



## The Role of Finance in Solving Global Issues and in the Transition to a New Civilisation

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### Abstract

*Finance is one of the fundamental tools that has underpinned and shaped global civilisation, alongside agriculture and writing systems. During the past 5,000 years finance has adapted and innovated to scale civilisation by funding industrial development, technological advancement and human progress generally. Given this traditional role, finance should play an essential role in supporting the solutions to the world's major challenges, including income inequality, climate change, mass migration, unsustainable resource consumption, among others. In the industrial era, finance was banker to industry, government and the military, among others, in its conquests. By the last quarter of the 21<sup>st</sup> Century, finance had become 'Big Finance' and was a major power bloc in its own right. Today, ever more sophisticated forms of finance have been highly innovative at financing itself, without directly touching an endeavour to invest in, and so streams of finance find themselves divorced from the world's challenges, rather than solving them, leading to a rise in calls for the need to reform and reinvent many of its tools and institutions. In the absence of reform from within, revolution from without has often addressed imbalances in other spheres of life and has carried with it substantial risks and costs. Looking ahead, as the world enters the information age, the internet is transforming finance into something digital, global, distributed, and disintermediated and this promises to transform it into something radically different than it is today. Current financial institutions have a choice of either being at the forefront of this transformation, launching their own reforms and revolution, to be relevant to the challenges and opportunities of the mainstream, or risking being swept away. This paper is intended to provide a high-level conceptual overview of the history, challenges and questions facing finance as the world transitions to the next world order.*

### 1. Money, Finance and Civilisation

Money, as a proxy for assets, has risen to become one of the main reasons, arbiters and mainstays of war and peace. Plenty makes one want peace but also, it seems, to want more, leading to war, and times of scarcity make one want more and may also lead to war (although people find a multitude of reasons to wage war), which in turn, if war is successful, may lead to plenty (but rarely does for developing nations).<sup>1</sup> Importantly, finance is subtly, but importantly, different from money. Finance is the system of provision of money, most

commonly as an investment, that is, with the expectation of a return, to enable an objective or need to be satisfied.

Like agriculture and writing systems, finance is one of the fundamental tools that has underpinned and shaped global civilisation. Civilisations are built through surpluses that enable labour specialisation and investment.<sup>2</sup> At the most basic level, finance facilitates both the investments that create surpluses and the trade that distributes them. Of course, the efficiency, effectiveness and equity of these processes can be disrupted by force, at least for a period, until the costs of doing so outweigh the benefits. At that point, changes to address the imbalance (often called injustices) arise and these can be revolutionary if the systems that regulate finance and capital, governments in today's world, fail to change themselves.<sup>3</sup>

Money's dual function as both a store of value and a medium of exchange, has evolved significantly from bills of receipt for actual goods, through to coinage with 'intrinsic' value, banknotes backed by commodity reserves, government fiat money and today's decentralised digital currencies, in order to meet the ever changing needs of our increasingly complex societies and civilisation.<sup>4</sup>

During the past 5,000 years, finance (including the financial markets, their participants and the instruments they employ) has adapted and innovated to scale civilisation through financing industrial development, technological advancement and human progress,<sup>5</sup> as well as conflicts and war. In particular, following the Industrial Revolution, the world population has grown from fewer than 800 million to 7.8 billion today,<sup>\*</sup> and world output has grown from US \$500 billion to US \$86 trillion.<sup>†</sup>

## **2. Challenges and Innovation**

Seen through the lens of civilizational progress, each era of humankind and the transitions between them have been made possible by financial innovations that funded commerce, science, art and war and all the endeavours of humanity.<sup>6</sup> The art of the Renaissance was financed by Italian merchant bankers who had created massive wealth on the basis of the modern holding company and letters of credit (not to mention double entry bookkeeping to oversee their growing financial enterprises).<sup>7</sup>

The breakthroughs of the Scientific Revolution of the 17<sup>th</sup> Century were enabled by the wealth created by burgeoning international trade, facilitated by joint stock companies and financing by central banks and a national debt.<sup>8</sup> The Industrial Revolution, a century later, brought the world modern exchanges, bond underwriting and building societies.<sup>9</sup> Colonialism, financed by the wealthy public as an investment, was also a major source of finance for empires to build the beautiful European cities that survive to this day.<sup>10</sup> In the 20<sup>th</sup> century, particularly following two wars that wreaked havoc on the European powers, the colonial model was ready to be superseded by a new model built not on land acquisition and occupation but trade and multinational corporations and it saw the rise of the most effective at that endeavour, the US plant the US dollar as the international reserve currency, it also

