"Risk, Equality And Opportunity - The Roles For Government Finance"

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Barnard's Inn Hall, London EC1N 2HH

recording available at
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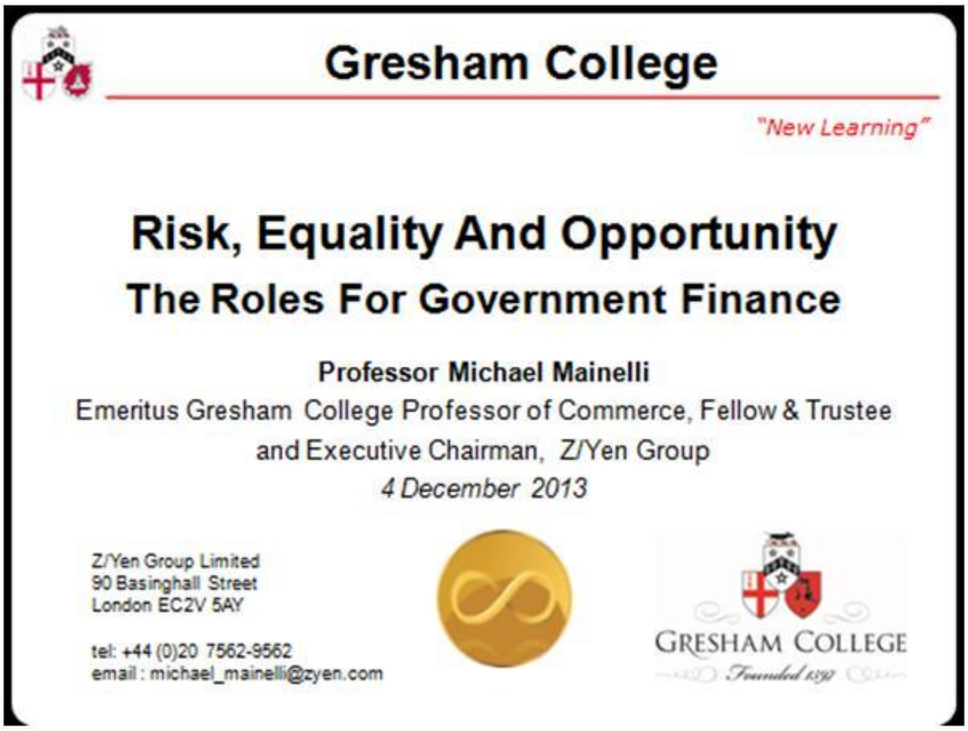

Overview

Adrift and barely floating amidst financial crises, governments claim that they cannot afford to deliver on all their promises. Necessity has brought forth new views on government finance and how it can be used to achieve social ends. Many of these views are redressed mutton. Some are more or less just off-balance sheet accounting. Others prompt new thoughts about the role of the state. We will explore various roles for government finance and discuss how radical ideas and new monies may help governments better manage our longer-term future.

Good evening Ladies and Gentlemen. Government finance can affect social outcomes in many ways beyond simple expenditure. When our previous registrar, Barbara Anderson, in her stylish way, put this lecture title in the programme, she included a circumflex over the "o" in rôle. While Cambridge University is now emphatic that there is no circumflex, Barbara's edit prompted me to try and find the silent letters the French had dropped. The etymological chain appears to start with the Latin 'rotulus', a rolled parchment which included parchments used for actors and their lines. Via the Vulgar Latin 'rollus' and various French usages 'rolle', 'role', 'roole', 'roule', the French move to a single 'l' and we finally arrive at the modern role without a circumflex. And yes, tonight is about acting. The state is an actor in finance, so what roles can it take? As we say in Commerce, "To business".

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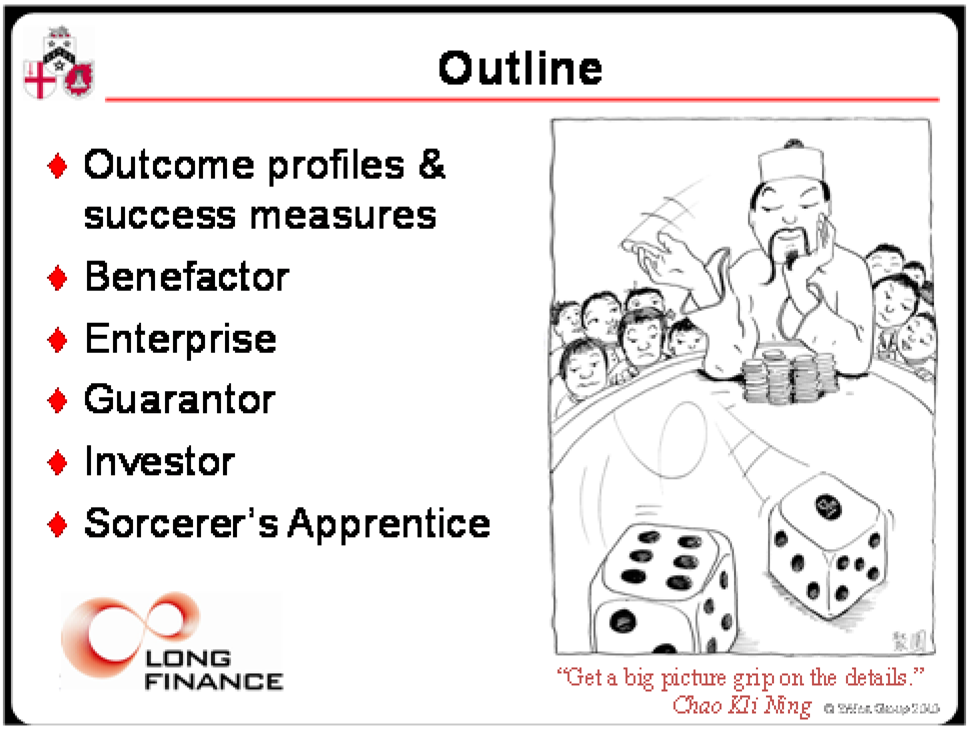

