they cooperate.

Therefore, we might predict that the outcome of this game will be (Exploit, Resist), which leads to payoffs of (G, H) = (0, -10) for the Empire and the colony, respectively. This outcome is known as a Nash equilibrium which represents a stable state where neither player has an incentive to unilaterally change their strategy.

The British Empire also interacted with the Spanish Empire in the 18th century as part of the Coalition wars. Here the two empires stood off against each other and the following payoff table represents the utility/payoffs from the possible set of actions for either agent.

|                             | Spanish Empire - Co-operate | Spanish Empire - Defect |
|-----------------------------|-----------------------------|-------------------------|
| British Empire - Co-operate | (5,5)                       | (0,10)                  |
| British Empire - Defect     | (10,0)                      | (2,2)                   |

If both empires cooperate (i.e. focus on their own colonies and avoid conflict with each other), they will each receive a payoff of 5. However, if the British Empire defects (i.e. expands aggressively into Spanish territories), they will receive a higher payoff of 10, but at the cost of the Spanish Empire receiving 0. On the other hand, if the Spanish Empire defects, the British Empire will receive only a payoff of 2, while the Spanish Empire receives 2 as well. If both empires defect, they will end up in a costly and damaging conflict resulting in a payoff of only 2 for each.

Here, the British Empire’s dominant strategy is to defect, as this leads to a higher payoff regardless of what the Spanish Empire chooses to do. However, if the Spanish Empire anticipates this and also defects, both will suffer a lower payoff than if they had both cooperated. This leads to a suboptimal Nash equilibrium where both empires defect and end up worse off than if they had cooperated.

In both scenarios, the use of payoff matrices shows how the British Empire’s economic policies were driven by self-interest and the pursuit of higher payoffs, often at the expense of others. However, it also illustrates how such policies could lead to suboptimal outcomes and even conflict, as the pursuit of individual gain can come at the cost of mutual cooperation and long-term stability.

We can also use the idea of Minimax and maximin strategies. In game theory, the minimax and maximin strategies are used to determine the optimal moves for each player in a game of strategy. The minimax strategy is a decision rule used to minimise the maximum possible loss for a player. In the context of the British Empire’s economic policies, this strategy would involve minimising the potential loss that could result from the colonies rebelling or refusing to comply with economic regulations. For example, if the British Empire implemented high tariffs on imported goods in the colonies, the minimax strategy would be to find the lowest possible tariff rate that would still generate sufficient revenue for the empire, while minimising the risk of colonial rebellion or economic downturns.

On the other hand, the maximin strategy is a decision rule used to maximise the minimum possible gain for a player. In the context of the British Empire’s economic policies, this strategy would involve maximising the minimum possible gain that could result from economic regulations in the colonies. For example, if the British Empire implemented favourable trade policies that provided certain benefits to the colonies, the maximin strategy would be to ensure that these policies were implemented effectively and that all colonies were able to benefit from them.

The British Empire likely used a combination of minimax and maximin strategies in their economic policies in the colonies. By minimising potential losses and maximising potential gains, the empire aimed to maintain control over the colonies and extract as much economic benefit as possible while minimising the risk of rebellion or economic collapse. Of course, in reality, the relationships between empires and colonies were much more complex and dynamic than this simple game suggests, and there were often many factors beyond just economic incentives that influenced the decisions of both parties. Nonetheless, game theory provides a useful framework for thinking about the strategic interactions between different actors in complex economic and political systems.

In conclusion, the rise of the British Empire to global dominance can be explained through the lens of game theory calculations, and the economic theory behind mercantilism. By prioritising the accumulation of wealth and resources through a system of trade and colonial expansion, the British were able to establish a dominant position in the global economy, while also exploiting the resources and labour of their colonies to further enrich themselves. The success of the British Empire in achieving world dominance was the result of a complex interplay of economic and strategic factors, including the exploitation of resources and labour, the establishment of global trade networks, and the use of military and political power to maintain dominance.



# Innovation or Stagnation? Adding New Horizons to UK Monetary Policy to Meet Climate Change Challenges

Aston Daniel

International commitments to green finance are a key aspect of global charters to address climate change and are integral to the 2015 Paris Agreement. However, monetary policy has long focused exclusively as a defensive tool against price fluctuations and to varying extents, a measure providing financial and macroeconomic stability. Rising concerns of a “climateflation” has stimulated upwards pressure on interest in social contracts surrounding the financing of a green transition. Recent remits to the Bank of England observed the advent of an extension of their prevailing obligations of “operationally independent monetary policy”, “responsible fiscal policy” and “supply-side reforms”, towards “sustainable public finances”, and “increasing long-term energy security and delivering Net Zero”. However, can more be done? Or will greening their operations sacrifice extant mandates of achieving maximum employment, price stability and growth? A prospective post-capitalist transition has stimulated the emergence of trends in the urban political economy, moving green finance up the economic and political agenda. This essay aims to establish an understanding of whether the remit of the Bank of England should be skewed towards a more sustainability focused outlook, and whether its transition mechanisms are viable as a social policy tool. In the wake of an era of a proliferation of geopolitical tensions and economic shocks, environmental threats such as the climate crisis pose large material threats to the UK’s financial system. IEA estimates suggest investment into the energy system needs to increase by nearly USD 3.5 trillion for the present global economic outlook to run parallel to the prospects required to reach net zero by 2050. In contrast, austerity, tightening monetary policy, and noteworthy levels of uncertainty, taint these forecasts. A review of modish central bank strategies, reveals a contemporary roadmap composed by the ECB, one of the first central banks to incorporate climate change considerations into its monetary policy strategy. The corporate bond purchase programme, lies at the nexus of the inception of this adoption of green finance by the ECB, and must be at the core of any respective measures from the Bank of England. The manipulation of a state portfolio of corporate bonds may allow the BoE to tilt bond financing away from carbon-intensive sectors of the economy. Casting the composition of the BoE CBPS under the Asset Purchase Facility, to drive down the cost of bond financing for green sectors and firms of the economy, therefore altering its prevailing “market neutrality” stance and promoting reinvestment and making carbon-intensive intermediate and final goods less price competitive due to an uprating in the analogous costs of capital for these firms, a juxtaposition to the monetary stimulus for greener business models. Moreover, incentivising green bonds to finance sustainability projects heralds a concentrated measure to green QE (quantitative easing) and integrate climate considerations into available monetary frameworks.

Another proposal may be for central banks and financial regulatory authorities to consider differentiated capital requirements, allowing increased availability of funding for green loans to projects with sustainable business models with less capital. Alternatively, capital requirements may be increased for brown sectors, as long as the policy does not penalise carbon-intensive firms in their process of a green transition.

However, the advent of further QE will undoubtedly add strains on the public finances. Whether tilted towards sustainable practices or not, quantitative easing adds money to BoE reserves, which are being fully remunerated at their Bank Rate. In the context of the UK’s outstanding stock of QE, a large fraction of government debt has shifted from a fixed-rate to floating rate, meaning there will be immediately higher debt-servicing costs following any extent of QE. Rather, current monetary policy of higher Bank Rates, and the unwinding of QE, implies savings of up to £45 billion, and even larger savings if the following quantitative tightening “rolls off as bonds mature” rather than the high volume sales of assets, according to IFS estimates. This provides the message that monetary policy may not be a suitable mechanism to promote a green transition, especially given the UK’s current economic disposition. While it may be true that some tools such as greening QE may stimulate the emergence of some threats to the macroeconomic equilibrium, it must be noted that proprietary integration and alignment of monetary policy instruments coupled with supervisory financial regulation may offer a solution devoid of much of the risk of abandoning the BoE’s core mandates. A possible example, may be the onset of policy demanding all regulated financial institutions such as chartered banks or trust companies to submit a thorough framework for a Net Zero transition plan. This top-down schema allows the integration of climate implications into the existing blueprint of the financial system. This allows minimal disruption of core mandates of price and financial stability on both a micro and macroeconomic scale.

We understand that climate change poses threats to financial stability largely through two main channels; Material losses resulting from the prevailing manifestation of climate change among supply side difficulties leading to a loss in the value and availability of financial assets, liabilities and other intermediary goods. Secondly, as the economy is forced to follow a paradigm of low-carbon transition, risks of stranded assets, revaluation risks in brown industries and long-term losses to financial stability materialise, often referred to as transition risks.

Therefore, it may be argued that climate change considerations must manifest themselves among the Bank of England's predominant mandates, regardless of their responsibilities defined in previous remits, as the material and transition risks which produce financial losses are indefinitely significant for the financial sector, especially in our highly interconnected global financial system. Therefore, international engagements to a "just transition" is necessary to enhance the resilience of the international financial system and the management of its associated risks, and so is a prerequisite to any adjustments that must be made in the BoE remit. Consequently, co-developments such as the Network for Greening the Financial System (NGFS) allows the "mobilisation of mainstream finance to support the transition toward a sustainable economy", and in the context of this discussion, signifies the momentum of sustainable finance initiatives by central banks in developed countries,

including the UK. This initiative must be intensified to significantly contribute to the development of climate risk management within the UK financial sector.

Recent analysis using a "stock-flow-fund ecological macroeconomic" model, has investigated the implications of climate change on financial stability and a green QE programme. The results insinuated that climate change has adverse effects on bank leverage, as a result of an upsurge in defaults, in both the "financial and non-financial corporate sector", due to the destruction of capital available to firms and reduction to their profitability, which leads to a gradual deterioration of the liquidity of firms. Moreover, the effects on financial assets, may cause unprecedented implications on the financial sector, climate change damages may lead to a gradual decline in the price of corporate bonds due to portfolio reallocations in the financial corporate sector, coupled with the adverse effects of climate-induced instability, which exacerbates the negative effects on credit expansion. Lastly, the study found that the effectiveness of a green QE programme, will positively respond to upsurges in green investment as a result of the changes in bond yields. A network-based climate stress-test methodology found similar results, where both "direct and indirect exposures" to the financial sector would have deep effects on "investors' equity portfolios" which are heavily influenced by climate change policy. Together, the stress-testing methods and macroeconomic modelling, clearly insinuates the demand for a stable policy framework in future Bank of England remits.

In conclusion, shifting to a sustainable economy will transmute the outlook for the global economy. With the correct intervention, a net zero transition supported across all policy fields, can have positive supply-side implications and protect the economy from physical risks as well as stranded assets and other forms of transition risks.

However, there are many prerequisites for the integration of sustainability tilted policies within the future Bank of England remits, in order to not sacrifice core mandates or sustainable public finances. While there has been a dominant paradigm that monetary policy should work exclusively to maximise employment and price stability, macroeconomic models and stress tests imply that climate-induced implications on the financial sector will inevitably require the engagement of all policy fields including monetary policy, and so the presence of prudential climate considerations in the remit is acutely necessary. The common narrative of a lack of tools available to the Bank of England also seems to be fallacious, as monetary frameworks can accommodate changes to promote net zero transitions among regulated financial institutions and international co-developments such as the existing CBPS and NGFS. Therefore, we can conclude that a pre-emptive and stable monetary policy framework is paramount to avoid adverse systemic consequences and minimise the environmental threats to core mandates of macroeconomic stability, and as a result must be encompassed in future bank of England remits.

# The Revolutionary Effectiveness of Nudge Economics

Shrey Patel

Which one would you be more likely to keep watching?

1. A terrible 35-minute TV show that you're 5 minutes into.
2. An equally terrible 2-hour movie that you're 90 minutes into.

Either way, you waste 30 minutes of your life on terrible media. Yet, most people would be more likely to keep watching the movie. This reluctance to abandon work that has already been completed is known as the sunk-cost fallacy, and it is an example of how our brains make irrational decisions all the time. In this article, I will throw away the unrealistic assumption of rationality and consider how humans actually act. I will review current ways nudge policy is being effectively used and end on one simple idea the government has yet to implement that could potentially:

- reduce energy bills for all families in the UK
- reduce the energy consumption of all households
- increase sleep quality of all households
- reduce rates of obesity in the UK
- reduce rates of inequality in the UK
- do all this while costing multiple times less than Help for Households Scheme

## The Retirement Problem

Retirement planning is an ever-growing challenge for many individuals. As the UK population ages and life expectancy increases, saving for retirement becomes an ever-pressing issue for the government to solve. We are prone to irrationality when it comes to our own long-term financial wellbeing; this is often referred to as present-bias or time inconsistency. Put simply, we tend to place higher priority on immediate desires rather than future benefits or gains. This can be seen in everyday life in the form of procrastination for work: it all too often gets done the day before it is due, often compromising our sleep schedule or the quality of the outcome. Other examples include excessive drinking which poisons our liver – not to mention the impending hangover. A prominent concept in Nudge Economics is the idea of a 'default'. In other words: what happens if you don't do anything? In the case of tax – provided you work for an employer – it is automatically paid. Making the default option to contribute a certain percentage into one's pension plan at regular intervals has been shown effective in increasing participation rates in saving for the future. Nudge economics offers a viable solution that relies on subtle adjustments in order achieve desired outcomes without overbearing enforcement measures, thus addressing our tendency towards irrationality while promoting sound financial decisions.

## The Organ Problem

Organ donation is a noble act of selflessness that

contributes to saving the lives of thousands of people. Unfortunately, last year 408 patients died in the UK due to a lack of organ donations. Now we are going to do a thought experiment, involving the rationality assumption. The conclusion may seem preposterous, although that is simply highlighting the absurdity of the assumption. Then we will discover the highly effective 'Nudge' solution. The thought experiment: To encourage more organ donations, a rational being must have some incentive. One incentive is the feeling of knowing they are making a positive impact in the world even after their passing. However, if this incentive alone was strong enough, there would not be a shortage of organs. Therefore, another incentive, such as a monetary one, must be introduced to encourage more organ donations. If the government start at the lowest amount, say £0.01, what would happen? Well there is no use of their organs once they are dead, so perfectly rational beings would jump at this opportunity for free money. Organs should be piling up in the NHS and the UK would be exporting organs – if only other countries didn't also have mountains of organs from the same policy.

Clearly this solution is bogus. If the government announced they would be paying a penny for your organs, they would get laughed at. Even paying hundreds for organs may not solve the issue, as those who were donating out of goodwill and generosity may feel uncomfortable.

So are organs doomed to be in a shortage? No.

Nudge economics has proposed an opt-out policy as one way to increase organ donations and bridge this gap.

An opt-out policy is most beneficial concerning those individuals who agreed that donating organs was a good thing, but who weren't ready to sign up for doing so. Now they would need to sign a form to specifically not donate. As the default has become to donate, many people will simply choose the default. Very few people will go out of their way to sign a form that means their organs will not be donated.