\* United Nations Department of Economic and Social Affairs

† New Maddison Project Database, World Bank

saw the creation of global financial institutions, regional financial zones, personal credit, derivatives and futures contracts and hedge funds.<sup>11</sup>

Through these eras, the world has transformed beyond recognition many times over as new developments have opened up new opportunities but also brought new challenges. Today, in the early 21<sup>st</sup> century, the world can look back at 75 years of unprecedented progress. We are living in a world in which global literacy has increased from 50% to over 85%, in the past 50 years,\* war-related deaths per capita are 80% lower than they were 40 years ago,† violent crime is down 50% over the past 30 years,‡ childhood mortality has halved in just the past 20 years,§ and nearly 80% of the world’s population live in at least partially democratic countries.¶ Stepping back, the world today has more peace, prosperity and freedom than at any other time in human history.<sup>12</sup>

Figure 1: A History of Financial Innovation\*\*



\* UNESCO UNDP Human Development Reports

† Peace Research Institute Oslo (PRIO) Battle Death Data

‡ Uniform Crime Reporting program, United States Federal Bureau of Investigation

§ United Nations

¶ Polity IV Project, Center for Systemic Peace

\*\* Adapted from multiple sources, including: Kurt Schuler, Office of International Affairs at the United States Department of the Treasury, Senior Fellow of Financial History at the Center for Financial Stability.

However, the 21<sup>st</sup> century has also seen the increased sophistication of finance give rise to finance for finance's sake. In this regard, money can make money from finding and exploiting inefficiencies in the financial system. As computational capabilities have grown, hedge funds and other specialists have become increasingly sophisticated at finding inefficiencies and arbitrage opportunities. This clearly reduces the inefficiencies identified but often these inefficiencies reappear for exploitation by the same sophisticated players. However, one class of such strategies, high frequency trading, based on algorithms operating across markets not only addresses inefficiencies, it creates shocks rapidly from one market to the next, creating new risks for the system as a whole.<sup>13</sup> The disparity of information and sophistication and opportunity between the best of the hedge funds and other investors create a win-lose for 'ordinary' investors who are either focused on the use of capital to invest in productive assets rather than inefficiencies or are just not as skilled at handling such complex trading activities.

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*“The record bail-outs and stimulus packages implemented across the globe in response to the coronavirus pandemic have demonstrated that there is no lack of capital to solve big problems, and governments have indicated their willingness to effectively print money in zero-interest rate environments, creating an opportunity for the scaled and coordinated application of financial resources to solve major problems in the world today.”*

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Financial participants have also innovated to create solutions to finance riskier investments, often called sub-prime, in the form of 'securitisation' of assets, essentially bundling different risks in packages that can then be distributed across financial buyers. While this has helped to finance the poor to buy houses, for example, it has spread the risk across the world and when the risk has materialised, it has caused a world-wide crisis, the last being the global financial crisis of 2008.\* So, in the early part of this century, this very sophisticated form of finance has become both a source of solutions as well as a source of risk.

Given finance's most positive traditional role as a facilitator of growth and development, it has an essential role to play in addressing the world's fundamental challenges. The world today faces existential risks to human life. These include the following:

1. ***Rising income inequality between and within countries.*** The world is deeply divided in terms of income distribution, both across and within countries. North America, for example, has less than 5% of the world's population but is home to over a third of its total wealth. And within the US, the top quintile of households owns 52% of the total

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\* The Financial Crisis Inquiry Report (2011) Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States; The Global Economic Crisis: Systemic Failures and Multilateral Remedies (2009), Report by the UNCTAD Secretariat Task Force on Systemic Issues and Economic Cooperation

wealth, up from 43% in 1968.<sup>14</sup> This has become a cause of widespread protest and political upset.<sup>15</sup>