So what's in store? A number of friends were expecting a who, what, where, why, when, how on taxation.
Who – the evil grasping hand of the state;
What – crazy taxation;
Where – far too many places;
Why – governments overspending and under-delivering;
When – will never change.
I already gave a lecture on corporation tax and income tax[1]. So not tax tonight. Previously at Gresham College, we've also discussed the size of the state. UK government, where tax is 39% of GDP and spending is over 47% of GDP, has become an enormous economic actor. By way of comparison, in 1900, government spending was only 12% of GDP. Societal finance is a rich mix where the quick public sector-private sector divide is dangerously simplistic and we have the richer offerings of philanthropy, the third or voluntary sector, social enterprise or charities. I thought I'd quote Julian Unwin, Chief

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[1] Probably the radical tax policy that would best work in the long term is to refocus on land taxes, but I set out the basic tenets of a still-radical medium-term tax policy as [Michael Mainelli, Gresham College - "Corporation Tax Or Income Tax: Which Is The Greatest Con?" - London, England (22 January 2007)]:

- flat (or very few levels of) tax based on consumption;
- guaranteed minimum income (rather than benefits, which also simplifies the tax code immensely);
- eliminating the fiction of corporation tax;
- possibly letting people 'vote' their taxes or percentages of tax expenditure.

That said, I sympathise with Alastair Darling on a BBC programme – "If someone can think of a popular tax, they should phone up and let us know." [towards the end of … BBC2, 23 November 2011, Nick Robinson, "Your Money and How They Spend It"]

Executive of The Joseph Rowntree Foundation here at Gresham College earlier this year, for a bit of balance:

> *"But what we also know in our hearts is that when we look at some of the big changes in our society – the emancipation of women, the creation of the NHS, the development of a viable transport infrastructure, the introduction of National Insurance and a system of universal social security, the drive to improve public health, the massive post war house building programme – democracy has been important, but money too has spoken. The state has had its way, but so too has the market, and historians and political analysts can debate in detail which came first, and which allowed change, but we, the spectators of social change, know that there are two ways to change the world. One is by being elected and the other is by having a lot of money."*
> *[Julia Unwin, "Philanthropy Then, Philanthropy Now", Thursday, 29 March 2012 - 6:00pm*
> *http://www.gresham.ac.uk/lectures-and-events/philanthropy-then-philanthropy-now]*

But not size tonight. We could talk forever about numerous ways in which the process of government affects us. What do we mean by consultation, how is scientific evidence used by government, how does the nature of government procurement affect industry structures? We have previously touched on the complexity of managing government. Milton Friedman sardonically noted, "If you put the federal government in charge of the Sahara desert, in five years there'd be a shortage of sand". But not management tonight. In a popular book, Felix Dennis remarks – "Keeping costs down is vital in any business except government (how I *wished* I owned a government)..." [*How to Get Rich: The Distilled Wisdom of One of Britain's Wealthiest Self-Made Entrepreneurs*, Ebury Press (2007), page 222] But not spend tonight. So, not government tax, size, management or waste - with such a leviathan of a subject, I want to explore the ***how*** of government finance. What are the financial mechanisms government can use to achieve outcomes?

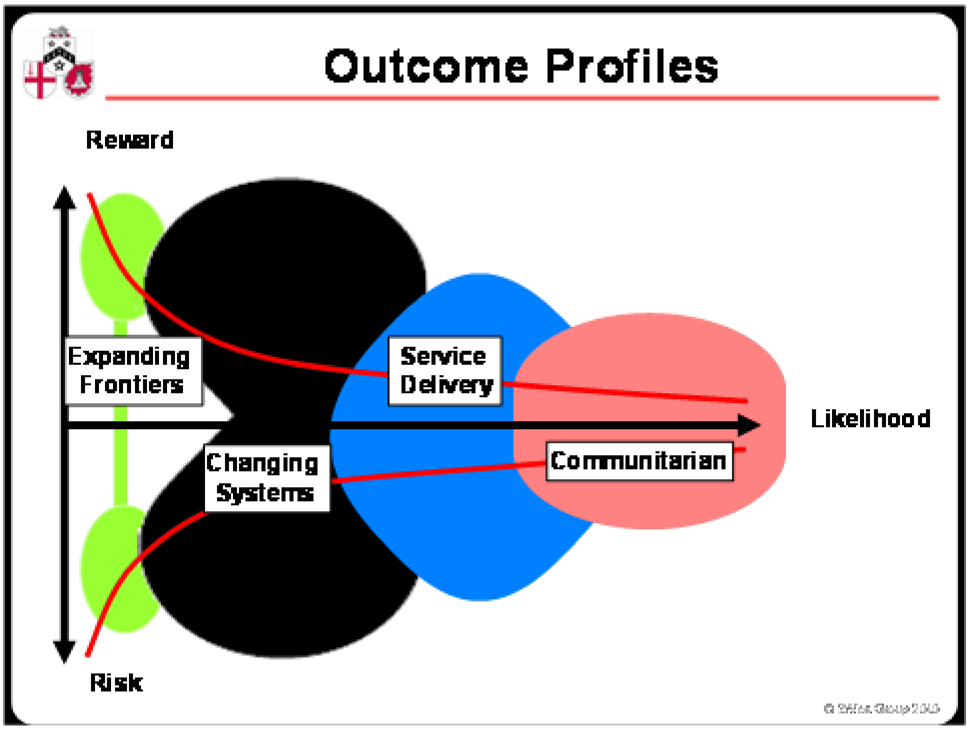
Framework for Government Finance

Role	Expanding Frontiers	Changing Systems	Service Delivery	Communitarian
Reward Enhancement	Invention	Transformation	Enhancement	Happiness
Volatility Reduction	Policies	Standards	Quality	Cohesion
Risk Avoidance	Research	Prevention	Benefits	Welfare

I hope to leave you with a framework of 13 outcomes and types of government finance. Don't worry, I intend to build it up slowly so that hopefully you can remember it. I'll give you a peek just now, but we'll build back up to it at the end. From this we shall deduce five roles for the actor of government – benefactor, enterprise, guarantor, investor and sorcerer's apprentice.

Too often we look at government finance in the way of a household, a combination of Dickens and Thatcher. Lady Thatcher's, "Any woman who understands the problems of running a home will be nearer to understanding the problems of running a country." Dickens' Wilkins Micawber in ***David Copperfield*** (1850), "Annual income twenty pounds, annual expenditure nineteen pounds nineteen and six, result happiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery."