Implementing this policy also leads to faster transplants since there would likely be less time spent verifying consent for donation due its automatic requirement for those who have not opted out previously. With this increased clarity, doctors treating patients can spend precious time where it matters most – at the hospital bedside – instead having them deal with red tape bureaucracies involved with getting consent from family members. Nudge Economics, again, prevails.

## Price Nudges

So far, we have looked at how Nudge policies can be implemented by the government, for the benefit of individuals. But how do firms use Nudge policies to encourage you to spend more money?

One option is a default, where the firm encourages you that one option is the 'most popular', or 'best value' to encourage you to purchase that option. However, this is quite boring.

There are far more ingenious and subtle ways that firms can increase profit. One of these is using the framing effect.

By presenting information in a certain way, companies can make their products more attractive. Consider the case of '20% fat yogurt', compared to '80% fat-free yogurt'. Most people would go for the latter, even though the yogurts are identical.

However, the most borderline manipulative strategy companies deploy to increase their profit is called 'The Decoy Effect'.

Imagine you walk into a coffee shop and there are 2 options: a small hot chocolate for £4 and a large one for £6. You are torn between the choices; £6 is a lot for a drink, but the small one may not be enough. Now imagine there was also a medium option for £5.50. The medium one sounds perfect, but as you go to buy it, you notice the large one is only 50p more. In this case, the medium option was not placed there to be purchased. Instead, this third option was used to persuade you to purchase the target product. Additionally, this was more effective as the pricing was asymmetric: the difference between small and medium is £1.50 but the difference is only £0.50 for the decoy and the target product. This makes you feel like you're getting value for money, while the company capitalises on an easy way to raise margins.

## The Ultimate Nudge Policy

So we've seen how Nudge Economics can be used for both good and bad for citizens. Now I will propose a single new policy that will apply the Nudge concepts in this article to the current cost of living crisis, the deteriorating climate, while decreasing the UK's budget deficit and increasing health and productivity.

This sort of policy sounds too good to be true. There must be some ridiculous catch such as everyone ditching their cars for public transport or working in the dark.

Nope. As with many other Nudge policies, the idea is to introduce a new default, while not restricting your ability to choose what you'd like.

This policy will be applied to heating in houses, specifically smart thermostats. Heating takes up a third of the average

person's carbon footprint, making this an easy target for policy. "6% of households in the UK already have smart thermostats, which adds up to 1.67 million homes. If every one of the remaining 26.13 million homes acquired a smart thermostat, we could save up to 18.3 million tonnes of CO<sub>2</sub> per year." ([theecoexperts.co.uk](https://theecoexperts.co.uk)).

As Nudge Policy prides itself on being a cheaper solution to alternatives, I will propose 2 policies. The first will cost next to nothing and the impact will increase over the next decade. The second will cost a few billion pounds, although the impact would be tenfold the first. My suggestion is to try a small sample first, then push out Policy 1, and if positive changes can be measured, implement Policy 2, starting with areas that are most deprived, to simultaneously reduce inequality.

**Policy 1:** Introducing a new policy requiring thermostat producers in the UK to make "default temperature" mode available on all their products. This default temperature mode would set temperatures that vary throughout the day, such as at 19–20 degrees Celsius and 18 degrees at night. These are intentionally around a degree cooler than the current UK room temperature, as multiple studies have shown that increased sleep quality leads not only to decreased fatigue but also to increased productivity. The benefits of sleeping in a colder room even extend to less stress, lower chances for diabetes and slower ageing due to optimal melatonin levels.

Additionally, setting temperatures slightly lower in the day can lead to decreased energy consumption when compared with higher settings; this further helps reduce the impact of high energy costs on households struggling with rising prices from utilities and can help reach the net zero goal more quickly. Reducing the thermostat by just 1 degree saves as much as 10% on your annual heating costs, which is hundreds of pounds a year, per household. Additionally, a lower room temperature is associated with greater levels of brown fat, which can help reduce rates of obesity.

This policy implementation may seem small but its effects are substantial; it saves consumers money and pushes them towards better sleeping habits and productivity increases. This new nudge economics tool could prove especially effective for those who find it inconvenient to adjust thermostats manually – while sending an empowering message that every single person can take part in helping society achieve its goals if only given slight nudges like this one.

To avoid people turning this feature off straight away, the thermostat should slowly adjust the room temperature from the average room temperature towards the desired temperature over a few weeks and it should reflect a realistic room temperature based off the weather in the area.

Of course, you may need to adjust the temperature once in a while. In these cases, the user can easily override the default and the default will be disabled for the rest of the day, unless it is manually enabled again. To encourage maximum savings, the default will be applied automatically the next day and this behaviour can be easily turned off if it is too inconvenient or cold. Provided the feature is integrated well with local weather and people are eased in to the cooler rooms, we can expect uptown 50% of new and existing thermostat owners to use this default.

Policy 2: The first policy, but for every household in the UK. The government should allow every household in the UK to claim a free thermostat with the default temperature more natively baked in. This would greatly accelerate progress in the Net Zero UK target and bring all those individual benefits of increased sleep quality and productivity to the entire economy. This should be introduced in deprived areas, as these households spend a significant proportion of their income on heating. By reducing heating bills, these families will have more to save, allowing them to escape poverty.

This should cost just north of £3 Billion, considering budget thermostats, in bulk, could cost £60 apiece and the average installation cost was £50. While this may initially sound expensive, the magnitude of the benefits from this policy cannot be understated. Compared to similar policies, such as the Help For Households, which costs the government multiple times as much, and only helps with the short-term cost of living crisis, compared to this policy where the benefits are all long-term and range from reducing inequality, to reaching environmental targets, to boosting labor productivity. In fact, this policy may actually pay for itself dozens of times over in the form of less strain on the NHS from diabetes, obesity and other metabolic diseases. The increased sleep quality, which increases productivity of the workforce could boost economic growth, and the reduction in inequality could save the government billions in welfare payments.

As demonstrated above, Nudge Economics offers substantial benefits from an economic efficiency standpoint compared to their non-nudge counterparts. This rapidly growing branch presents novel opportunities to design public policies which can achieve desired objectives efficiently whilst maintaining individual freedom choice and I am excited to see what new nudge policies are implemented in the future.

# Predicting the Outcome of the Russo Ukraine War Through the Lens of Game Theory

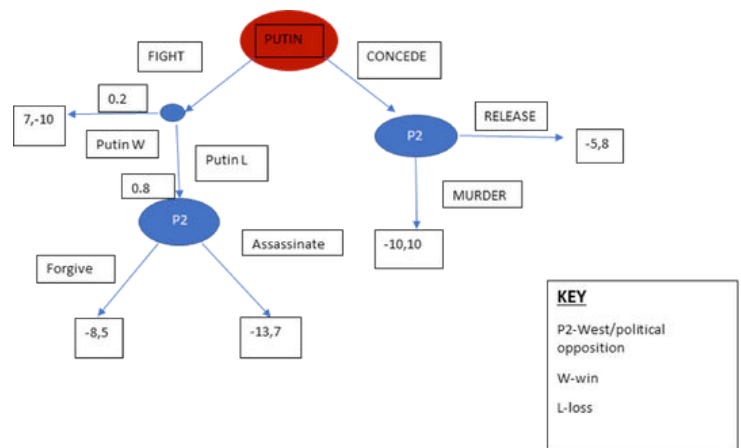
Ahyaan Malik

Following the invasion of Ukraine by the Russian forces on the 24th of February 2022, there has been immense support shown through means of financial aid for the Ukrainian forces and people. While NATO refrains from physically entering the war, its members, namely The United States and nations of the European Union, are supporting Ukraine by crippling the Russian economy by imposing economic sanctions targeting their exports and freezing their assets. Eleven months later the gravity of the war has not subsided and therefore the primary function of the sanction, to impede Russian progressions have arguably failed. Instead, Russia's aggression has continued to increase, with the two sides now locked in game theories zero-sum scenarios. Game theory can be utilized to analyze the behaviours of the players, (the West, Ukraine, and Russia) to then assess possible strategies which may be implemented. We will look at potential strategies that may be played by Russia, dependent on whether they take a militant or insecure approach and how the west would reply if they were approachable or equally aggressive. In understanding the potential outcomes of the war, we would have to understand what each side's objectives are and what they look to gain from combat. We will then discuss the possible outcome of Russia using nuclear weapons, and what Russia's payoffs would look like doing so. The general conclusion of the article will be that the west will continue to sanction Russia, while Russia retaliates by counter-sanctioning the west and increasing its aggression in its war efforts, where eventually both sides compromise to reach a peace deal.

## Objectives of the players

In calculating the payoffs for each strategy which the players can implement, we must first gain an understanding of the objectives of each player. Russia's primary objective would be to stop Ukraine from joining NATO or the EU (European Union), as Putin wants to rebuild a Russian sphere of influence in eastern Europe embracing former soviet republics, showing the country is still a global superpower. If Ukraine were to join NATO, it would make such a move impossible, not to mention NATO moving into Ukraine would pose a significant threat to Russia's national security. In the case that Ukraine was to join these western alliance packs, it would lead to Putin's popularity within Russia falling. This war is far more than Putin's quest to expand the Russian sphere of influence, instead, Putin sees the invasion of Ukraine as necessary for him to gain political support within his country. If we look back, the annexation of Crimea brought a huge increase in Putin's popularity and eliminated any threats from the political opposition for five years. Shortly before the annexation of Crimea, Alexei Navalny almost became Mayor of Moscow and was denied

the position due to electoral fraud. Putin's popularity was plummeting. And the solution, in the form of annexing Crimea, had successfully boosted his popularity for five to six years. Putin sees the invasion of Ukraine as an opportunity to secure his next term in office, this strategy comes with the threat of Putin being overthrown or even executed if Russia were to lose the war, thus, he would be willing to play risky strategies (gambling for resurrection) to ensure a victory in Ukraine. We can present this problem with the use of a game tree.



The game tree demonstrates the conflict Putin is facing. Putin can concede and save his country from a lot of bloodshed, or he could gamble and continue fighting the war. At that point, P2 would have to decide whether to forgive or assassinate Putin. Using backward induction, we know that if Putin was to fight the war but lost, he would be assassinated as the payoff for this action is strictly greater than if they were to forgive him. We also know from the game tree that the probability Putin wins the war is 0.2 and the probability he loses is 0.8. Using these expected probabilities, we can calculate the expected utilities of each player.

### Expected utility for Putin

$$Eu(\text{fight}) = (0.2)(7) + (0.8)(-13)$$
$$Eu(\text{fight}) = -9$$

### Expected utility for P2

$$Eu(\text{fight}^*) = (0.2)(-10) + (0.8)(7)$$
$$Eu(\text{fight}^*) = 3.6$$

So, we can condense the tree diagram for the fight strategy to a payoff of  $(-9, 3.6)$ .

If we now look at what happens if Putin concedes we see that P2 will murder him as 10 is greater than 8 and hence here Putin receives a negative payoff of  $-10$ . As  $-9$  is greater than  $-10$  it is in Putin's interest that he continues to fight as he fears the consequence of death.



The West sees itself as having a moral duty to support countries which want to shift to western ideologies and hence why we have seen its support for Ukraine in the form of military and financial aid. If the West were to capitulate entirely and allow Putin to take a stronger position with Ukraine's land, industrial production, and natural resources, it may provide Putin with the emboldenment to expand further, leading to the eventual need for the direct involvement of NATO and hence why the west sees it necessary to intervene.

As this is a war of attrition, where two adversaries are contesting for an asset and therefore both parties incur a struggle until one decides the cost of struggling is strictly less than the payoff when winning and therefore surrender. However, if one side in such a stalemate can persuade the other that it will never back down then it has the incentive to surrender to not waste valuable resources-human capital infrastructure etc. Therefore, in such a war of attrition, the real game is often one of psychology and competing resolve, to project one's strength and determination. Russia having such objectives makes it unlikely they will back down, it would not be wrong to think that Putin would be willing to go to any extent to win this war, as the possibility of him facing execution if Russia were to lose the war is something he would be unwilling to accept.

### Model

The two major players in this game will be Russia and the West, and the strategies they play will define the future of the world economy. We will act on the assumption that players are rational, with the main aim of maximizing their payoffs. Russia will take a militant approach within the game, due to the objectives they have set out, while the West may either decide to be approachable or act aggressively against Russian attacks. The outcomes of the games will therefore be dependent on the approach the West chooses to adopt. The payoffs will be ranked on a scale of 1 to 9, where 9 is the maximum utility which a player can gain from playing a certain strategy and one is the smallest. The modelled games would take the form of a 3 by 3 matrix.

#### The strategy set for Russia is as follows:

**LG-Let go** Surrenders in Ukraine, allowing it to join NATO with no interference.

**DS-Destabilize:** Impose sanctions on the West and Ukraine aiming to disrupt their economies and refrain Ukraine from joining NATO.

**IN-Invalidate:** Invade and take full control of Ukraine. To then enforce its political regime within Ukraine.

#### The strategy set for the West is as follows:

**BU-Business as usual:** Allow Russia to take Ukraine, to preserve relations with Russia.

**SN-Sanction:** Impose sanctions on Russia aiming to hinder its progress in war but continue to refrain from directly entering the conflict.

**MA-Military aid:** The West declares war against Russia in Ukraine and gives Ukraine full military support in the war.

#### Scenario A: Militant Russia vs the approachable west

| WEST/RUSSIA | LG  | DS  | IN  |
|-------------|-----|-----|-----|
| BU          | 9,3 | 7,7 | 4,9 |
| SN          | 5,2 | 8,5 | 6,8 |
| MA          | 1,1 | 2,4 | 3,6 |

The approachable Wests payoffs rank such that if Russia were to play LG (Let Go), they would receive the maximal payoff of 9, as world peace is restored, and Ukraine join NATO therefore their primary objectives have been met with little use of resources. For the approachable West MA (Military Aid) is strictly dominated by SN and BU therefore we can rule that out as a potential strategy which the west can play. The West receives the least utility in playing MA as they believe it would begin World War III, which is an undesired outcome. For the militant Russia, the Strategy IN strictly dominates DS and LG, so we can then reduce the matrix to a 2 by 1 game to find the pure strategy Nash Equilibria.

| WEST/RUSSIA | IN  |
|-------------|-----|
| BU          | 4,9 |
| SN          | 6,8 |

As militant Russia will always play invade, as it is a strictly dominant strategy, the West's best response would be to Sanction Russia for its Invasion, this leads us to the pure strategy Nash equilibria of SN-IN, where neither player has the incentive to change their strategy given what the other player is doing. This outcome is also Pareto efficient in that moving to another outcome will not make a player better off without making the other player worse off. Thus, the conclusion of this game would be Russia's continued attempt to invade Ukraine, while the West continues in its current position and sanctions Russia. Note how this outcome links to the west's main objective, to show that it supports a country's movement towards western ideologies, but also ensures they are not involved in any direct combat and therefore it makes sense for them to play this strategy. As Russia aimed to gain land both to expand its sphere of influence and gain political support within Russia, we could see this Nash equilibrium forming by looking at the objectives.