2. ***Information revolution replacing the industrial age.*** The replacement of manufacturing by knowledge creation as the primary driver of economic value is ongoing, with the explosion of connected devices and data accelerating the growth of the knowledge economy.\* This shift is not only driving the growth of tech-related industries but also disrupting older industries through automation, substitution and rationalisation, leading to significant economic dislocations across the world.
3. ***National populism and democracy.*** Despite its long term upward trajectory, global democracy as a whole has declined in the past decade,<sup>16</sup> in part due to the emergence of authoritarian and national populist leaders who tapped into widespread fears about many of the world's current challenges including a lack of economic opportunities and the perceived threat to national cultures from migration, alongside a declining faith in the existing political institutions that have failed to address these issues.
4. ***Successive and global protests and political unrest.*** The global retrenchment of democracy has not gone unopposed (or protest in favour of less democratic leaders) and nor has the perceived unresponsiveness of governments to the world's major issues, giving rise to increasing social and political unrest, with protests leading to revolutions in many cases. The Arab Spring earlier in the decade gave way to Brexit in the UK and protests for and against President Trump in the US, as well as the ongoing mass protests against Chinese encroachment on the rights of Hong Kong.
5. ***Climate change and environmental degradation.*** The US aside, climate change is now universally recognised as one of the biggest existential risks to humankind and is an increasingly urgent one.† With market forces alone unable to address the issue, most governments and societies have now recognised the need for immediate action, although execution to date by most countries lags the commitments made in the 2015 Paris Agreement.<sup>17</sup>
6. ***Mass migration from poor to rich and unstable to stable regions.*** There are over 70m displaced people and refugees in the world today and they are on the move in numbers not seen since World War II.‡ Driven by economic, political and environmental factors, an unprecedented number of migrants are seeking safer and better lives in developed countries, leading to political crises and security concerns not just in the destination countries but also the transit countries along the way. To this transnational migration comes perhaps an even bigger flow within countries into cities, with the global urban population expected to grow from 4.2 billion today to 6.6 billion by 2050, placing massive stress on infrastructure and societies.§

\* The market capitalisation of the top 50 manufacturing companies has grown at an annual rate of 8.6% since 1990; the top 50 tech companies have grown at 16% annually and are currently worth 3x their manufacturing peers.

† Pew Research Center, Ipsos Mori

‡ United Nations High Commissioner for Refugees (2018) "Global Trends Forced Displacement in 2018"

§ United Nations Department of Economic and Social Affairs, (2019) – *World Population Prospects 2019: Highlights*

7. ***Population and resource consumption leading to planetary resource depletion challenges.*** Current levels of global resource consumption are clearly unsustainable, particularly given the rapid growth of a developing world that can increasingly afford ‘Western’ style consumption patterns: For the global population to lead lifestyles with US level per capita consumption we would need to exploit the resources of five Earths, rather than one we have available.\*
8. ***Health and pandemics posing global and national security crises.*** The coronavirus pandemic has exposed the world’s lack of preparedness to deal with scaled healthcare disruptions. Even the richest nations have lacked the medical infrastructure and resources to effectively contain an outbreak of the current magnitude and to properly treat its victims. Further, much of the world has proven incapable of responding rapidly and in a coordinated fashion, scrambling in competition with one another for now scarce resources.
9. ***Great power rivalry setting the stage for geopolitical instability.*** Finally, the ongoing withdrawal of American leadership of the liberal order and the increasing tensions with an increasingly assertive China are creating geopolitical instability.<sup>18</sup> Trade wars, Chinese expansion in the Indo-Pacific region, and mixed messages by the US about the continued value of long-term security partnerships are leading to increasing political and security risk in many of the world’s most critical regions.
10. ***Need to find alternatives.*** With the accelerating depletion of key global resources, societies are faced with the prospect of catastrophic gaps that will lead to conflict and scarcity which may force demand levels down to match dwindling supplies.<sup>†</sup> The world will need to innovate and develop alternative sources of energy, materials and consumables to bridge this gap while managing demand in order to bridge the world to a more sustainable future.