This cash approach is too simplistic, not least because government has a special position and can do a lot of things a household can't; though that doesn't mean it has to, nor that Dickens and Thatcher aren't correct in the long run. Lady Thatcher also said, "The problem with socialism is that you eventually run out of other people's money". But how can we achieve social goals without being dangerously profligate? It's not just about spending. We lack a handy taxonomy for the various government finance mechanisms available and a way of aligning them with objectives. Anyway, to build our framework, we need to explore the two axes.

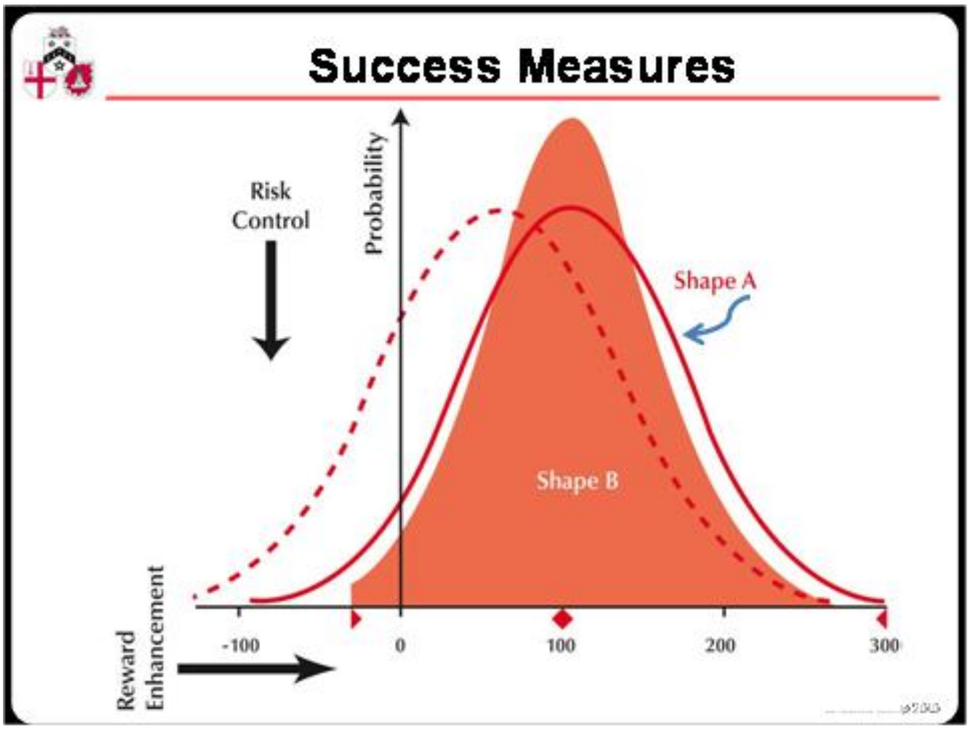


The first axis is that of possible and desirable outcomes. We explored this axis back in 2008 when I presented some of our firm's research into Evidence of Worth. We postulated four generic outcomes.

- expand frontiers to solve a problem - e.g. developing new drugs which might cure and/or prevent disease, an anti-meteor protection system;
- change systems to develop markets or to release resources - e.g. the introduction of cap-and-trade carbon markets, or paperless government;
- deliver services to address the immediate need - e.g. delivering primary education or health;
- build community to help people deal with problems through communal activity – this may sound "Big Society" but has paid dividends in the past, e.g. vigilance against terrorism, tidy country campaigns, anti-drink driving and anti-smoking social influence messages.

The diagram emphasises that we move from high reward and high risk on the left, to low reward and low risk on the right. Activities involved in expanding frontiers, such as finding a cure for a killer disease, will probably result in high reward or high risk. They either spend lots of money to cure the disease or they spend lots of money but fail. Middling outcomes are unlikely and this type of activity is often best analysed financially as an option. Activities involved in changing systems are also relatively high risk and/or high reward activities, for example the initial introductions of universal vaccination. Service delivery involves lower risk, lower reward activities than expanding frontiers and changing systems. Service delivery responses are most amenable to cost/benefit analysis. It is very difficult to define objectives and prove outcomes from communitarian activities. Volunteers or activists are often a mixture of supporters and beneficiaries, or both. Communitarian activities therefore tend to be relatively low risk and low reward and are best evaluated by seeing whether people want to pay membership costs.

Many activities fall into more than one of the above categories. Indeed some organisations, such one charity for the blind I know, clearly perceive themselves to undertake activities in all four categories - expanding frontiers: research into blindness; changing systems: lobbying for changes in legislation; service delivery: providing goods and services to the blind; communitarian: promoting a sense of belonging. And it is clear that government does all these things from sponsoring research, to developing new policies, to delivering services, to trying to organise communities. We could provide a lot of comparisons with other countries showing that the scale of government varies widely across the world and that people and governments arrive at a wide variety of outcomes.



The second axis starts to distinguish success measures - risk control, reward enhancement and volatility reduction. Again, we explored an earlier version of this slide back in 2006 and laid out three generic strategic activities. We started with the premise that we wanted to do something about a problem. Imagine we're a government looking at the dotted line of probable outcomes. At the moment we could have an outcome we value at 50 on average, but things could range from -175 to 250. To move to the more attractive solid line of shape A there are three generic things we can do. The first generic activity is [1] risk control: we eliminate particularly adverse outcomes. We lop off the left and perhaps make our worst case -30. The second generic activity is [2] reward enhancement. We move the curve to shape A. We make the average upside much better, perhaps an average of 100 with potential returns up to even 300. Finally, and more subtly, the third generic activity is [3] to reduce volatility. We can deliver more consistently and thus 'tighten' the range of possibilities. Some actions that increase costs are still good financial bets if they reduce volatility, one example might be national defence. All three generic activities, risk control, reward enhancement and volatility reduction, combine to help from a starting range of –175 to +250 with a mean of 50 to a range of –30 to +275 with a mean of 100, and a much higher likelihood of hitting that mean.