#### Militant Russia vs The Aggressive West

If we suppose the West sees a victory in Ukraine as necessary, as they do not want to leave Putin in a stronger position with Ukrainian land and industrial resources, they may decide to take a more aggressive approach to the Russian offence. Here their strategy preferences will be different as shown in the matrix below.

| West/Russia | LG  | DS  | IN  |
|-------------|-----|-----|-----|
| BU          | 9,3 | 2,7 | 1,9 |
| SN          | 8,2 | 4,5 | 3,8 |
| MA          | 7,1 | 6,4 | 5,6 |

For Russia, IN still strictly dominates both DS and LG, this is because there has not been a change in Russia's approach to the war their objectives remain the same. We can therefore remove both LG and DS from the matrix.

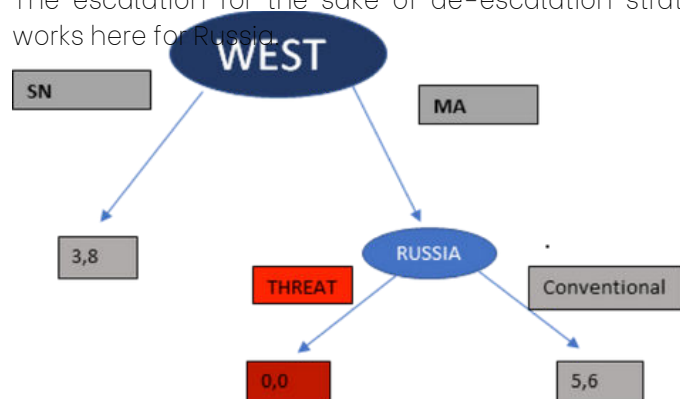
| West/Russia | INVADE |
|-------------|--------|
| BU          | 1,9    |
| SN          | 3,8    |
| MA          | 5,6    |

As 5 is greater than both 3 and 1 the west will provide military aid to Ukrainian forces resulting in direct combat between NATO and Russian forces. This situation we have arrived at is the pure strategy Nash equilibrium as there are no incentives for either party to profitably change its strategy.

### Escalation for de-escalation

The outcomes we have reached are concerning, if such strategies were to be played it could lead to severe escalations to a point where weapons of mass destruction become a playing card for both players. Russia's former president Dmitry Medvedev has said that Russia could resort to nuclear weapons if they face defeat in Ukraine, we will discuss whether this is a credible threat, however.

The escalation for the sake of de-escalation strategy works here for Russia.



Russia's easiest route to victory is if the west refrains from playing MA and continue playing SN. As if the West play SN Russia's payoff is 8 which is strictly greater than 6, the payoff they gain if the west play MA. However, using backward induction we can see the west will play MA as if Russia act rationally, they should always play conventional over threat, as they gain 6 compared to 0 if they play threat. This will also benefit the west as now they would gain 5 as opposed to 3 if they continued sanctioning. This is a problem for Russia as their payoff has fallen due to a change in strategy from the west, how they can counter this by proving to the west that they will be irrational and play the threat strategy where both parties will lose out equally due to (MAD)? This will lead to the West sticking to its sanctioning strategy as it fears a nuclear war.

The question arises as to whether this threat made by Russia is credible. There is evidence to suggest that it is not, and Russia is simply using it as a tactic to stop the west from changing strategies. If Russia were to use nuclear weapons, then it would completely disrupt any possibility of a post-war restoration of economic ties. But more importantly, it would affect Russia's relations with its biggest allies India and China. Currently, the main purpose of nuclear weapons is that they serve as a nuclear deterrent against a country's enemies. However, if Russia were to use nuclear weapons within Ukraine it could completely change how nuclear weapons are viewed, from a weapon of deterrence to now a conventional weapon. This will cause political tensions within South Asia between India and Pakistan as well as India and China, thus it is highly likely that behind closed doors both China and India two of Russia's biggest trading partners are warning Russia not to use nuclear weapons, or else they would join the trade embargo with the west, leading to the complete isolation of Russia on the international scene.

Hence it is clear that the use of nuclear weapons is likely to be an extremely unlikely move by Russia, having said that as the west does not believe Russia is a rational player, they are unlikely to supply direct MA as they fear the possibility of nuclear retaliation.

### The Likely Outcome

The most probable outcome of the game is SN- IN. It is unlikely that the west will take an aggressive approach when confronting Russia, as Moscow has made a credible threat when it threatened to use nuclear weapons. From here, the only way in which the war will be resolved is when both sides realize their objectives cannot be met in full and there is a need for a compromise. The compromise would be such that both the West and Russia could leave the war partially claiming a victory for its people. If Ukraine were to give a guarantee that they would not join NATO, through an international treaty and in return Russia gives back the land it has annexed apart for Crimea and a few pro-Russian Ukrainian states. This would mean that Russia can project itself as victorious, so Putin would be willing to let go of the remaining Ukrainian states, it has taken and therefore has achieved his primary objectives. The west can also present itself in such a manner, as it was able to reclaim parts of Russian-occupied Ukraine.

As the war surpasses the one-year mark it is vital that a peace deal is signed, to reduce the levels of bloodshed as well as economic damage which such a war can have on the world economy, we have seen surges in oil prices across Europe as well as a huge reduction in FDI within Russia, it is clear this war has negatively impacted both sides, and a solution will only be formed when both Russia and the West agree to compromise. If they don't come to such a conclusion, as this game is infinite in nature it will continue to have devastating effects on the world economy and the Ukrainian people.

# History of Chemical Process Economics and its impact on the UK economy

Sajin Sureshkumar

Chemical Engineering is a branch of scientific engineering that involves concepts from chemistry, physics, mathematics and economics to plan, design and execute chemical processes efficiently on an industrial production scale. Process economics is an important element of the Chemical Engineering field and is concerned with the optimisation of profit (determined by the process engineering design and operation). The optimisation, therefore, requires an ability to determine the influence of processing techniques and sequencing, and equipment design and operating parameters on the economic performance. From its birth at the end of the 19th Century, the chemical engineering industry has made significant improvements both to knowledge within the field, but also the advancement of other industries such as pharmaceuticals, materials and modern progress in green energy and fuel. Ever since, the chemical industry has made significant contributions to UK economic growth due to non-stop innovation, deeming this sector as profitable for investors and the UK economy. Being one of the UK's biggest industries by GDP, the chemical industry provided over 500,000 jobs in 2022 alone and generated £73.7 billion in revenue at the end of the final quarter of 2020, with a GVA of £28 billion.

In this project, I will be talking about how the chemical engineering industry has improved throughout history in relation to the development of process economics. I was led to delving further into this area due to my interests in the links between economics and chemistry.

Source 1 outlines the impact of the chemical industry on global economic performance from 2017–19 by providing some accurate figures. However, data is limited to a short span of 8 economic quarters (2 years) meaning it isn't representative of previous development that may have happened outside this range. Moreover, this source describes the situation from a global standpoint. Since the source quotes a report from the ICCA, I chose that as my second source. This is an improvement as this tackles the issue of viewpoints as there is in depth regional analysis included. However, the data only back dates as far as 2017. Therefore, I used Statista for historic UK specific information, quoted straight from ONS. On top of this, I used a CIA report for recent figures as well as speculation data of 2022. To educate myself about Process Economics and its applications in the chemical industry, I looked at a report on Process Economics (most diagrams are from this document) written by a chartered and renowned Chemical Engineer.

Chemical Processes can be looked at in 6 categories: Feedstock; Catalysts; Energy; Products; Waste By-Products, and the interactions of these which influences economic evaluation.

Each of these material or energy flows has an economic value either as a cost or a source of income. For instance, energy consumed in a process will have a cost which reflects its generation and transmission but it may also be possible that a process generates a source of energy that can be utilised and sold to a third party thereby generating income. At the heart of most chemical processes is a chemical reaction. The stoichiometry of the chosen transformation process will set the material and heat flows for the process and ultimately the economics for that process.

This can be expressed in a general sense as:

Feed A + Feed B + Contaminants  $\Leftrightarrow$  Product C + Waste Product D

Feedstock

The cost associated with feedstock is determined by both its quantity (in terms of atomic percentage yield) and quality (purity). The presence of impurities can also reduce catalyst activity and increase yield of unwanted products which adds to costs (to separate these out). Over the course of the chemical industry's existence, separation techniques have become more effective in improving the quality of the feedstock used. These techniques include, crystallisation (which can happen rapidly in batches to save time and money) or UV cleansing of contaminated equipment. All these developments have created many job opportunities proportional to the increasing need of good quality reactants.

Catalyst

Catalysts provide an alternative energy pathway for a reaction to occur with a lower activation energy (EA), essentially making reactions happen faster and at lower temperatures and pressures – which is sustainable since it requires less energy to maintain these conditions. Efficient use of the catalyst can reduce operating costs by manipulating conditions correctly. Catalysts themselves can be costly (eg. Platinum in catalytic converters), therefore their use must also be optimised by volume used.

A major cost for most chemical processes is energy. Energy is a necessity to maintain conditions such as pressure and temperature e.g. steam for heating, electricity for pump and compressor motors, water for cooling. However, 100% efficient energy use is still a theoretical concept, but the UK has largely boosted its energy efficiency over the past centuries. An example of this is derived from the modern understanding of the damage our fuel-usage is doing to the environment. Over the course of the past decade, the UK Chemical Industry

has internalised its most negative externalities created using non-renewable energy sources as well as lowering incinerations/ combustions (in furnaces). The chemical industry was also responsible for new innovation in this environmental issue, such as inventing concepts for electric/ hydrogen-powered engines as well as a huge development in renewable energy manipulation.

### Products (Useful and Waste)

Products of a reaction tend to be the revenue-generating portion, therefore it is important to ensure that reactions lead to the largest yield possible. Purity of products is also directly proportional to revenue generated from that product. In order for this to happen, all other conditions and catalysts need to be operating as efficiently as possible (ie. working on the PPF curve)

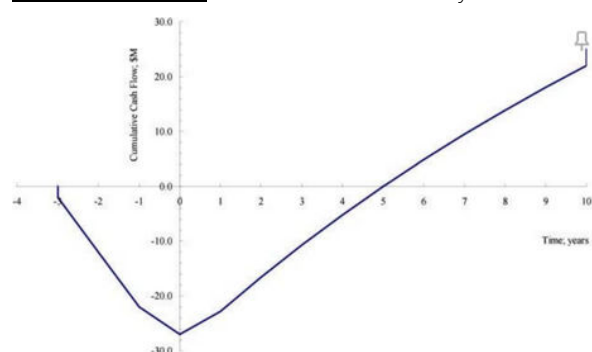
Waste products are those materials that have no utility and therefore no value. Most waste products attract a disposal cost and should therefore be minimised. Minimising waste will also ensure maximising yield of useful products. Since products can be formed from various reactions, the most cost-efficient ones are chosen. Over time, many new methods and reactions have been found to be both easier and efficient (such as separating cooking salts from rock salt and ocean water rather than obtaining these from neutralisation/ displacement reactions).

### Interactions

All of these elements have to be operating at the highest efficiency possible in order to produce high yield and quality of useful products in order to maximise marginal profit. This has been a necessary development in the chemical industry in order to waste less time and money in the future. Processes that are mechanised today, would have taken much longer to occur with lower yields too (eg. metal extraction). External factors such as government policies – Pollution Permits and Carbon Emission goals – have also increased the need to innovate and improve process efficiency.

### Economic Impacts

Microeconomic – Within the industry



No period of time will change the fact that firms are profit incentivised, and chemical production firms are no exception. A firm will aim to complete as many projects as possible whilst making as much profits and better reputation along the way. In a chemical context, capital costs of production can arise from many places such as equipment and maintenance, utility (electricity, water, waste treatment, air intake and outtake etc) and finally land.

For new firms, start up costs can also be a huge issue as shown by the graph on the left. If 0 is the year the firm opens up to production (ie. negative years are years of construction/preparation), then firms have already made a loss from start-up. This graph suggests that firms will only make a net profit/ positive cash flow after approximately 5 years. Therefore, chemical portion firms need to minimise start-up costs as well as maximise their productivity and supply to try and reduce this average 5 year gap by optimising profits. Off course this cannot always be the case (ie. dependent on the demand/ scarcity of product being manufactured), which is where economic valuation comes in.

### Macroeconomic – UK economy

It is no surprise that the expansion of the chemical industry has led to a proportionate decrease in unemployment, specifically under-employment. Employing roughly 0.6% of the workforce, the UK chemical industry exports £59.2 billion with 20% of these exports solely received by the USA. The net income of the UK's leading company is £113.3 million. On top of this, the development of this industry has helped reduce the significance of the North-South divide. Due to geographical advantages, the north of the UK is more appealing for chemical production firms to open and invest. This immense density of such employment opportunities increases real output as well as working towards levelling the economic differences between the two halves of the UK. Increased pressures to go green also force the UK chemical industry to comply with international environment policies/ targets which could potentially increase FDI into the UK.

### Conclusion

Overall, the positive correlation between the development of the chemical industry and UK economic performance over time has been obvious in both economic growth and employment. However, it isn't easy to speculate whether the same trend would be continued forward in time. Although innovation is very much possible and LRAS can keep shifting rightwards, we are nearing YFe and hence reducing the size of existing negative output gaps. Although general UK productivity is low, productivity in the chemical sector is much higher due to a lack of competitiveness if otherwise. At the same time, as raw materials become scarcer it is becoming difficult to source reactants and conditions sustainably whilst maintaining profit margins. On the other hand, the increased amount of machine learning and AI incorporation to everyday tasks could impact the way the chemical industry operates in the future, most likely benefitting the UK.