Solving these global issues will require coordinated actions across countries, governments, markets, communities and individuals on a scale that has seldomly been achieved. Finance, alongside technology and innovation, is among the most critical tools to be utilised in developing and executing solutions to the greatest challenges facing the world today. While finance has historically been most heavily used in the pursuit of endeavours of an economic nature, and has developed most rapidly within capitalist settings where the goal has been profit maximisation, it can of course be applied for any purposes narrow or broad, large or small. For example, the UN estimates that achieving its 17 Sustainable Development Goals by the 2030 deadline will require US \$5-7 trillion of annual investment across sectors and industries.<sup>‡</sup> Without modern financial markets and financial institutions, it would be impossible to source, aggregate, structure, deploy and monitor the necessary funds to do this. Further, the record bail-outs and stimulus packages implemented across the globe in response to the coronavirus pandemic have demonstrated that there is no lack of capital to solve big problems, and governments have indicated their willingness to effectively print money

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\* Global Footprint Network (2018), Public Data Package

† United Nations Interagency Framework Team for Preventive Action (2012) *Renewable Resources and Conflict*, Toolkit and Guidance for Preventing and Managing Land and Natural Resources Conflict

‡ <https://www.un.org/pga/72/wp-content/uploads/sites/51/2018/05/Financing-for-SDGs-29-May.pdf>

in zero-interest rate environments, creating an opportunity for the scaled and coordinated application of financial resources to solve major problems in the world today.

### 3. The Transformation of Finance to Solve Problems and Create the Next Civilisation

However, the world is not only facing challenges, it is also facing opportunities that will define the next civilisation. These include laying the foundations for the next part of man's journey including innovations that change the scale, reach and character of humanity and its civilisation, of which a few suffice to illustrate the dramatic nature of the changes ahead:

- **The New Space Race.** The original space race in the 1960s put man on the moon and gave us countless innovations that have transformed our lives, including GPS, laptops and LED lighting to name a few. In the next phase of the Race currently being initiated, humanity will expand its footprint beyond the planet, opening up new commercial opportunities and leading to a new wave of transformative innovation.
- **A New Energy Source.** While one third of global power capacity is now based on renewable energy,\* current technologies suffer from technological and practical restrictions that will limit their ability to fully replace fossil fuels with renewable energy. This will require the innovation and exploitation of a new energy source, one that is clean, cheap and abundant and importantly enables a transformation of the capability of machines that it can support, just as oil enabled far more functional machines than steam, and so far greater scale and sophistication of civilisation.
- **Artificial Intelligence.** From self-driving cars to digital assistants, artificial intelligence is becoming increasingly pervasive to modern life. With machine learning continuing to develop rapidly, AI has the potential help people solve more significant, more complicated problems, supporting innovation and improvements in the quality of people's lives generally. A future is already conceivable where machines and humans share innumerable functionalities, in the form of implants and extensions of the physical self, implying changes to how people and societies function along every dimension.

For tools to be effective they need to be fit for purpose, and the vast majority of today's financial instruments, financial institutions and financial markets have been purposed for the industrial era to maximise direct wealth creation, rather than the achievement of more universal and long-term goals. One important consideration is whether reorienting finance towards objectives other than making financial returns, will make it inefficient, ineffective, and inequitable and whether straying from these will undermine society in the way that the tools favoured by communism, including planned economies, state-owned enterprise and price setting, proved to not create as many surpluses as more capitalist societies in the last century.<sup>19</sup> Solving global issues therefore will require innovation not just in the application of finance, but also in innovation applied to finance itself to avoid the pitfall of making it an ineffective tool.

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\* International Renewable Energy Agency, 2019 Renewable Capacity Statistics

The challenges and opportunities that finance will need to be fit to support addressing core issues fall into three broad categories:

1. The solving of global problems that arise or are exacerbated through negative externalities, such as climate change, resource shortages and mass migration, including the issues caused by the financial system itself.
2. Narrowing the gap between rich and poor, primarily by reducing poverty without diminishing the rich, inclusion not exclusion.
3. Financing the future, scientific and technological breakthroughs that form the basis of a new civilisation.

For finance to provide the basis of the next civilisation, the global and local society will need to re-engineer the global system of not just finance but how politics, economies, societies and individuals work and measure success.