This slide emphasises one of the classic debates on the role of government – equality of opportunity versus equality of outcome. We might all agree to join forces to avert disaster through risk control, but we are often divided on whether to enhance rewards or reduce volatility. Equality of opportunity proponents are quite happy to spend some government monies to increase opportunities, i.e. shape A. Equality of outcome supporters want to spend money to reduce volatility of outcome, i.e. shape B. It's the lottery of life brigade favouring shape A against the postcode lottery brigade favouring shape B.

Dirty Dozen

Role	Expanding Frontiers	Changing Systems	Service Delivery	Communitarian
Reward Enhancement	Invention	Transformation	Enhancement	Happiness
Volatility Reduction	Policies	Standards	Quality	Cohesion
Risk Avoidance	Research	Prevention	Benefits	Welfare

When we combine the two axes we create this 12 part taxonomy of outcomes. The more alert among you may be getting a bit panicky about time. You've seen a speaker go through 12 points in turn, and I warned you that I had 13. I'll whizz through the first six objectives of government finance to stay on track.

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Communitarian

Role	Expanding Frontiers	Changing Systems	Service Delivery	Communitarian
Reward Enhancement	Invention	Transformation	Enhancement	3 - Happiness
Volatility Reduction	Policies	Standards	Quality	2 - Cohesion
Risk Avoidance	Research	Prevention	Benefits	1 - Welfare

Communitarian outcomes are those with less risk and also less reward, for example, from bottom to top:
1 – Communitarian welfare – basic food, shelter and emergency health;
2 – Communitarian cohesion – parks, libraries, museums and other shared cultural resources;
3 – Communitarian happiness – special celebrations and events, might I pick out the Queen's Jubilee and Olympics in this past year – as Juvenal termed it, "panem et circenses", "bread and games".

To a large degree, these three outcomes are about spending money to reach acceptable social norms. All of these outcomes are typically expenditure-based, and all are tough to measure. This communitarian column constitutes our first role for the government actor – that of benefactor.

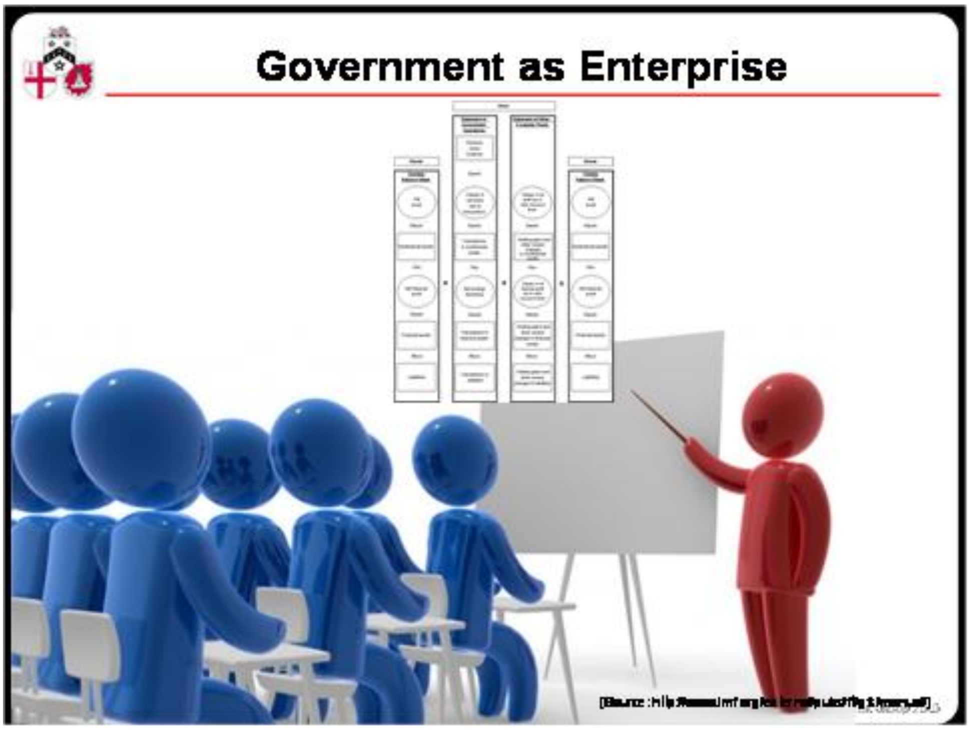
"Upon this point all speculative politicians will agree, that the happiness of society is the end of government, as all Divines and moral Philosophers will agree that the happiness of the individual is the end of man." [John Adams, Thoughts on Government, April 1776, Papers 4:86-93.] Perhaps it's little surprise that governments round the world are trying harder and harder to measure things like 'happiness' to prove that this money is well spent. Focusing on the communitarian leads to viewing government as a big cuddly sugar Daddy or an overgrown village community chest. It pays for the poor, keeps up the public spaces and throws a fête once a year. Here government finance is to take the tithe and spend it. Though as my friend Richard Titchener says somewhat caustically, "If you had a community, you wouldn't need a community centre." We'll turn to semi-coercive communities later.

Service Delivery

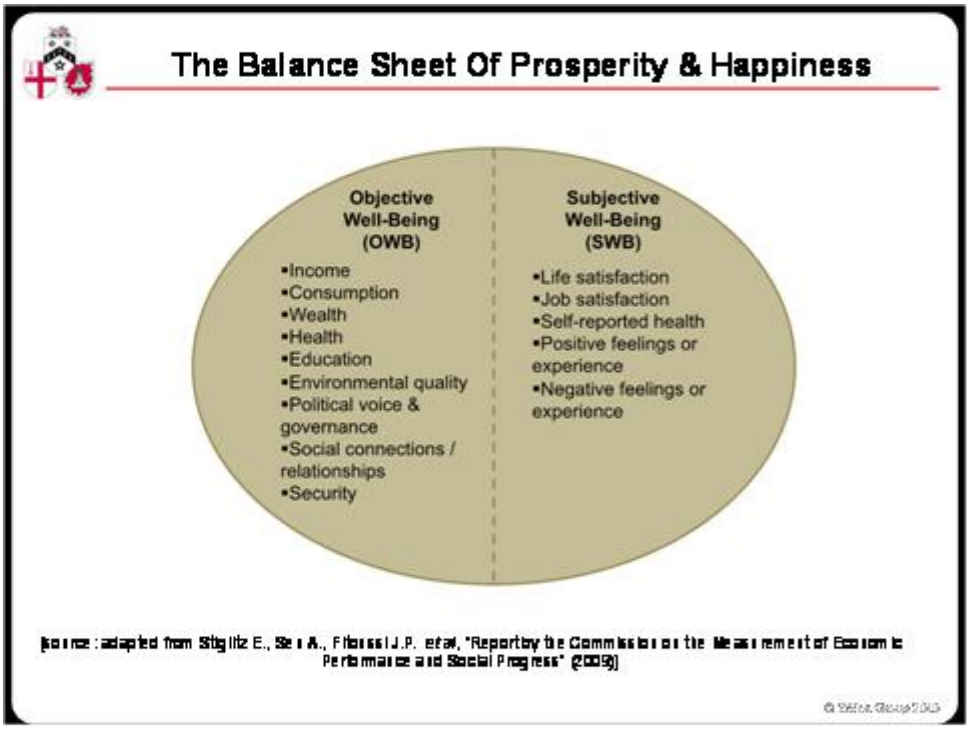
Role	Expanding Frontiers	Changing Systems	Service Delivery	Communitarian
Reward Enhancement	Invention	Transformation	6 - Enhancement	Happiness
Volatility Reduction	Policies	Standards	5 - Quality	Cohesion
Risk Avoidance	Research	Prevention	4 – Benefits	Welfare