# Globalisation: Silent Revolution or Silent Killer?

Avinash Srivastava

## A brief introduction to Globalisation

Economic globalisation is defined as a historical process, instigated by human innovation and technological advancement. In fact, such is the complexity of globalisation that there are various definitions it can go by. A more synoptic embodiment of this phenomenon is “the increasing interdependence of world economies as a result of the growing scale of cross-border trade of commodities and services, flow of international capital and dispersion of technologies.” It is often referred to as an irrevocable shift, which entails the on-going expansion and fusion of market frontiers.



The previously conceived theory of globalisation has rapidly become a reality due to a plethora of reasons. For example, these advancements can be owed to the development of science and technology, which has substantially minimised the cost of transport and conveyance. In the duration following the Second World War, the world has witnessed a multitude of cost-cutting developments, namely within transportation. A prime exhibit of this is the fact that between 1930 and 1990, the average ocean freight and port charges per tonne of US import and export cargo was reduced by nearly 400% from \$95 to \$29. The other central element – communications – has also experienced palpable improvements. Between 1930 and 1990, the cost of a 3-minute call from New York to London fell from an astounding \$250 to \$3.27. Furthermore, ingenious inventions such as faxes also transformed the industry of communications. This progression paved the way for international trade and investment, resulting in an unprecedented ease of global collaboration in business.

Globalisation is such an intricate conception that it must occur in various sectors and aspects in order to have a noticeable effect. For example (as previously mentioned) the fields of communication and transport experienced globalisation, but there are countless other sectors, such as the financial sector and the labour market. The advancements in all of these sectors and markets have culminated in a compiled effect of globalisation – which will be covered later in this article. A frequent misconception regarding globalisation is that it doesn't have many downsides; this is not true.

This article will comprise and cover three aspects of globalisation: the agreements that were made in the 1980s and 1990s to facilitate the process, the effects of globalisation on the world economy and also an evaluation of how effective the process has been. As this edition of the Econobethan is in celebration of QE's 450th anniversary, I will also delve into how globalisation has influenced the school (especially the drastic changes in pupil demographic experienced by QE over the past half-century) and how it continues to shape the economy today.

## Polarising Policies (I): The Origins of Globalisation

A substantially contested topic amongst economists is when and how globalisation actually began. There are a vast number of theories that provide their own answer to this question. Some proclaim that the process of globalisation commenced with the silk roads, whereby goods were transported for miles and reached Rome. However, it would be a mistake to say that this was a considerable advancement; the value of these exports was minimal (at best) and involved the aid of many mediators to get the goods to their intended buyers. The Silk Road did eventually close, hence providing finality to this theory.

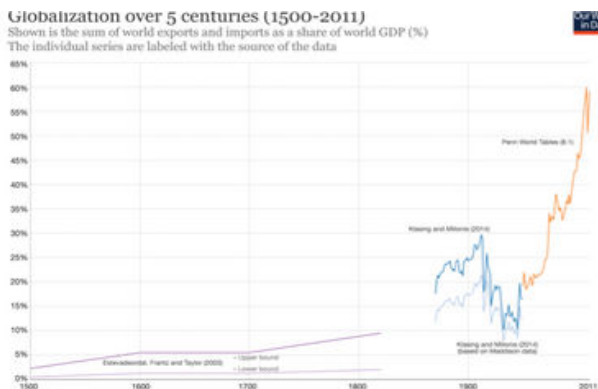
The next instalment on the road to globalisation occurred in the Islamic World from the 7th Century onwards. Spices were exported from the East to the West, and these trades opened up the crucial Belt and Road of exchange. It was around the time that QE was founded (1573) that trade was seriously advancing. In this period, European explorers “discovered” the Americas, hence resulting in centuries of subjugation and enslavement. Although, this was in no capacity beneficial, global supply chains were initiated – engendering a mercantilist and colonialist economy. During this period, the global economy was very much asymmetrical and therefore is not classed as globalisation.

In the early twentieth century, the growth of globalisation was statistically apparent, with trade growing by 3% per year and resulted in exports accounting a share of 14% of global GDP by 1914. Yet – still, at this point – the unprecedented growth in trade was only aided a select group of countries; Ethiopia was the only independent African nation at this point, while future forces to be reckoned with such as India were still being plundered by the British Empire.

Fast-forwarding half a century, the fall of the Iron Curtain made it clear that globalisation was the way of the future.



It marked the convergence of two aspects inducing the advancement of globalisation: the orchestration of America on a global level as well as the second industrial revolution. The 20th century witnessed an upturn in international trade, with the inception of establishments such as the EU. The results were palpable; in 1989, exports contributed to 14% of the global GDP. The graph shows a gargantuan uptick in the sum of trade as a share of world GDP, further re-enforcing the increased flows and interdependence between countries in the past few centuries. It was then in 1995 that the World Trade Organisation (WTO) was formed – this showed the imminent effects of globalisation, as the formation of the WTO had been a goal for 50 years prior.



## Polarising Policies (II): An insight into the 80s- 90s' policies

One major aspect of globalisation is that it is synonymous with the freedom of services. In the latter half of the 80s, Europe's insurance markets experienced rapid liberalisation, with insurers being granted the ability to supply their services internationally. Although these policies had been introduced earlier, they had not necessarily been implemented; freedom of establishment was only available for non-life insurers during the 70s. The integration of cross-border services increased competition and hence lowered prices for EU demand; this in turn resulted in businesses being able to flourish better on a global scale.

## The Washington Consensus

Amidst the growing fever that globalisation had brought to world economics, different economic parties were looking to also get a share of the so-called 'benefits' that they believed globalisation would bring. One such policy that came to the forefront in the 1980s was the Washington Consensus. The Consensus was an agreement between the IMF, World Bank and the US Department of the Treasury. The Consensus contained two components: trade liberalisation and capital market liberalisation, placing enhanced emphasis on devolving powers, deregulation, as well as swift liberalisation and privatisation of sectors. It was mainly a sentiment catered to South America but was adopted by a host of other countries as well. The Washington Consensus was created on the basis that trade and capital liberalisation would help alleviate hyperinflation in South American countries.

The process described by the Washington Consensus was scaffolded into three crucial stages; the first of which consisting of policies dedicated to produce general economic stability. The fundamental aim of the initial stage was to assure price stability as well as reducing the budget deficits in the intended countries. This was said to be achieved via reductions in government spending as well as by increasing interest rates, which would reduce the money supply within incident countries. The first stage was implemented to ensure that the internal economics of south American countries was relatively stable; this set up the second stage, which possessed the aim of priming the countries to then be able and adequate to contribute externally to the global economy. This secondary stage saw the intended countries utilising their respective free-floating currency structure to devalue their currencies, which resulted in them having a competitive edge in the global markets – this is a process known as competitive devaluation. State restrictions on imports and exports were also alleviated in tandem to the devaluation policies. The third and final stage of the consensus was privatisation; enabling market forces to operate at will, as well as allowing producers to chase a profit incentive – this ensued in an increase in efficiency across these countries.

In theory, these policies would bring unprecedented levels of prosperity to South America and this success would feed into the world economy. However, it is seldom that theory gets seamlessly translated into practice. Yet, in this case, it is evident that even the theory behind the policies was not correct. The integration of market-led development strategies is synonymous with the notorious 'trickle-down effect' that has time and time again been proven ineffective. For a time, the implementation of the Washington policies brought success to the Argentinian economy, among others. The IMF did not hesitate to take all the credit for these benefits – very soon they would regret doing so. The nature of this growth was inherently flawed: it was based on excessive borrowing and privatisations, which sold assets to foreign buyers (as stated in the third stage of the policies). The mistake here is that the revenue from these sales were not reinvested and essentially went to waste. Sales of assets resulted in a positive wealth effect, which consequently resulted in a boom in consumption; citizens were not accustomed to economic success on this scale. Growth lasted seven years, but even at this time, GDP was increasing at the expense of national wealth. Recession and economic stagnation followed – the 1990s saw a 50% decrease in economic growth from the 1980s. The 1990s was even referred to as the lost decade in the South Americas.

## India's Insurgence

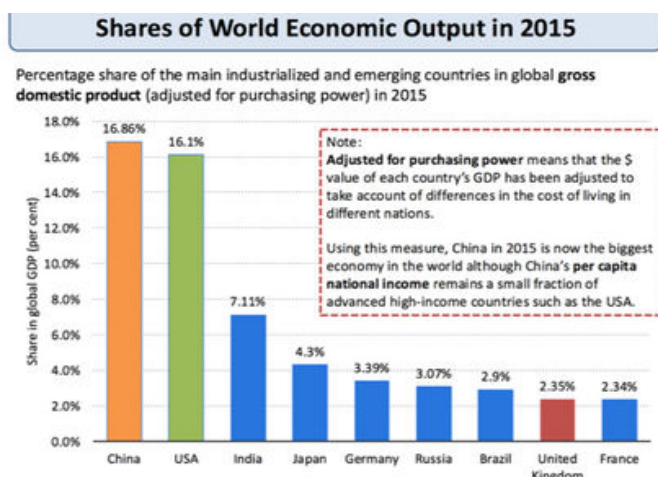
It is clear to see that globalisation is not necessarily synonymous with prosperity as was previously conceived, however it still cannot be denied that globalisation has completely altered the economic trajectory of certain countries. A prime exhibit of this is India.



From 1981–1999, India witnessed unprecedented levels of economic growth: the economy grew at 5.6 per cent on average every year in this period. This was a distinct deviation from the 3 per cent that was experienced in the 30 years prior.

The question to ask here is: what did India do differently that induced this change? Luckily, the answer lies in this segment. The 1980s was a decade where the Indian government – with Rajiv Gandhi in office – instated a change in their perspectives towards trade, government intervention and (most importantly) globalisation. Fundamentally, the government veered from import substitution industrialisation and fostered a system of export-led growth. One crucial component to this surge in economic activity was deregulation. This consisted of industrial de-licensing, whereby firms no longer had to deal with red tape that previously acted as a barrier to entry as well as restricting firms' freedom. As a result, competition was promoted amongst every single industry without fail and therefore enabled firms to benefit from economies of scale. The benefit of this reform can be found in the most rudimentary iteration of microeconomics: firms were far more innovative and efficient. Total factor productivity rose from 0.7 per cent to 2.6 per cent during this time-scale, hence accounting for an astonishing 37.7 per cent of growth.

As globalisation encompasses the growing interdependence of economies, India was able to capitalise on this; another policy, which propagated India's prosperity, was a reduction in import regulations complemented by an increase in export incentives. Prior to the 80s, India's restrictions on industry considerably hindered the scope for growth and resulted in India operating below its optimum efficiency. Therefore, it was clear to the government that with the on-going storm of globalisation, the ideal procedure would be to open up trade barriers. This is precisely what they did; imports granted firms the appropriate resources they required in order to produce, while also increasing competition for Indian firms. Export incentives were also intensified in tandem with the import relaxations – the government substantially reduced taxes on export revenue as well as reducing interest rates on export credit from 12 per cent to 9 per cent.



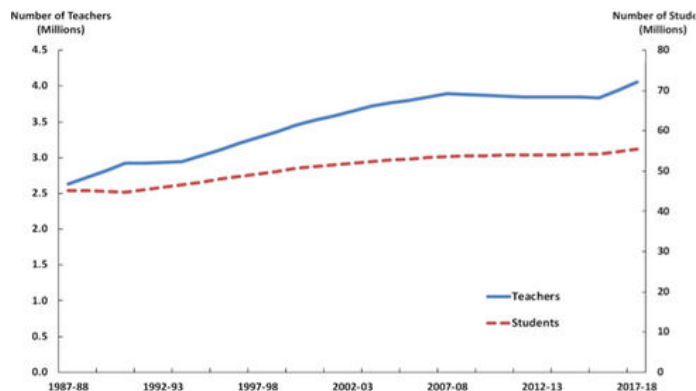
India's liberal policies opened up previously hostile barriers and paved the way for foreign direct investment. The external sector reformations of 1991 also spanned to abolishing the limits on capital inflows. This resulted various trans-national corporations such as Coca-Cola, Nestle and IBM 'setting up shop' in India. Many jobs were created in the process and therefore resulted in positive multiplier effects within the economy. However, the success of foreign direct investment is often questioned because it is associated with leakages – a significant proportion of the revenue gained from the laurels of FDI ended up back at the headquarters of the trans-national corporations rather than evoking a ripple-effect of growth within India's economy. Additionally, many of the senior roles and higher paying jobs were granted to foreigners rather than natives to India (which kind of defeats the purpose of foreign direct investment).

India's divergence from a relatively closed economy into the global economy effectively combatted its persistent issues of lack of productivity and effectively woke up a sleeping giant in world economics. Globalisation is a powerful phenomenon – which may be why it is so divisive.

### International Incongruities: What did India & China do differently to others?

It is undeniable that the outcomes of the two aforementioned case studies at the hands of globalisation is vastly contrasting. One possible reason for this may be that India's government actively instated said policies whereas South American countries had policies made for them in the form of the Washington Consensus. The fundamental but vital difference here is that India's government was clearly ready for these drastic alterations, while the South Americans simply were not.

Among China and India, many other Asian countries also enjoyed the fortunes of globalisation – but this is completely owed to their respective government's handling of the newly introduced policies. The governments ensured widespread stability by creating new jobs accordingly to the growth of the labour force. As a result, the standard of living improved drastically in various countries; Indonesia witnessed a downturn in poverty from 28 per cent to 8 per cent from 1987 to 2002. Average income in China has multiplied eightfold since the 1970s and the average level of education has also ameliorated. Many of these countries realised that implementing supply-side policies in tandem with trade liberalisation would enhance the opportunities that globalisation brought. For example, more funding was attributed towards education in order to vitalise the labour force of these countries. Infrastructure was also upgraded, with amenities such as bridges and motorways being constructed – this eased the movement of goods in and out of the country; hence enabling countries to realise their aim of export-led growth.



Furthermore, China and India's governments proved to be far smarter than the South American governments in terms of their management of these policies. They chose which sectors to stimulate development in on the basis that there would be a substantial spill over effect on other aspects of the economy. Inducing growth in the secondary sector may result in the primary sector being incentivised to produce more, while the tertiary sector receives a higher amount of produce to sell – an economic chain reaction.

Although one of the integral components of globalisation was capital market liberalisation, both India and China recognised the potential risks associated with a rash laxation of laws. As a result, these two countries sanctioned the ability of long-term investment but prohibited hot money flows into their economy. Speculative inflows of capital into an economy can be extremely harmful as it paves the way for inflation, as well as the local currency becoming overvalued. In a country like India (which intended to pursue export-led growth), an expensive currency would extinguish any hopes of this. Moreover, India's aim of long-term growth would not be aided by money that could be pumped into the economy on a Monday and then be withdrawn within a week.