Solutions that transform and redefine the relationships that define the contract between stakeholders in the world. Examples of the types of solutions illustrate the near impossible task of finding world leaders to take these forward or fitting them neatly into agendas of nation-states or international institutions:

1. ***Relationship between capital and the world.*** *Regulated/Mandated Responsible Capitalism* criteria for participating countries to push each nation's financial industry to establish ESG criteria and write their regulatory framework (comparable: Basel Accord for finance and business)
2. ***Relationship between the old industrial base and the new technology world.*** *Western Marshall Plan* for Restructuring the Old Industries particularly in the industrial West to adapt to the new technological and information era (comparable: Marshall Plan of 1948)
3. ***Relationship between business and the environment.*** Governments to finance (directly and through tax exemptions) *Corporate Self-Destruction* if companies embrace and finance alternatives to "harmful" industries rather than wait to go out of business (comparable: widespread tax investment laws)
4. ***Relationship between rich and developing countries.*** *World Development-Dollar* in a deal where rich nations buy goods from the poorer ones for the dollars to flow back to the rich nations as investments (comparable: 'Petro-dollar')
5. ***Relationship between individuals, the state and international institutions.*** The new globalisation recognising *The Individual as 'Nation State' and a 'Multinational Corporation'* by enabling mass micro-entrepreneurship using online technology (comparables: entrepreneur models on eBay, Amazon trading platforms)
6. ***Relationship between people and the workplace.*** *Mass Distributed Work* and its financing, enabling work from home for product and services (comparable: old fashioned industrial piece work)

7. ***Relationship between people.*** *Democratisation of Money*, with formal regulated peer-to-peer exchanges (comparables: stock exchanges, crowd sourcing, mobile peer-to-peer systems)
8. ***Relationship between peoples across the world to solve problems.*** *Collaborative Innovation and Finance technology platforms* to enable collaborative solutions to issues and problems, provided for general issues by new enterprises and for specific issues by major corporates, NGOs, governments (comparable: MS Teams in corporations)

For such innovative projects to be more than projects, albeit radical in nature, one would need to change the system itself, of which finance is a part.

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*“The transformation underway represents a change in character, not just capability to match the new global system that is emerging.”*

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Finance is an essential ingredient—alongside science, technology governance, security, commerce and industry—without which civilisations cannot be built. In history, it has been different from the other ingredients, in that it underpinned the others as the one ingredient without which the others could not survive. Where society has seen finance as the enemy, it has failed to create thriving economic societies, and failed to have financial surpluses for cultural, technological, healthcare and social development too. However, where societies have allowed it to operate without limits, it has caused crises as it stops serving society and turns inward to serve itself. This poses one of the challenges to changing finance. It is unclear whether an external agent will or even can architect the new financial system. The risk of getting this wrong provides a strong incentive for the financial community to change itself rather than wait for it to be made for them by regulators or customers and the environment. This is particularly true since the financial community is now a partner, not merely a banker, it is ‘Big Finance’. This requires a very different approach to engaging the financial community than the one adopted during the industrial era.

In the industrial era, finance was banker to industry, government and the military, among others, in its conquests. By the last quarter of the 21<sup>st</sup> century, finance had become ‘Big Finance’ and was a major power bloc in its own right. The constituents were mutual fund managers, private equity funds, hedge funds, sovereign wealth funds and investment banks that were financial conglomerates.

Looking ahead, at a future that has already begun, Big Finance is about to face its own revolution, and it is not well prepared for this, which is usually the case with powerful incumbents. In the information era, which we are in now, the internet is democratising finance by making it digital, global, disintermediated and distributed, and this will transform it into something radically different from what it is today. The current financial institutions

will of course invest in this new model of finance and either be transformed in the process or finance their future rivals.

The evolution of finance to this new model is a natural one and like other evolutions is a result of changes in the environment that leave those that have a superior ability to survive to spread. Finance will not be able to stand in the way of this information age financing model any more than agricultural financing models could resist the industrial financing models needed to fund factories, ships, trade, empires and multinationals. The question for the incumbents is whether they can change quickly and radically to meet the challenge of relevance by solving the biggest problems facing the world, helping the spread of technology throughout the planet, and in endeavours beyond, and building the new world that is emerging on top of the old. History shows that such changes are nearly impossible for incumbents. It will be more challenging given the transformation underway represents a change in character, not just capability to match the new global system that is emerging.

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