The second set of three outcomes tends to occupy a lot pub and dinner party conversations about the role of government. Again, from bottom to top:
4 – Service delivery of benefits – disability and unemployment, catching people in the ‘safety net’ they are ‘owed’, as opposed to the presumed charity of ‘welfare’;
5 – Service delivery of quality – the direct delivery of services such as education, health, roads, post, but in earlier times and other governments outside the UK, water, oil, coal, gas, or telecommunications;
6 – Service delivery of enhancement – improvements and amenities above and beyond basic communitarian cohesion, opera houses, Millennium Domes.

These three outcomes dominate pub chats because people differ on which ones should or shouldn’t be done by the state. Ideologically, many people conclude that they should be left to the market, others that they should be owned by the state. And we have changed our minds at many points in the past, and probably the future, about who is responsible for these ‘utilities’ or ‘public goods’ and who should gain the rewards, if any, from providing them. Further, these can be charged services, or charged but subsidised. Service delivery outcomes are where economy, efficiency and effectiveness measures can be more readily applied, unlike the communitarian outcomes, leading to even richer (richer = more heated) discussions in the pub.



This service delivery column constitutes our second role for the government actor – that of an enterprise, undertaking direct work. Focusing on service delivery we tend to compare government with either business or the military, or a bit of both combined. Our 'civil servants' – though perhaps calling them 'servants' all the time may well explain why a few are not so 'civil' – are there to be judged through the eyes of a customer or an efficiency-obsessed management consultant. One of the first things people note in practice is that state enterprises often lack competitors. State provision shouldn't necessarily mean uncompetitive provision, and there is a significant body of evidence showing that competition can help to manage state enterprises better. Even so, government enterprises are financially different from business enterprises. First, businesses use accruals accounting. Politicians are like everyone else, they respond to the numbers they have. But government accountants typically use cash accounting or something quite close. Cash accounting ignores long-term liabilities. You think you're in the black, but in reality you're just building up future crises.



Second, businesses have balance sheets. Since the 1990s significant efforts in the social, environmental and economic sciences, as well as within governmental and supranational institutions, have centred on how to complement well-established national account indicators, particularly gross domestic product (GDP). Attention has focused on how well-being can be measured in a comprehensive sense that captures the social, environmental and economic dimensions which feed into it. Natural capital models try to create a balance sheet for government to produce better long-term decisions. Some indicators, for instance education and health, can be used to assess objective well-being, while people's perceptions of happiness might measure subjective well-being.

A big concern is the appropriate unit of measurement for the different types of capital and the subsequent comparability of these units. For example, the use of money as a single unit is problematic given the lack of market values or established indirect valuation techniques for some forms of capital. Equally, there is an ethical debate underlying the principle of measuring capital stocks and flows – treating nature as just another form of capital – as though humans are indifferent to its existence as long as their well-being is otherwise assured.

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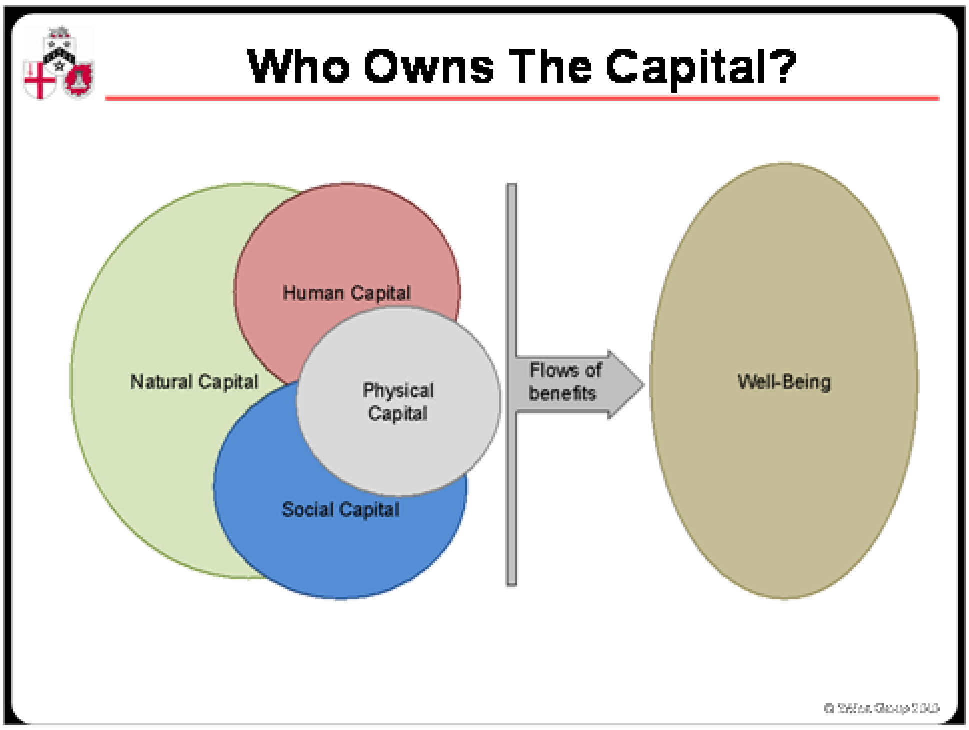