However, on the other hand, globalisation did result in various East Asian countries being pressured into opening up their markets to the flow of capital. A prime exhibit of this is Thailand. In 1997, conjecture resulted in hot money flowing into the country, hence resulting in the value of the currency plummeting. This spelled a spiral of catastrophe as central banks spent fortunes in a bid to support the currency – but this was to no avail. As a last resort, they turned to the International Monetary Fund for any form of aid but ended up tying their own hands in red tape. The banks had to adhere to a multitude of conditions such as high interest rates, which then further spiralled out of control as a plethora of firms were incompetent in fulfilling the heightened commission associated with the loans they took out previously. It is clear to see that globalisation is very much a two-sided coin; on the one hand it may bring opulence and yet at the same time, it can be very destabilising and even bring an entire economy to its knees in a short time period. The IMF contingency policies did not help alleviate the economic downturn experienced by Thailand due to speculative flows; it was mainly

designed to aid lenders and protect them. As a result, there was duration of deep and unnecessary dilemma within various East Asian economies, which could have just as easily been avoided if I weren't for globalisation policies.

### Communist Calamities: How did Eastern Europe react to globalisation?

As the integral focus of this article is on the decades of the 1980s and 1990s, it would be a mistake to not include any form of historical context. 1989 manifested a major change in global politics, as well as economics. The fall of the Berlin Wall indefinitely incorporated a sense of finality to the Cold War, with the power of the Soviet Union already waning from the turn of the 1980s. Consequently, the 'Iron Curtain' fell and many Eastern Bloc countries began to transition from a system of Communism to Capitalism. They possessed the perspective that communist policies had not served their countries too as great effect as previously perceived and therefore hoped that the globalisation fever would also happen to benefit them as well. Unfortunately, this was far from the reality of what happened.

Initially, the liberalisation policies synonymous with globalisation spelled hyperinflation for multiple eastern bloc countries. For example, the price level in Ukraine rose by 3300 per cent at one point. In order to attenuate the hyperinflation, contractionary fiscal policies as well as tight monetary policy were employed; these strategies paved the way for a cycle of recessions within these states. These economic catastrophes had unintended consequences in other aspects of life in Eastern Europe – Russia experienced a curtailment of four years in life expectancy in the 1990s.

One of the defining hallmarks of a communist landscape is that most (if not all) services or resources available to the public are state-owned. Therefore, it is no surprise that the process of privatisation was a core element attributing to the transition of these states away from communism. It is believed that privatisation results in an easier attainment of economic efficiency. Unfortunately, this theory proved to be easier said than done; the privatisations laid the foundations for the emergence of new oligarchs and tycoons who then took the money out of the country. This phenomenon is often referred to as capital flight, whereby money that was devoted towards helping the Russian economy ended up leaving the economy and aiding other countries. A prime example of this is the acquisition of Chelsea football club made by Roman Abramovich in the early 2000s. It is undeniable that the absence of apt governance resulted in certain agents exploiting the overhaul of privatisation. The constitutionality of the transferral of assets from public to private sector has a red question mark above it; from looking at the funds the government was receiving as tax revenue, it was clear that there was a plethora of leakages within the economy.

In hindsight, it is overwhelmingly blatant that the liberalisation process was far too rapid in the eastern bloc. The foundations to ensure the optimal effect of these policies had not yet been laid out – there was a glaring absence of stringent tax laws and regulatory measures, which in turn made it easy for parties to derive loopholes in order to maximise private benefit.

### How has globalisation affected QE?

Considering the fact this edition of the Econobethan is in commemoration of QE's 450th anniversary, it is important to recognise the everlasting effect that globalisation has had on the school.

One of the obvious factors at play here is the demographic of students at the school. QE boasts a very diverse student body, which – in fact – is mainly composed of students who are not native to the UK. If the liberalisation of capital and labour flows had not occurred then this would definitely not be the case. It can be argued, therefore, that the quality of QE's student body has been enhanced, as the selection process is not just examining those confined to the UK, but also to those who are from other countries as well. The same sentiment also holds for the teachers too. In light of globalisation, the role of the teacher has been reconstructed, with a new fixation on merit and competency. It is fairly intuitive that many academic shortcomings of students can be owed to the inability of teachers to captivate their students. Globalisation has resulted in increased competition amongst labour, hence resulting in an increase in quality of labour, which has therefore also somewhat contributed towards QE's exceptional grades.

Furthermore, the incorporation of technology into the classroom has provided students with far more enriched education, as it is easier to conduct research and to understand topics. Pupils now have a plethora of methods in which they can learn – not just by being physically present in an establishment. These advancements display a shift from an industrial-oriented society to an information-based one. Furthermore, the ever-increasing ease of communication now means that students can establish connections with other students throughout the globe and can share information with each other to an unprecedented extent.

# Regal Ruler or Rigid System? The Pros and Cons of Monarchy Unveiled

Sena Lai-Fujiwara

Upon the recent bestowing of the royal crown, it would be appropriate under the circumstances to clarify some aspects of the monarchy and how it has come to its position in society today. When defining the monarchy, various issues come to mind due to the need for culture and historical context, as well as for the country in question. The monarchy can be seen as a unifying force that acts as a symbol to the rest of the world, but it may also be perceived as an outdated relic which is past its time. Countries such as Spain and Thailand have had debates over this system for years, being the central role in political discussions.

The following are a couple of the accepted definitions:

- A form of government with a 'kingship' at the head
- A state that has a monarch
- The royal family of a country

With these definitions also come the types of monarchy:

- Constitutional monarchies
- Absolute monarchies

In the UK, we have a constitutional monarch where the role of the monarch is largely figurative, and they do not have significant political power. Instead, this 'monarch' participates in activities that promote national unity and support charitable causes. Examples include performing ceremonial duties (coronations, marriages, national holiday celebrations), opening parliament (meeting with the prime minister) or representing the country on state visits. Other nations which follow this template include Sweden, Norway and Japan.

In contrast, the other type of monarch, absolute in this sense, is completely the opposite. Here, the royal ruler of the country holds complete and unrestricted power over the people – with the lack of systematic democratic voting, no checks or revisions are made on their authority. Absolute monarchies were common in many parts of the world in the past but in modern times, they have become increasingly rare due to the greater prevalence of egalitarian and cosmopolitan principles. This system was often associated with the idea of the 'divine right of kings' where the monarch was believed to have been chosen by God to rule with such absolute authority (something the UK was culpable to formerly). However, there are still some present examples of absolute monarchies remaining in the world: Saudi Arabia, Brunei and Eswatini are a few to name.

Monarchs. What are the positives that come with this originally authoritarian concept?

Unity + success:

Although the debate about fairness and equal opportunity may arise, the monarchical systems of government have typically prevented the need for different parties that have contradicting ideologies. The lack of competition provides

some sense of unity and common ground, where efficiency and productivity can be maintained with less conflict and division among individual or groups.

A relatable success story with monarch intervention can take the form of our own school, Queen Elizabeth's School, Barnet. Quite evident by the name itself, the school was chartered in 1573 by Queen Elizabeth I due to her relationship with her close friend and advisor Robert Dudley. It was Dudley who was responsible for the establishment of the school in 1573 and he played an important role in its early years. His interest in education and belief that it was essential for the future of England made him a supporter of the idea of free grammar schools, which provided a classical education to boys from modest backgrounds, and he saw the establishment of such schools as a way of promoting social mobility and ensuring that the most talented students had the opportunity to succeed.

With the monarch's support, the Earl of Leicester founded the Free Grammar School of Queen Elizabeth in Barnet, which was later renamed Queen Elizabeth's School in the Queen's honour. He provided financial support for the school and played an active role in its governance, serving as one of its first governors.

Today, the school is still highly regarded for its academic achievements and is known for its commitment to providing a high-quality education to students from all backgrounds.

Economic savings:

Looking at this from an economic lens, a monarchical government would eliminate the need for an election and democratic policy making. All of these processes utilise a significant part of government funds, more in some countries than others, and so with only one party in rule, the amount of money saved can be used for other and more humanitarian purposes, such as in healthcare and education funding. In the UK, although it is illegal for political parties to use government funding to boost their election campaigns as stated by legislation, public funding may be available in the form of Short and Cranborne Money.

The government provides both types of funding to help opposition parties, which are political parties that are not in government. For instance, given the current governance by the Conservative party, the primary opposing political party would be the Labour Party. Short money is a grant given to these opposition parties in the House of Commons to help cover their official expenses. This is offered on a quarterly basis and is calculated based on the

number of seats held by each party within the House of Commons. Things such as research, staffing and administrative costs are usually covered by this scheme. Cranborne money on the other hand is provided to opposition parties in the House of Lords, used to help parties develop their research initiatives and policies. Similar to short money, they are also based on the number of seats held in the House of Lords.

To avoid overspending and hedonistic expenditures, regular reports and receipts must be produced by parties. However, this funding strategy has not been flawless: in 2016, it was revealed that the Labour Party had used Short money to pay for a private polling company in their EU referendum campaign, an arguable breach of the rules. Likewise, in 2018, it was revealed that some Lords had used Cranborne Money to pay for personal expenses, such as clothing and tax rides. This all ties back to the benefit of having a monarchy, where government savings can be saved and increased instead of being used for political campaigns.

Stemming away from governments but as monarchs as a whole, the presence of a monarch can have positive economic effects through things such as tourism related to the monarchy or favourable trade opportunities that arise given a monarch's diplomatic support or visits. Countries such as the UK have a strong royal brand; they attract significant tourism revenue from both domestic and international visitors. It is estimated that the royal family generate around £1.8 billion in tourism revenue annually, through royal residences and palaces, events and celebrations and museums and exhibitions.

#### Power transitions:

In the passing down of monarchs, the next ruler is already chosen and known by citizens, which can be said to avoid riots and protests of citizens after the rules has been announced. Unlike governments where the democracy creates uncertainty for who is to become the next leader (therefore social discord), in the case of abdication or death of the current ruler, the next monarch can take control and lead immediately. This can be linked to the funding process, where costs of political propaganda are not needed if only one faction is in control.

#### Stability and balance:

Monarchs with a fair share of power limited by a Constitution, which is a legislative body elected by the people, are quite naturally the more common type of monarch. There is a balance between the power of the monarch and the elected representatives of the people, allowing for the people's views to be considered but at the same time, mainlining national identity under a common ruler. Additionally, constitutional monarchies offer a sense of security and continuity that can instil confidence in the general public, investors, and businesses. This, in turn, can help maintain confidence in the economy and encourage economic growth.

## **Possible Flaws of the Institution**

### Tyranny:

In spite of the fact that it is not always the case, tyranny is probably the most common type of counter to the argument of having a monarch as the central source of power in a country. Monarchs with absolute may be quite easily blinded by authority and the misuse of it could lead to oppression towards lower class citizens or generally more riots and suffering due to the differences between views of the leader and the views of the people.

### Diversity:

In parliament, the presence of different parties and viewpoints have helped in ensuring that there is diversity in the laws formed and that these laws beneficial for the good of all different communities. With an absolute monarch however, there is only the opinion of one person which becomes the law – fairness and inclusiveness is not guaranteed.

### Unnecessarily expensive

It's not explicit but even with constitutional monarchies, the individual in power still receives a hefty income, an amount that people debate on being 'too much.' This money is paid through the taxes of the people for the Sovereign Grant, an idea that not everyone is too pleased on. Some monarchs are not required to pay taxes, but this depends on the specific laws and regulations of the county. With the UK, the King and other members of the royal family do pay taxes on their personal income, but they also earn money from the annual public funding through the Grant, which sort of cancels out this taxation system.

The following is a statistical statement by the Mirror:

"The Operation Golden Orb committee, which is planning the ceremony, reportedly estimated that King Charles III's Coronation to cost £100million, although this hasn't been confirmed. Meanwhile, the ceremony for Queen Elizabeth II is estimated to have cost a total of £1.57million, the equivalent of £46million today."

In corroboration, the Telegraph's 2003 report of Japan's royal expenditure was estimated to be around \$200 million annually. The Emperor of Japan is said to use this money on 4 doctors on call at all times, 5 wardrobe attendants and 11 people who help with Shinto rites.

Overall, there are various downfalls to having both a monarchy in absolute or in constitutional power, primarily on the topic of the people's voice and equality, which could be presented by democratic systems. Nonetheless, there are clear economic advantages of having a royal symbol that represents a country: proportionally, the amount of revenue the royal family earns via tourism and other international factors overpowers the funds they require for coronations and personal uses.

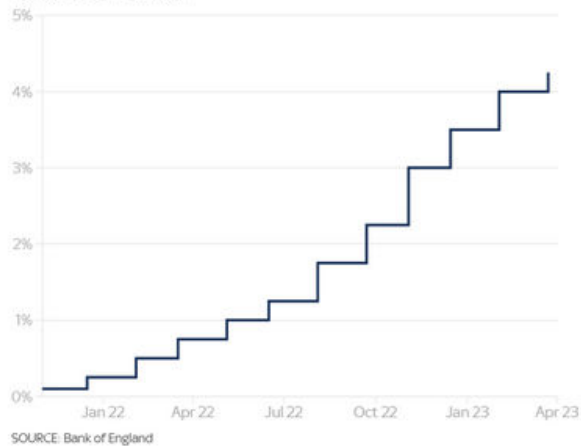
# What Happens When Central Banks Lose Credibility?

Siddarth Sridhar

In the light of the financial instability caused by the collapse of a series of US banks, as well as Swiss investment bank Credit Suisse, speculation was rife over whether the Bank of England would finally put a halt to its year-long trend of hiking interest rates (see Figure 1). However, recent data depicting a rise in UK inflation to 10.4% saw the institution raise borrowing costs for the eleventh consecutive time, the 4.25% Bank rate being the highest since the Financial Crisis. Indeed, the adamance to persist in raising the cost of mortgage interest payments and credit card bills for households already suffering in a cost-of-living crisis serves as a continued bid to retain confidence among economic actors that inflation will be brought down to target. The Bank of England's aggressive stance against high inflation reaffirms the ever-important nature of central bank credibility, a concept integral to the anchoring of inflation expectations.