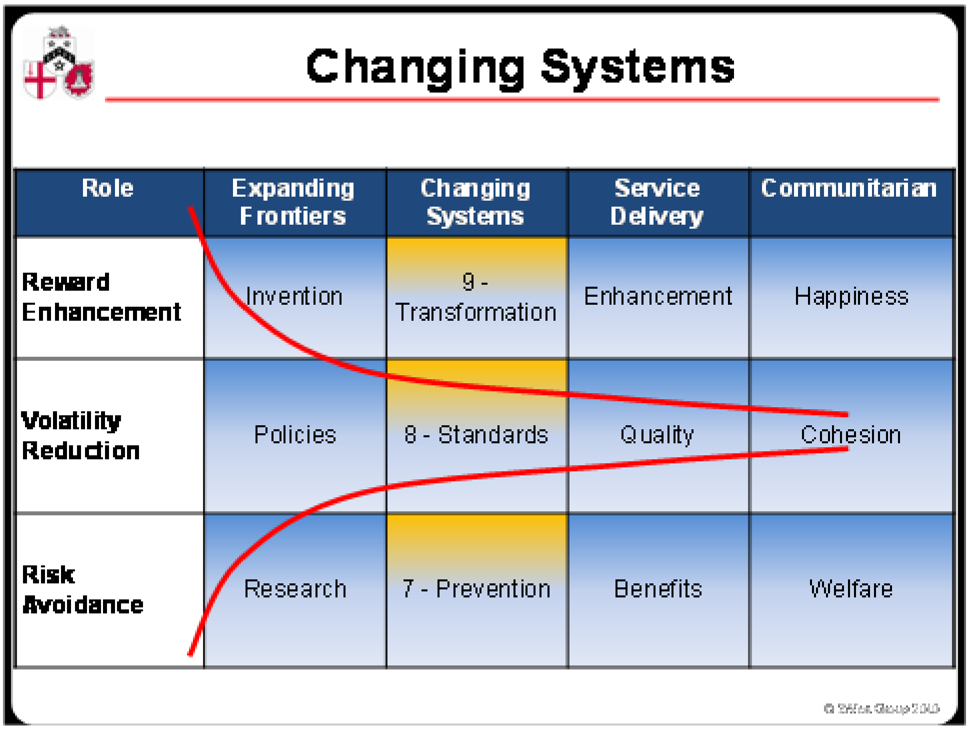
Well-being supposedly arises from the presence of key capital stocks and the flow of benefits (or goods and services) that these provide to society. The so-called capital stock model identifies four types of capital that contribute to well-being:

- Physical capital – assets used to produce goods and services, including machines, factories, buildings and infrastructure;
- Natural capital – the environment, including natural resources;
- Human capital – the health and productive potential of people, including health and education;
- Social capital – the social networks and institutions supporting an efficient, cohesive and functioning society, including norms and trust.

The degree of substitutability between the different types of capital is contentious. Financial capital is often cited as a fifth type of capital (comprising stocks, bonds, currency deposits), though there is debate as to whether it should stand alone or be viewed as social capital, or as the means of conversion between one form of capital and another. Because certain benefits are essential to life (e.g., clean water, a stable climate etc), there are also difficulties in defining critical thresholds for each type of capital, beyond which capital should not be depleted or degraded.

Whether positive levels of well-being can be sustained over time depends on whether these key capital stocks are maintained and can be passed on to future generations. Economics is about maximising well-being and allocating resources in scarcity. Due to population growth, the whole planet faces a resource scarcity problem. More resource scarcity problems may create a boom for economists, but a balance sheet approach doesn't work without ownership. Ownership of every square centimetre of the planet and every productive resource is the likely outcome of excessive population growth.

One disturbing consequence of having everything on the balance sheet is that, a bit like the UK government's appropriation of Trustee Savings Bank in 1984 to privatise it in 1986, there is increasingly the presumption that public goods are or should be government goods. Don't leave anything lying around in a public space. This is a particularly disturbing trend in the UK today regarding corporation tax. We have a set of tax laws, but then go round for a second bite at taxation in the court of public opinion vulnerability. One of the things that made the Magna Carta so important was the practical, stubborn insistence on "applying the feudal principle of contract" to a ruler [CAM, Helen, *England Before Elizabeth*, Harper & Brothers (1952), pages 97-98 - http://archive.org/details/englandbeforeeli001556mbp] The presumption of government ownership in the first instance puts us in danger of being more Russian than English, with property rights emanating from the ruler, rather than contractually provided from the people, as Richard Pipes contrasted so well in *Property and Freedom* [1999].



Well six down quickly; that wasn't so bad. Now we turn to the ones that need a bit more explanation. This lecture was partially inspired by a wonderful speech that Mary McAleese, President of Ireland, made to the European Insurance Forum in Dublin in March 2010:

"The certainty and confidence that insurance provision brings to all our daily lives, whether business or personal, enables us to breathe more easily, to find the confidence to let innovation flourish and to engage with the present and the future, chastened by the past but not allowing the fear of the possible to paralyse us in the present."

While her wonderful evocation should put thousands of insurance marketing people to shame, it raises an interesting analogy of government as insurer. It is here that our taxonomy starts to stretch our imagination and we can provide interesting examples of using finance beyond just taxing and spending.

7 – Changing systems prevention – John Locke was not as sunny as John Adams or Mary McAleese. He wrote, "Government has no other end but the preservation of Property." [John Locke (1632–1704), British philosopher. Second Treatise on Civil Government, Chapter 6 (written 1681, published 1690)] Following the 10 April 1992 bombing which devastated the Baltic Exchange for shipping, insurers withdrew cover for acts of terrorism. In response, the UK government rapidly formed a new government reinsurer called Pool Re. At the moment, insurers in the UK can reinsure liabilities from terrorism with Pool Re, typically in excess of the first £75m. A Pool Re member's retention is proportionate to their participation in the scheme. Pool Re was emulated by the US after 9/11. Pool Re has been particularly well run over twenty years, remaining in significant surplus and supporting a broad property market. Further, it was set up with the aim of attracting other reinsurers into the market, at which it has also been successful. Pool Re is an example of the government spending virtually nothing but achieving a lot through finance.

This reinsurance idea can be extended. For example, the government wants the UK to be free of cyber-crime. Cyber-crime insurance is a market where it is hard to get significant risks underwritten. Related cyber-terrorism, e.g. state sponsored terrorism, insurance doesn't exist. Cyber-crime exists and hurts financially, partly because it is difficult to insure. I would deem cyber-crime to be under control when I can buy normal insurance after I've done what an insurer tells me I need to do to buy protection, just like home insurance against burglary or fire. One Long Finance proposal is a government cyber reinsurer (Cyber Re), just like Pool Re, where government helps the insurance industry handle the extreme losses of cyber-crime.

We've long had export guarantee schemes. Other suggestions, such as Pension Indemnity Assurance, advocated by Con Keating to make defined benefit pensions viable, are forms of assurance that could be offered via the state. Another is to insure overseas students' fees against a UK university default in order to bring business to the UK. Brendan Greeley paints politicians as insurers: "You could think of politicians as underwriters, … they must compare the probabilities of low-frequency events, weighing the risk of a downturn against a sovereign default, or of Chinese imperial ambition against more small wars in the Middle East, or of climate change against the cost of regulation."
[GREELEY, Brendan, "The God Clause and the Reinsurance Industry", Bloomberg Businessweek, 1 September 2011 - http://www.businessweek.com/magazine/the-god-clause-and-the-reinsurance-industry-09012011.html#p5]

8 – Changing systems standards – previously at Gresham College, in 2006 we discussed how standards markets constitute a free market response to regulation. Governments have always had a role in standards, but standards markets work so successfully that they are almost unnoticed. We have standards in science - laboratories, calibration, testing; product conformance – manufacturing, parts, components; health and safety – fire, food, working practices; ICT – electrical specifications, transmission formats, global positioning; quality standards – design, production, installation, inspection; and environmental, social and ethical standards – fishing, forestry, trade, child labour. Whole industries – oil & gas, shipping, aviation – base their safety on a combination of standards and assessment combined with regulation.

What distinguishes standards markets from regulation is that there is competition and choice in who audits you against the standard. While the process of developing and implementing standards can be mind-numbingly boring, standards, better than regulation, can evolve. In health, the UK government is behind clinical standards that take the patient into account. In the Green Deal, the government is using standards to certify suppliers. Across Europe, the EU is piloting an Environmental Technologies Verification framework for new environmental products or processes in waste, materials and energy technologies, using standards markets to validate their claims. In financial terms some regulations set standards, such as minimum wages, where evidence is growing that they do more good than harm.

Another approach to changing systems using finance is taxation or tolls. By trying to set a new cost standard, often the internalisation of an externality, governments attempt to change behaviour. Vice taxes on cigarettes or alcohol are good examples, as well as emerging areas such as fat taxes, rescinded recently in Denmark as a tariff on saturated fats, but introduced as a trans-fat ban in New York City.

9 – Changing systems transformation – is an exciting area with lots of new products. The basic idea here is to ensure reward, a mirror of insuring risk. Achievement funding if you will. This is not new. In order to promote the transformation of lighting, the government provided whaling bounties from 1749 to 1824, 40-/tonne on 330 tonne 'cat' vessels gave 3 to 6 months fitting out risk cover. [Dr Bernard Stonehouse, "The Greenlanders - Arctic Whaleships And Whalers", Gresham College (3 October 2011) - http://www.gresham.ac.uk/lectures-and-events/the-greenlanders-arctic-whaleships-and-whalers] Today we have similar bounties with feed-in tariffs for electricity. One recent novel example began in Monterey Bay in 2005, PACE, Property Assessed Clean Energy bonds, to finance energy savings, e.g. rooftop photovoltaics. Here, municipal governments offer a specific bond to investors and then loan the money raised to consumers and businesses to put towards an energy retrofit. Nearly 30 states have passed enabling PACE legislation. Another example of transformational products that ensure reward is social impact bonds. Public sector commissioners commit to pay for significant improvement in social outcomes of a designated group. Some high profile examples include reductions in prisoner re-offending rates, the number of people being admitted to hospital, drug rehabilitation and children's adoption.

This changing systems column constitutes our third role for the government actor – that of guarantor. I would argue that pensions, fully provided by the state are ‘service delivery’, but when guaranteed they fall into our ‘changing systems prevention’ category. In this category the government either guarantees that an outcome is ensured, or standards and externality costs will be applied, or that it will pay for success. One of the interesting problems in this column is that of hypothecation. Hypothecation is the allocation of revenue raised by a tax, or income raised for a specified purpose, to designated expenditure or a designated fund. Historically, hypothecation rarely works. Governments find ways to circumvent the designated funds to get at the goodies inside. In the USA, designated road funds are a source of contention. In the UK, we can look at the fact that National Insurance has become just another tax, rather than a designated fund for retirement.