**The Bank of England has increased the Bank Rate to 4.25%**

Interest Rate since Nov 2021

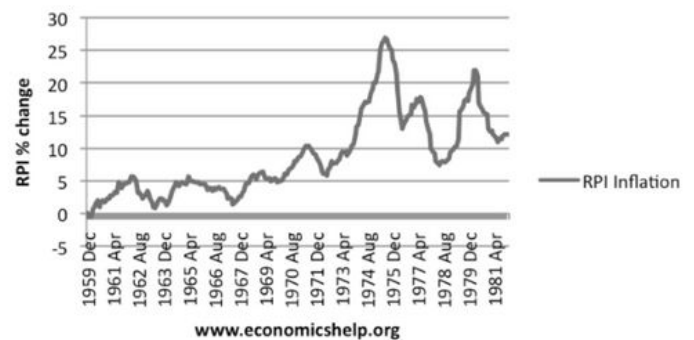


Central bank credibility is a function of the difference between observed inflation and the target inflation rate, therefore measured in the Bank of England's case by its ability to rein inflation back to 2% (+/- 1%). It is the confidence households and businesses have in the capability of central banks to meet policy objectives set, hence determining how susceptible long-run inflation expectations of these economic actors are to short-term fluctuations. The more credible a central bank is, the more 'anchored' and insensitive long-term inflation forecasts are, despite inflation moving above or below target in the short-run as a result of various shocks to the economy. It is, as a result, that former Federal Reserve Chairman Ben Bernanke attributed the 'current and past conduct of monetary policy' as a key factor in keeping inflation expectations at the central bank's target, the history and effects of past Bank of England policy meticulously examined in an attempt to assess the institution's ability to actually deliver on a price stability mandate. Satisfied that inflation will return to target in the long-run, workers campaign less for higher wages in

response to above-target inflation, and firms hold off on raising prices due to the belief that costs will eventually subside.

However, the opposite holds true as well – a lack of trust in the ability of central banks to curb inflation when it is above target could result in households and businesses raising their long-term inflation expectations. The oil price hikes of the 1970s sparked a period of high inflation in the UK which exceeded a rate of 10% annually for most of the decade (see Figure 2), hence de-anchoring expectations and resulting in a wage-price spiral, as workers demanded higher wages in anticipation of higher prices, and firms raised prices in anticipation of higher costs.

**UK Inflation**



An economy with full trust in central banks and anchored inflation expectations serves as a dramatic contrast to the turbulent wage-price spirals of the 70s where inflation peaked at over 25%. It is the irony of a lack of central bank confidence resulting in inflation moving even further off-target that makes central bank credibility the first step of a self-fulfilling inflation prophecy. Less credible central banks consequently require more aggressive action in order to bring inflation back to target, the 1980s seeing the Bank of England raise interest rates to over 15%. The contrary also applies, more credible central banks able to act less aggressively when faced with inflationary pressures, as anchored expectations reduce the necessity of further policy to cooldown the economy. This makes central bank credibility arguably more valuable for the Federal Reserve due to its secondary mandate of maximum sustainable employment, a scenario it is more likely to achieve if policy rates don't go up as often.

A credible central bank is perceived to possess the ability to maintain the stable economic conditions needed to incentivise foreign direct investment into the country through the promise of economic growth and, hence, growth in the value of one's capital. A subsequent loss of credibility can lead to the flight of this investment due to a lack of confidence over a country's economic prospects,



as well as concern over the erosion of their savings due to unrestrained inflation, hence decreasing the value of their currency. Indeed, the turbulence of the 1970s saw the pound slide against the dollar, going from buying 62 cents in 1976 to just 45 cents in 1980.

The Bank of England's handling of the cost-of-living crisis hasn't come without criticism, a group of Conservative MPs claiming the institution 'constantly' underestimates 'the threat of rising inflation' in response to the 9% inflation figure put out in May 2022. Governor of the Bank of England, Andrew Bailey, deems the crisis 'the biggest test of the monetary policy framework for 25 years,' aggressive rate hikes in response to double figure inflation essential in retaining confidence and keeping expectations anchored. The Bank of England's wish not to dwindle on the noise of bank collapses and possible financial sector instability suggests an adamance to its inflation commitment, perhaps in the hope of being paid dividends in the currency of credibility, as in the words of Janet Yellen, former Chair of the Federal Reserve, 'A credible central bank is one of the pillars of a successful modern economy.'

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# Il était une fois au Royaume-Uni

Aayush Backory

L'année est mille neuf-cent quarante-cinq. L'espoir, la richesse, la prospérité : ceux-ci n'existent pas au Royaume-Uni. La deuxième guerre mondiale vient de finir, et maintenant, ce pays a pour but de reconstruire une économie, qui ne connaît plus la puissance industrielle qu'avant. Bienvenue à un défi qui semble impossible : une revitalisation économique.

Pendant que la deuxième guerre mondiale se passait, le Royaume-Uni connaissait plein de problèmes économiques. On a introduit le rationnement au début de la guerre, parce que la première guerre mondiale a mis en lumière la pénurie alimentaire qui se passerait, si le rationnement n'était pas une règle en depuis le début. Le rationnement durait jusqu'à ce que quelques années passent après la fin de la guerre.

Il faut noter aussi que le Royaume-Uni avait été bombardé pendant la guerre. On avait détruit plein d'usines, ainsi que les maisons et les rues. Puisque beaucoup d'infrastructure a été endommagée, il y avait besoin d'aide financier pour rebâtir les villes

Le Royaume-Uni a reçu beaucoup d'aide financière venant des États-Unis. Ça a aidé beaucoup, naturellement. Cependant, la mesure dont l'aide financière était utile, c'est difficile à juger. On penserait que l'aide aurait été fantastique, et c'est en quelque sorte une vraie sorte, mais l'aide n'était pas aussi bien utilisée qu'autre pays, tel que l'ouest Allemagne et la France. Dans ces pays, il y avait beaucoup d'argent qu'on a dépensé, afin que ces pays puissent reconstruire les industries et fournir les choses indispensables aux personnes qui en avaient besoin. Bien que ce soit réel au Royaume-Uni, ce n'est pas exactement la même histoire. Il avait beaucoup de dette, et dont la plupart d'argent a été utilisée afin d'en assurer le service. Donc, on dit que l'aide était utile, mais pas assez utile qu'on attendait peut-être.

Ainsi, il commence au Royaume-Uni une reconstruction économique, qui se passe avec la partie socialiste qui était chargée du développement national après la guerre. Avant la guerre, on n'avait pas beaucoup d'intervention dans l'économie. Bien qu'il soit vrai que le gouvernement avait un peu d'influence avant, en concernant les lois économiques avec les trains, par exemple, on n'avait pas encore vu la politique socialiste au Royaume-Uni. Après la guerre, on a dit, « bienvenue » au grand gouvernement. Mais pourquoi a-t-elle changé, l'opinion de la population ?

Pendant la guerre, les personnes riches qui habitaient à la campagne avaient accueilli les enfants pauvres des villes. Alors, elles s'étaient rendu compte de la pauvreté qui existait.

Cela a provoqué un grand changement dans la vue de la société pour les personnes riches. Elles sont arrivées à penser qu'il faut qu'on aide les autres, même si ça a voulu dire qu'elles ont plus d'impôts. Cela n'est qu'un facteur qui a mené à la popularité du socialisme parmi les Britanniques. Donc, quand Attlee est devenu le premier ministre du Royaume-Uni, il y avait un mouvement économique à une société, dans laquelle il y avait un filet de sécurité sociale. La fondation du service national sanitaire a fait partie de ce principe économique. Il voulait dire que même les personnes pauvres pouvaient accéder à l'aide sanitaire. Ça a beaucoup aidé avec le problème d'inégalité.

Après la création du NHS, l'égalité économique s'est considérablement améliorée. Bien que l'on puisse argumenter qu'une approche plus douce est meilleure pour l'économie – une idée soutenue par l'économiste Friedrich Hayek – il semble que la présence forte du gouvernement dans l'économie ait aidé le Royaume-Uni à se développer massivement, tant sur le plan social qu'économique. Socialement, il va sans dire que le service national de santé, et les politiques socialistes qui l'accompagnaient, ont contribué à créer une société plus cohésive. Ces politiques collectivistes ont permis à moins d'enfants de souffrir de la faim. Bien que cela puisse ne pas paraître très significatif, les effets globaux sont énormes. Une diminution de la pauvreté dans la région et une amélioration de la santé des plus pauvres ont créé un pays dans lequel il y avait moins de division sociale entre les riches et les pauvres. Cela signifiait que même s'il y avait des problèmes économiques découlant des politiques socialistes, on pourrait dire que les avantages sociaux auraient rendu toute perte économique digne d'être supportée. Deuxièmement, l'intervention du gouvernement dans l'économie était, à cette époque, d'une importance critique. En reconstruisant les infrastructures et en investissant dans la santé, le Royaume-Uni a pu créer une nation heureuse et en bonne santé : une nation qui est, comme résultat, très productive. Il ne fait aucun doute que l'amélioration de la santé des plus pauvres de la société a entraîné une grande période de croissance économique au Royaume-Uni, qui a été reproduite en Europe, en France, où la France a connu un boom économique connu sous le nom des Trentes Glorieuses.

Bien qu'il y ait une cote efficace de la politique socialiste, on voit qu'il existe beaucoup de problèmes.

En sauter une partie, on arrive dans les années 70, un temps dans lequel il existe beaucoup d'inflation et de stagnation économique. Il se semble qu'il n'y a pas de solution pour ce problème, mais afin qu'on puisse la

trouver, il faut comprendre les raisons de cette époque en misère.

Pendant le milieu des années 1970, le Royaume-Uni était confronté à l'une de ses pires crises économiques depuis plus de quatre décennies. Le pays était aux prises avec des taux d'inflation élevée, un chômage élevé et un énorme déficit de la balance des paiements. L'ouverture du Parlement en 1976 a vu la reine Elizabeth II prononcer un discours exposant les plans du gouvernement pour l'année à venir, dans un contexte économique difficile. Les taux d'inflation dans le pays ont culminé en juin 1975 à près de 40% par an et sont restés supérieurs à 14% les années suivantes. Cela a entraîné une diminution du niveau de vie pour de nombreux Britanniques, et le gouvernement appelant à la retenue salariale. Le taux de chômage était de 6% de la main-d'œuvre totale, et le gouvernement dépensait des sommes importantes en prestations sociales pour les chômeurs. La production industrielle était stagnante, sans perspective de croissance de l'emploi dans le pays. L'économie internationale était également en difficulté pour croître, exacerbant la situation pour le Royaume-Uni.

En mars 1976, la livre a été dévaluée et est tombée en dessous de 2 dollars, approchant 1,50 dollar en octobre de la même année, ce qui a entraîné des mesures de crise du gouvernement pour renforcer les réserves. Le gouvernement cherchait une aide internationale pour financer les soldes en sterling détenus par les producteurs de pétrole arabes. Cependant, malgré l'environnement économique difficile, des touristes étrangers se sont rendus en masse dans le pays pour profiter du taux de change favorable et des prix assez bas pour les biens. Le Premier ministre de l'époque, James Callaghan, était chargé de résoudre les problèmes économiques du pays. Dans l'ensemble, le milieu des années 1970 a été une période de difficultés économiques pour le Royaume-Uni, marquée par une forte inflation, un taux de chômage élevé et un important déficit de la balance des paiements.

Au cours de cette période, les syndicats ont joué un rôle incroyablement important dans l'histoire économique du Royaume-Uni. Avec une forte inflation et des salaires stagnants, de nombreux travailleurs se sont tournés vers les syndicats pour revendiquer de meilleurs salaires et conditions de travail.

Malheureusement, cela a également conduit à des tensions entre les syndicats et le gouvernement, avec des accusations de « militantisme » syndical et de grèves perturbant les services essentiels. En 1978, le gouvernement a introduit le « Contrat social », un accord volontaire entre les syndicats et les employeurs, qui a eu pour but de limiter les augmentations de salaires afin de lutter contre l'inflation. Néanmoins, cela a été accueilli par une opposition de certains syndicats qui estimaient que l'on leur demandait de faire trop de concessions. Les syndicats ont en quelque sorte pris en otage la nation, et le gouvernement travailliste a semblé le permettre.

Il y avait par ailleurs un déficit commercial, causé par le désir des syndicats de conserver des industries inefficaces. Pour résoudre le déficit de la balance des paiements, le gouvernement a sollicité l'aide du Fonds Monétaire International (FMI), qui a accordé un prêt de 2,3 milliards de livres Sterling en novembre 1976. En retour, le FMI a demandé des mesures d'austérité et des réductions des dépenses gouvernementales, ce qui a encore freiné la croissance économique et a conduit à des troubles sociaux. De nombreuses personnes étaient mécontentes que le Parti travailliste paraissait, jusqu'en 1979, être sur les deux fronts. D'un côté, ils ont radicalement réduit les dépenses afin de ne pas dépenser plus que ce qu'ils produisaient, ce qui a irrité la population de gauche du Royaume-Uni. Cependant, le Parti travailliste est resté étroitement lié aux syndicats. Tout cela a finalement conduit à la défaite du Parti travailliste en 1979, et la résignation de Callaghan.

Il y avait beaucoup de problèmes avec les syndicats, mais le point charnière, c'était l'hiver de misère qui se passait entre les années 78 et 79. En concernant les travailleurs, beaucoup d'eux se sont mis en grève, qui voulait dire qu'il n'existait pas la plupart des services et biens, tels que l'énergie ou le ramassage des ordures. La disruption des syndicats s'est terminée par une semaine dans laquelle on travaillait pendant trois jours, parce qu'il n'y avait pas assez d'électricité pour fournir l'énergie pour les usines. Il n'y avait pas aussi assez d'électricité pour les maisons. Avec le manque de ramassage des ordures et les rues sales, le froid et la pauvreté ont provoqué un hiver en misère. La population s'est rendu compte qu'on ne peut pas faire confiance aux syndicats. La population en avait marre, et elle voulait un changement radical. On a proposé ce changement avec un nouveau gouvernement conservateur, mené par la femme en fer.

Les politiques de Thatcher concernant les syndicats étaient un aspect important de ses efforts pour résoudre les problèmes économiques du Royaume-Uni. La loi sur l'emploi de 1980 a été une mesure clé visant à limiter le pouvoir des syndicats. Une des principales dispositions de la loi était l'exigence pour les syndicats d'organiser un vote secret avant de prendre une mesure de grève. Cela visait à s'assurer que les dirigeants syndicaux ne pouvaient pas appeler à des grèves sans le soutien de leurs membres. La loi a également introduit des restrictions sur les piquets de grève, en rendant illégal pour les syndicats de faire des piquets de grève à l'extérieur des lieux de travail où la majorité des employés n'étaient pas membres du syndicat. Le gouvernement de Thatcher a fait valoir que ces politiques étaient nécessaires pour empêcher les syndicats de causer des perturbations dans les services essentiels. Les syndicats étaient devenus de plus en plus militants dans les années 1970, avec des grèves et des actions industrielles causant de vastes perturbations dans l'économie.

Le gouvernement croyait que la limitation du pouvoir des syndicats aiderait à créer un environnement économique plus stable et à attirer les investissements étrangers.

Les critiques des politiques de Thatcher concernant les syndicats ont affirmé qu'elles étaient anti-ouvrières et favorisaient injustement les employeurs. L'exigence de vote secret, par exemple, était considérée comme une façon pour les employeurs d'intimider les membres du syndicat et de les empêcher de faire grève. Les critiques ont également affirmé que les restrictions sur les piquets de grève étaient une violation des droits des travailleurs et limitaient leur capacité à protester contre un traitement injuste de la part des employeurs.

Malgré ces critiques, les politiques de Thatcher sur les syndicats ont largement réussi à réduire le pouvoir des syndicats et à limiter leur capacité à prendre des mesures de grève. L'adhésion syndicale a considérablement diminué dans les années 1980, et les grèves sont devenues beaucoup moins courantes. Cela a contribué à créer un environnement économique plus stable et à renforcer la confiance des investisseurs dans l'économie britannique.

La limitation des syndicats a permis au Royaume-Uni de devenir une nation productive. Cela est dû au fait que le pouvoir a été donné non pas à une grande organisation, comme un syndicat, mais aux individus travailleurs qui ont créé des entreprises. Cela crée une incitation au profit et une focalisation sur l'efficacité. En s'assurant que les industries inefficaces, comme l'industrie du charbon, étaient autorisées à échouer, Thatcher a entraîné une forte augmentation du chômage et un déclin régional du nord à court terme. Cependant, cela a permis au Royaume-Uni de croître, de réduire le déficit commercial et finalement de se débarrasser de la dépendance du gouvernement dans l'économie. Cela a contrecarré la politique précédente du Parti travailliste de favoriser une forte influence gouvernementale dans l'économie.

En plus de ses politiques sur les syndicats, Thatcher a également mis en œuvre une série d'autres mesures pour résoudre les problèmes économiques du Royaume-Uni. Elle a poursuivi une politique monétariste, qui consistait en un contrôle strict de la masse monétaire pour réduire l'inflation. Cette politique était controversée et a entraîné des taux d'intérêt élevés et une augmentation du chômage à court terme. Néanmoins, elle a finalement réussi à réduire l'inflation et poser les bases d'une croissance économique soutenue dans les années 1990. Il est important de noter que de nombreuses politiques allaient à l'encontre des croyances populaires, car beaucoup pensaient que la hausse des taux d'intérêt et du chômage était mauvaise. Bien que cela soit vrai, il était nécessaire de le faire pour assurer une croissance économique stable à l'avenir, et on peut voir, à partir des résultats, que ses politiques ont très bien fonctionné.

Une autre façon importante dont Thatcher a cherché à résoudre les problèmes économiques a été par sa politique de privatisation.

Elle croyait que les industries nationalisées étaient inefficaces et non productives et qu'elles constituaient un fardeau pour les contribuables. En 1980, son gouvernement a lancé un programme de privatisation, qui consistait à vendre des industries et des services publics à des investisseurs privés. La première grande privatisation a été celle de British Aerospace, qui a été vendue en 1981. Elle a été suivie de la privatisation de British Telecom, British Gas et British Airways, entre autres. Le gouvernement a également vendu des logements sociaux à leurs locataires, connue sous le nom de politique « Droit d'acheter ». Cette politique a permis aux locataires d'acheter leur propre maison.

Tout n'était pas bien à la fin de l'époque de la femme en fer, néanmoins. Un facteur qui a contribué à la destitution d'elle, c'était l'inégalité. Le déclin des industries lourdes au nord d'Angleterre a provoqué un sentiment très énervé dans cette région. Bien qu'il y ait beaucoup de croissance économique pendant qu'elle était en charge, on n'en a pas connu les effets dans les anciennes régions industrielles. La plupart de la croissance économique avait lieu à Londres, par exemple, avec la construction du « Canary Wharf ». Bien qu'il existe les autres raisons qui ont mené à sa destitution, l'inégalité a voulu dire qu'elle a perdu beaucoup de soutien au nord du Royaume-Uni. Globalement, il est important qu'on remette en question, si le mouvement au néolibéralisme était quelque chose de bon. On a résolu les problèmes économiques comme l'inflation, mais ça, il a coûté l'égalité dans ce pays. On a beaucoup d'inégalités économiques maintenant, à cause de la politique néolibérale. Si la réalisation la plus importante était la croissance économique, en concernant les finances : est-ce qu'il est acceptable que le nord d'Angleterre connaisse encore la pauvreté, et on a dans ce pays, les riches qui ne s'occupent pas les pauvres comme avant ?

On se rend compte que le socialisme était nécessaire après la guerre, et la politique conservatrice était aussi nécessaire, afin de résoudre les problèmes qu'on a provoqués avec le socialisme. Donc, après avoir étudié cette époque, une chose m'est claire : il faut qu'on ait à la fois le socialisme et le néolibéralisme. Les deux ont leurs propres époques, dans lesquelles ils sont utiles. Mais il va sans dire qu'on doit avoir une politique équilibrée, si on veut se développer.

# Once upon a time in the UK

Aayush Backory

The year is one thousand nine hundred and forty-five. Hope, wealth, prosperity: these do not exist in the UK. The Second World War has just ended, and now, this country aims to rebuild an economy, which no longer has industrial power than before. Welcome to a seemingly impossible challenge: economic revitalization.

While the Second World War was going on, the United Kingdom was going through a lot of economic problems. Rationing was introduced at the beginning of the war, because the First World War highlighted the food shortage that would occur if rationing was not a rule from the start. The rationing lasted until a few years passed after the end of the war.

It should also be noted that the United Kingdom had been bombed during the war. We had destroyed a lot of factories, as well as houses and streets. Since a lot of infrastructure was damaged, there was a need for financial assistance to rebuild the cities

The UK has received a lot of financial aid from the United States. It helped a lot, of course. However, the extent to which the financial assistance was helpful is difficult to judge. You would think that the aid would have been fantastic, and it is sort of a real kind, but the aid was not as well used as other countries, such as western Germany and France. In these countries, there was a lot of money that was spent, so that these countries could rebuild the industries and provide the essentials to the people who needed them. Although it's real in the UK, it's not exactly the same story. He had a lot of debt, most of which was used to service it. So, we say that the help was useful, but not as useful as we expected.

Thus, the United Kingdom began an economic reconstruction, which happened with the socialist party which was in charge of national development after the war. Before the war, we did not have much intervention in the economy. Although it is true that the government had a little influence before, concerning economic laws with trains, for example, we had not yet seen socialist politics in the United Kingdom. After the war, we said, "welcome" to big government. But why has it changed the opinion of the population? During the war, rich people who lived in the countryside took in poor children from the cities. Then they realized the poverty that existed. This caused a big change in the view of society for wealthy people. They have come to think that we have to help others, even if it meant that they have more taxes.

This is only one factor that led to the popularity of socialism among the British. So when Attlee became Prime Minister of the United Kingdom, there was an economic move to a society, in which there was a social safety net. The foundation of the national health service was part of this economic principle. He meant that even poor people could access health care. It helped a lot with the inequality problem.

After the creation of the NHS, economic equality improved considerably. Although it could be argued that a softer approach is better for the economy – an idea supported by economist Friedrich Hayek – it seems that the strong government presence in the economy has helped the UK to develop massively, both socially and economically. Socially, it goes without saying that the National Health Service, and the socialist policies that accompanied it, helped create a more cohesive society. These collectivist policies resulted in fewer children going hungry. Although this may not seem all that significant, the overall effects are enormous. A decrease in poverty in the region and an improvement in the health of the poorest created a country in which there was less social division between rich and poor. This meant that even if there were economic problems arising from socialist policies, the social benefits could be said to have made any economic loss worth bearing. Second, government intervention in the economy was, at that time, of critical importance. By rebuilding infrastructure and investing in health, the UK has been able to create a happy and healthy nation: a nation that is, as a result, highly productive. There is no doubt that improving the health of the poorest in society led to a great period of economic growth in the UK, which was replicated in Europe, France, where France experienced a known economic boom under the name of "Les Trente Glorieuses".

Although there is an effective rating of socialist politics, it is seen that there are many problems.

Skipping a bit, we arrive in the 70s, a time in which there is a lot of inflation and economic stagnation. It seems that there is no solution for this problem, but in order to find it, we must understand the reasons for this time of misery.

During the mid-1970s, the UK faced one of its worst economic crises in over four decades. The country was struggling with high inflation rates, high unemployment and a huge balance of payments deficit. The opening of Parliament in 1976 saw Queen Elizabeth II deliver a speech outlining the government's plans for the year ahead, in a difficult economic climate.



Inflation rates in the country peaked in June 1975 at nearly 40% per year and remained above 14% in subsequent years. This has resulted in a lower standard of living for many Britons, and the government calling for wage restraint. The unemployment rate was 6% of the total labor force, and the government was spending large sums on social benefits for the unemployed. Industrial production was stagnant, with no prospect of job growth in the country. The international economy was also struggling to grow, exacerbating the situation for the UK.

In March 1976, the pound was devalued and fell below \$2, approaching \$1.50 in October of that year, prompting government crisis measures to bolster reserves. The government was seeking international assistance to fund sterling balances held by Arab oil producers. However, despite the difficult economic environment, foreign tourists flocked to the country to take advantage of the favorable exchange rate and fairly low prices for goods. The prime minister at the time, James Callaghan, was in charge of solving the country's economic problems. Overall, the mid-1970s was a period of economic difficulty for the UK, marked by high inflation, high unemployment and a large balance of payments deficit.

During this period, trade unions played an incredibly important role in the economic history of the United Kingdom. With high inflation and stagnant wages, many workers have turned to unions to demand better wages and working conditions. Unfortunately, it has also led to tensions between unions and the government, with accusations of union "militancy" and strikes disrupting essential services. In 1978, the government introduced the "Social Contract", a voluntary agreement between unions and employers, which was intended to limit wage increases in order to fight inflation. Nevertheless, this was met with opposition from some unions who felt they were being asked to make too many concessions. The unions have kind of held the nation hostage, and the Labor government has seemed to allow it.

There was also a trade deficit, caused by the unions' desire to retain inefficient industries. To resolve the balance of payments deficit, the government sought assistance from the International Monetary Fund (IMF), which provided a loan of £2.3 billion in November 1976. In return, the IMF requested austerity measures and government spending cuts, which further hampered economic growth and led to social unrest. Many people were unhappy that the Labor Party seemed, until 1979, to be on both fronts. On the one hand, they drastically cut spending so as not to spend more than they produced, which angered the left-wing populace in the UK. However, the Labor Party remained closely linked to the trade unions. All of this ultimately led to the defeat of the Labor Party in 1979, and Callaghan's resignation. There were a lot of problems with the unions, but the turning point was the winter of misery that happened between the years 78 and 79. Regarding the workers, many of them went on strike, who wanted to say that most services and goods, such as energy or garbage collection, did not exist.

The disruption of the unions ended in a week in which we worked for three days, because there was not enough electricity to supply the energy for the factories. There was also not enough electricity for the houses. With the lack of garbage collection and the dirty streets, the cold and the poverty caused a miserable winter. People have realized that unions cannot be trusted. The population was fed up, and they wanted a radical change. This change was proposed with a new Conservative government, led by the Iron Lady.

Thatcher's trade union policies were an important aspect of his efforts to solve Britain's economic problems. The Jobs Act 1980 was a key measure to limit the power of trade unions. A key provision of the law was the requirement for unions to hold a secret ballot before taking strike action. This was to ensure that union leaders could not call strikes without the support of their members. The law also introduced restrictions on picketing, making it illegal for unions to picket outside workplaces where the majority of employees were not union members.

Thatcher's government argued that these policies were necessary to prevent unions from causing disruption to essential services. Unions had become increasingly militant by the 1970s, with strikes and industrial actions causing widespread disruption in the economy. The government believed that limiting the power of trade unions would help create a more stable economic environment and attract foreign investment.

Critics of Thatcher's policies regarding trade unions claimed that they were anti-labour and unfairly favored employers. The secret ballot requirement, for example, was seen as a way for employers to intimidate union members and prevent them from striking. Critics also claimed restrictions on picket lines were a violation of workers' rights and limited their ability to protest unfair treatment by employers.

Despite these criticisms, Thatcher's policies on unions were largely successful in reducing the power of unions and limiting their ability to take strike action. Union membership declined significantly in the 1980s, and strikes became much less common. This has helped create a more stable economic environment and boosted investor confidence in the UK economy. Limiting trade unions allowed the UK to become a productive nation. This is because power has been given not to a large organization, such as a union, but to individual workers who have established businesses. This creates an incentive for profit and a focus on efficiency. By ensuring that inefficient industries, such as the coal industry, were allowed to fail, Thatcher led to a sharp rise in unemployment and a short-term northern regional decline. However, it allowed the UK to grow, reduce the trade deficit and ultimately get rid of government dependency in the economy. This thwarted the Labor Party's previous policy of

favouring strong government influence in the economy.

In addition to his trade union policies, Thatcher also implemented a range of other measures to address the UK's economic problems. She pursued a monetarist policy, which consisted of strict control of the money supply to reduce inflation. This policy was controversial and led to high interest rates and increased short-term unemployment. Nevertheless, it was ultimately successful in reducing inflation and laying the foundations for sustained economic growth in the 1990s. It is important to note that many policies ran counter to popular beliefs, as many believed that rising interest rates and unemployment was bad. While this is true, it was necessary to do so to ensure stable economic growth in the future, and it can be seen from the results that his policies worked quite well.

Another important way Thatcher sought to solve economic problems was through her policy of privatization. She believed that nationalized industries were inefficient and unproductive and a burden on taxpayers. In 1980, his government launched a program of privatization, which consisted in selling industries and public services to private investors. The first major privatization was that of British Aerospace, which was sold in 1981. This was followed by the privatization of British Telecom, British Gas and British Airways, among others. The government also sold social housing to their tenants, known as the "Right to Buy" policy. This policy allowed tenants to purchase their own homes.

All was not well at the end of the Iron Lady's era, however. One factor that contributed to her impeachment was inequality. The decline of heavy industry in the north of England has caused a largely angry feeling in this region. Although there was a lot of economic growth while she was in charge, the effects were not seen in the old industrial regions. Most of the economic growth took place in London, for example, with the construction of the "Canary Wharf". While there are other reasons that led to her dismissal, inequality meant she lost a lot of support in the north of the UK. Overall, it is important to question whether the movement towards neoliberalism was something good. We solved economic problems like inflation, but that cost equality in this country. We have a lot of economic inequalities now, because of the neoliberal policy. If the most important achievement was economic growth, in terms of finances: is it acceptable that the north of England still has poverty, and we have in this country, the rich who do not care for the poor as before?

We realize that socialism was necessary after the war, and conservative politics was also necessary, in order to solve the problems that we caused with socialism. So, after studying this era, one thing is clear to me: we have to have both socialism and neoliberalism. Both have their own eras, in which they are useful. But it goes without saying that we must have a balanced policy if we want to develop.

# Die Geschichte von Sir Thomas Gresham

Aditya Tiwary

Sir Thomas Gresham, einer der einflussreichsten Personen der britischen Wirtschaftsgeschichte, ist vor allem als Kaufmann, Finanzier und einer der reichsten Männer im England des 16. Jahrhunderts bekannt. Sein Erbe zeigt sich nicht nur in der Gründung des Royal Exchange und des Gresham College, sondern auch in seinen Beiträgen zu unserer Schule: er erteilte 1573 die Charta für die Gründung der Schule.

## *Sein Leben*

Er war 1518 geboren und er wuchs in einer Familie renommierter Tuchhändler aus Norfolk auf, die ein Tuchgeschäft in Antwerpen hatte. Er studierte an der Cambridge Universität und absolvierte eine Ausbildung zum Juristen. 1542 trat er selbst in das Tuchgeschäft ein, als er der Mercers Company beitrug.

Er übernahm schließlich das Geschäft seiner Familie in den Niederlanden und handelte mit feinen Stoffen und Waffen. Während seiner Zeit in den Niederlanden wurde er zum königlichen Vertreter in Antwerpen ernannt, und er war für die Verwaltung der englischen königlichen Schulden auf den europäischen Märkten verantwortlich. In dieser Rolle konnte er die wirtschaftlichen Auswirkungen der Entwertung des Pfunds in den 1550er Jahren beobachten, die er schließlich lösen sollte.

In Anerkennung seiner Verdienste in Europa wurde er zum Ritter geschlagen und ist der wichtigste Wirtschaftsberater von Königin Elizabeth I geworden. Seine erste Aufgabe bestand darin, einen Plan zu schaffen, um die Inflation in England zu verringern und die Abwertung des englischen Pfunds zu stoppen, was er durch sein Verständnis von „Gresham's Law“ erreichen konnte.

Thomas' Vater, Richard, hatte die Idee, eine neue Niederlassung zu schaffen, in der sich Kaufmänner treffen konnten, um zu handeln. Thomas Gresham führte das Erbe seines Vaters weiter und stellte 1566 den Grundstein für den Royal Exchange, der schließlich 1571 von der Königin selbst eröffnet wurde.

„*Gresham's Law*“

Oft umschrieben als “schlechtes Geld vertreibt Gutes“, wird vom Ökonomen Robert Mundell besser gesagt als “billiges Geld vertreibt teures Geld nur, wenn es gegen den gleichen Preis eingetauscht werden muss“. Das Gesetz ist Gresham 1858 vom schottischen Ökonomen Henry Macleod zugeschrieben worden, obwohl Gresham tatsächlich nicht die erste Person war, die dieses Gesetz erstellte: ähnliche Ideen sind viel früher von Kopernikus, Oresme und Aristophanes bemerkt worden.

Die Große Entwertung (1544–1551) war eine von Henry VIII eingeführte (und von Eduard VI. weitergeführte) Währungsentwertungspolitik, in der die Menge an Edelmetall in Gold- und Silbermünzen reduziert und schließlich ganz durch billigere Metalle wie Kupfer ersetzt wurde. Ziel war es, die Seigniorage zu maximieren – den Gewinn, den der Emittent einer Währung erzielt (eine 10-Pfund-Note kostet nicht 10 Pfund). Gesetzlich gezwungen, sowohl alte, wertvollere Münzen als auch neue, billigere Münzen gleich zu behandeln, gaben die Verbraucher ihre billigen Münzen so schnell wie möglich weiter und behielten die alten Münzen, da sie nicht glaubten, dass die neuen Münzen den gleichen Wert wie die alten Münzen hatten. Das führte zu einer Abwertung der Währung und einem Rückgang ihrer Kaufkraft.

Gresham erklärte Elizabeth dieses Problem, und er wurde dann beauftragt, eine Lösung zu finden. Seine Idee war es, alle “billigen“ Münzen aus dem Verkehr zu ziehen und sie durch Münzen mit höherem inneren Wert zu ersetzen (d.h. den Anteil der Edelmetalle in der Münze zu erhöhen). Dies wurde von 1560–61 durchgeführt und es hat zu einer Seigniorage an die Krone von rund £ 50.000 geführt. Greshams Lösung verbesserte den Handel in England und führte zur Aufwertung des Pfunds.

Es gab mehrere Beispiele in der Geschichte, in denen dieser Effekt nachgebildet wurde. Zum Beispiel während des Unabhängigkeitskriegs in den USA (1775–1783) hat schlechtes Papiergeld, das damals als Zahlungsmittel akzeptiert wurde, alle wertvollen Gold- und Silbermünzen aus dem Umlauf entfernt. Ein neuliches Beispiel war 1982 wieder in den USA, als die US-Regierung die Zusammensetzung des Pennys änderte, um 97,5% Zink zu enthalten, und deshalb waren ältere Pennies wertvoller als neuere, obwohl der Nennwert gleich blieb. Aufgrund der Abwertung der Währung und der daraus resultierenden Inflation stiegen die Kupferpreise von etwa 0,6662 USD / Pfund im Jahr 1982 auf 3,0597 USD / Pfund im Jahr 2006, und die Kaufkraft eines Pennys nahm im gleichen Zeitraum 80% ab.

In der heutigen Welt sind Beispiele für Greshams Gesetz selten, weil das globale Finanzsystem seit 1971 (als Nixon den Dollar vom Goldstandard nahm) zu Fiat-Währungen (Währungen, die nicht durch eine materielle Ware gedeckt sind) übergegangen ist. Tatsächlich wurde der Anteil der Bartransaktionen in Großbritannien in den letzten 10 Jahren von über 50% zu unter 15% verringert. Es gibt jedoch keine Beispiele dafür, dass Greshams Gesetz mit digitalen Währungen in Kraft getreten ist, und mit der aktuellen Entwicklung des digitalen Pfunds durch die Bank of England ist es unwahrscheinlich, dass Greshams Gesetz jemals wieder im wirklichen Leben gesehen wird.

Weitere wichtige Beiträge

Einer von Greshams wichtigsten Errungenschaften war die Schaffung der Royal Exchange, der eine Forum für die Transaktionen von Kaufleuten war, die davor ihre Geschäfte auf der Straße oder in überfüllten Geschäften abgewickelt hatten. Er konkurrierte mit der Antwerpener Börse, die damals die erste und größte Börse in Europa war. Der Royal Exchange wurde 1571 eröffnet und über 350 Jahre lang genutzt, bis er schließlich 1939 geschlossen wurde. Die Räumlichkeiten werden heute als Büro- und Ausstellungsfläche genutzt.

Er war auch stark in den Handelskrieg zwischen englischen Händlern und der deutschen Hanse verwickelt und überzeugte Elizabeth, 1557 die Zölle zu erhöhen und die Exportlizenzen für Rohwolle und unfertige Stoffe zu reduzieren, die deutschen Kaufleuten in der Londoner Werft erteilt wurden. Die Hanse revanchierte sich 1563 mit einem Embargo gegen englische Tuchimporte nach Deutschland. Dies war eine wertvolle Erfahrung für Gresham, da es ihm ermöglichte, die Position der englischen Händler zu stärken und neue Handelsabkommen mit Frankreich und Dänemark abzuschließen. Schließlich beendete Elizabeth auf Greshams Empfehlung 1579 alle Exportlizenzen an deutsche Kaufleute in London und beendete die Rolle der hanseatischen Händler in Großbritannien. Gresham unterstützte dann 1579 die englische Eastland Company, um direkt mit der Hanse in den skandinavischen Ländern zu konkurrieren.

In seinem Testament gründete er das Gresham College an der Stelle seines Herrenhauses in Bishopsgate. Es war 1597 als die erste Institution dieser Art eröffnet, die keine Studenten aufnahm und keinen Abschluss anbot, sondern der Öffentlichkeit kostenlose Vorlesungen anbot. Das Lernen wurde auf Englisch durchgeführt, was es zu einer weitaus zugänglicheren Bildungseinrichtung als die meisten anderen zu dieser Zeit machte (die meisten Universitäten lehrten damals in Latein). Das College existiert heute noch, und es gibt sowohl persönliche als auch Online-Vorlesungen, die verfügbar sind.

Sir Thomas Gresham ist eindeutig eine der einflussreichsten historischen Persönlichkeiten in der britischen Finanzgeschichte und einer der Menschen, die die frühen Grundlagen dafür legten, dass London das globale Finanzzentrum wurde, das es heute ist.

# The Story of Sir Thomas Gresham

Aditya Tiwary

One of the most influential figures in British economic history, Sir Thomas Gresham is best known as a merchant, financier and one of the wealthiest men in 16th Century England. His legacy can be seen not only with the founding of the Royal Exchange and Gresham college, but also with his contributions to our school: he granted the charter for the school's formation in 1573.

## Life

Born in 1518, he grew up in a family of renowned Norfolk cloth merchants who owned a cloth business in Antwerp. He studied at the University of Cambridge and went on to train as a lawyer. In 1542, he entered the cloth business himself after joining the Mercers' Company.

He eventually took over his family business in the Netherlands, trading in fine cloth and weapons. While in the Netherlands, he was appointed royal agent in Antwerp, where he was responsible for managing the English royal debt in European markets. In this position, he was able to observe the economic impact of the 1550s debasement of the Pound, which he would eventually go on to resolve.

In recognition of his services in Europe, he was knighted and became the principal economic adviser to Queen Elizabeth I. His first task was to create a plan to curb inflation in England and stop the depreciation of the English pound, which he managed to accomplish through his understanding of 'Gresham's law'.

Thomas' father, Richard, had the idea to create a new establishment where merchants could meet to carry out business. Carrying on his father's legacy, Thomas Gresham laid the foundation stone of the Royal Exchange in 1566, which was eventually opened in 1571 by the Queen herself.

## Gresham's Law

Often paraphrased as 'bad money drives out good,' it is better phrased by economist Robert Mundell as 'cheap money drives out dear money only if they must be exchanged for the same price.' The law was attributed to Gresham in 1858 by Scottish economist Henry Macleod, although Gresham was in fact not the first person to produce this law: similar ideas were noted much earlier by Copernicus, Oresme, and Aristophanes.

The Great Debasement (1544–1551) was a currency debasement policy introduced by Henry VIII (and carried on by Edward VI) in which the amount of precious metal in gold and silver coins was reduced and eventually replaced entirely with cheaper metals such as copper. The objective was to maximise seigniorage – the profit accrued by the issuer of a currency (a £10 note does not cost £10 to make). Legally forced to treat both old, more precious coins and new, cheap coins as the same, consumers passed on their cheap coins as quickly as possible and held onto the old coins, since they did not believe that the new coins were of the same value as the old coins. This led to a debasement of the currency and a fall in its purchasing power.

Gresham explained this problem to Elizabeth, and he was then tasked with finding a solution. His idea was to withdraw all the 'cheap' coins from the economy and replace them with coins of higher intrinsic value (i.e. increase the proportion of precious metals in the coin). This was carried out from 1560–61 and resulted in seigniorage to the Crown of around £50,000. Gresham's solution improved commerce in England and led to the appreciation of the pound.

There have been several examples in history when this effect was recreated. For instance, during Revolutionary War in the USA (1775–1783), bad paper money, which was accepted as a method of payment at the time, drove all valuable gold and silver coins out of circulation. A more recent example was again in the USA in 1982, when the U.S. government changed the composition of the penny to contain 97.5% zinc, which made older pennies worth more than newer ones, although the face value remained the same. Due to the debasement of the currency and resulting inflation, copper prices rose from approximately \$0.6662/lb in 1982 to \$3.0597/lb in 2006, with the purchasing power of a penny falling by 80% in that same period.

In today's world, examples of Gresham's law are rare, because the global financial system has since 1971 (when Nixon took the dollar off the gold standard) transitioned to fiat currencies (currencies that are not backed by any tangible commodity). In fact, the proportion of transactions in cash in the UK has fallen from over 50% to under 15% in the last decade. Yet there have been no examples of Gresham's law coming into effect with digital currencies, and with the current development of the digital pound by the Bank of England, it is unlikely that Gresham's law will ever be seen in real life again.

### Other important contributions

One of Gresham's most important contributions to London was the creation of the Royal Exchange, which was a forum for the transactions of merchants, who had previously conducted their business in the street or in crowded stores. It provided competition for the Antwerp Bourse, which was at the time the first and largest exchange in Europe. It was opened in 1571 and was used for over 350 years until it finally closed in 1939. Its premises are now used as an office and exhibition space.

He was also heavily involved in the trade war between English traders and the German Hanseatic League, convincing Elizabeth to raise customs duties in 1557 and reduce the export licenses for raw wool and unfinished cloth granted to German merchants in the London Steelyard. The Hanseatic League retaliated by imposing an embargo on English cloth imports into Germany in 1563. This was a valuable experience for Gresham, as it allowed him to strengthen the position of English traders, creating new trade deals with France and Denmark. Eventually, at Gresham's recommendation, Elizabeth ended all export licenses to German merchants in London in 1579, ending the role of Hanseatic traders in the UK. Gresham then supported the English Eastland Company in 1579 to directly compete with the Hanseatic League in Scandinavian countries.

In his will, he founded Gresham College on the premises of his mansion in Bishopsgate. Opened in 1597, it was the first institution of its kind, offering no degree and taking in no students, but rather offering free lectures to the public. Learning was carried out in English, which made it a far more accessible educational institution than most others at the time (most universities at the time taught using Latin). The college still exists today, and there are both in-person and online lectures that are available.

Sir Thomas Gresham is clearly one of the most influential historical figures in British financial history, and one of the people who laid the early foundations for London to become the global financial hub that it is today.



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