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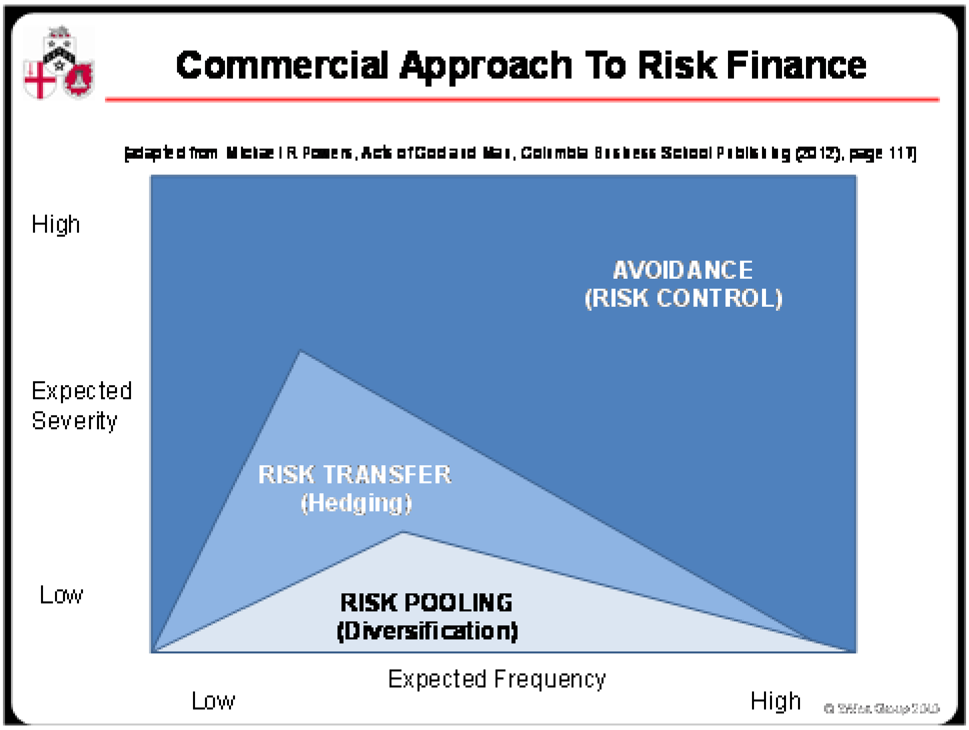
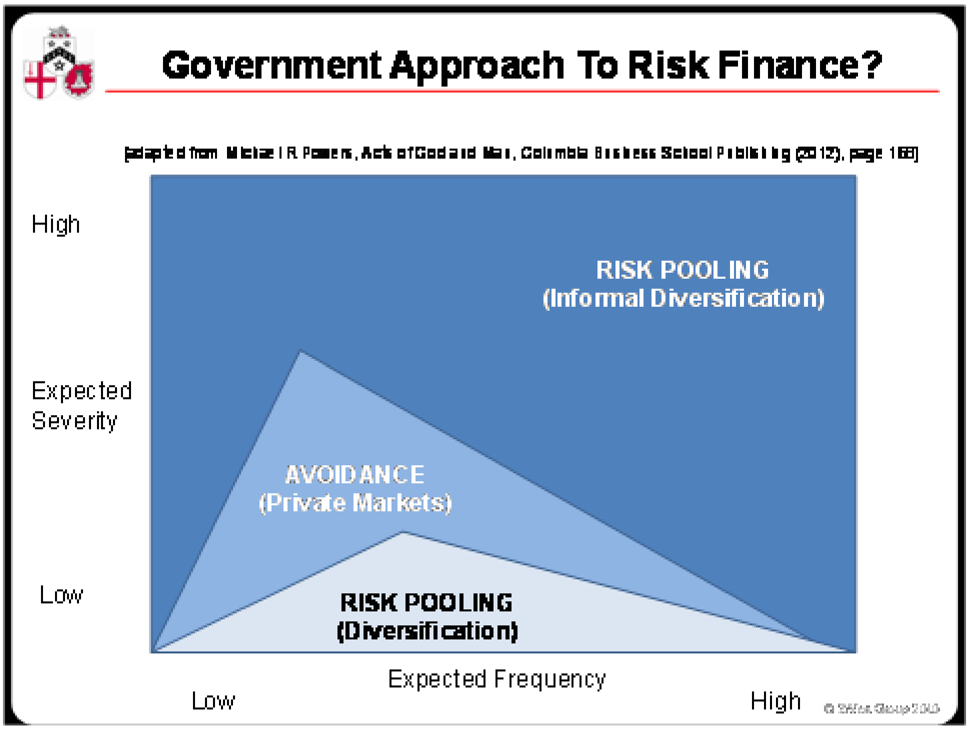


However, the failure of hypothecation raises an interesting contrast with government's traditional response to insurance suggestions it doesn't wish to pursue, that these suggestions would raise a contingent liability on the government's balance sheet. A contrary response is that many of these outcomes, cyber-crime or defunct pensions for example, will wind up on the government balance sheet if they occur, so insurance suggestions are good ways of using finance to make markets move outcomes in the right direction.

"In practice, the government supplies contingent liquidity through a variety of policies and interventions, including the conduct of monetary policy, the provision of deposit insurance, the occasional bailout of commercial banks, investment banks, pension funds and other institutions like Freddie Mac and Fannie Mae. Also a whole range of social insurance programs (unemployment insurance and social security, etc.) and of implicit catastrophe insurance (earthquakes, nuclear accidents, etc.) play an important role in influencing the amount of aggregate liquidity in the economy."
[Bengt Holmström and Jean Tirole, "Inside and Outside Liquidity," *MIT Press* (2011), page 229.]

An interesting point arises when contrasting commercial and government approaches to insurance. A commercial approach by insurers works on risk selection. There is a whole bunch of risks in the outside world that can't be insured or insured for reasonable cost, so risk control is the dominant approach. Once risk can be transferred, people hedge, typically via derivatives. If the risk can be pooled, then people use insurance.



"Unlike an insurance company, a national government cannot actually avoid any particular category of risk. Therefore, all exposures in the top-most region (with high expected severities, whether associated with low or high expected frequencies) must be accepted, albeit reluctantly by the government. However, because of the political difficulty associated with setting aside sufficient financial reserves for these costliest of exposures, the government will tend to address them only as they occur, on a pay-as-you-go basis. In the bottommost region, the government can take advantage of the likely presence of many similar and uncorrelated claims with low expected severities, so this region is much like the corresponding region for insurance companies. Here, the government sets aside formal reserves for various social insurance programs (e.g., pensions, health insurance and unemployment/disability benefits). Finally, in the middle region, the government typically tries its best to avoid these risks by encouraging firms and individuals to rely on their own private insurance products (but naturally, does not always succeed)."
[Michael R Powers, ***Acts of God and Man***, Columbia Business School Publishing (2012), pages 168-169]

Government's special role means it helps to create liquidity throughout the country, and liquidity aids price discovery, which should engender more rational capital allocation.

Expanding Frontiers

Role	Expanding Frontiers	Changing Systems	Service Delivery	Communitarian
Reward Enhancement	12 - Invention	Transformation	Enhancement	Happiness
Volatility Reduction	11 - Policies	Standards	Quality	Cohesion
Risk Avoidance	10 - Research	Prevention	Benefits	Welfare

We turn to our final column, expanding frontiers. Again, starting at the bottom:

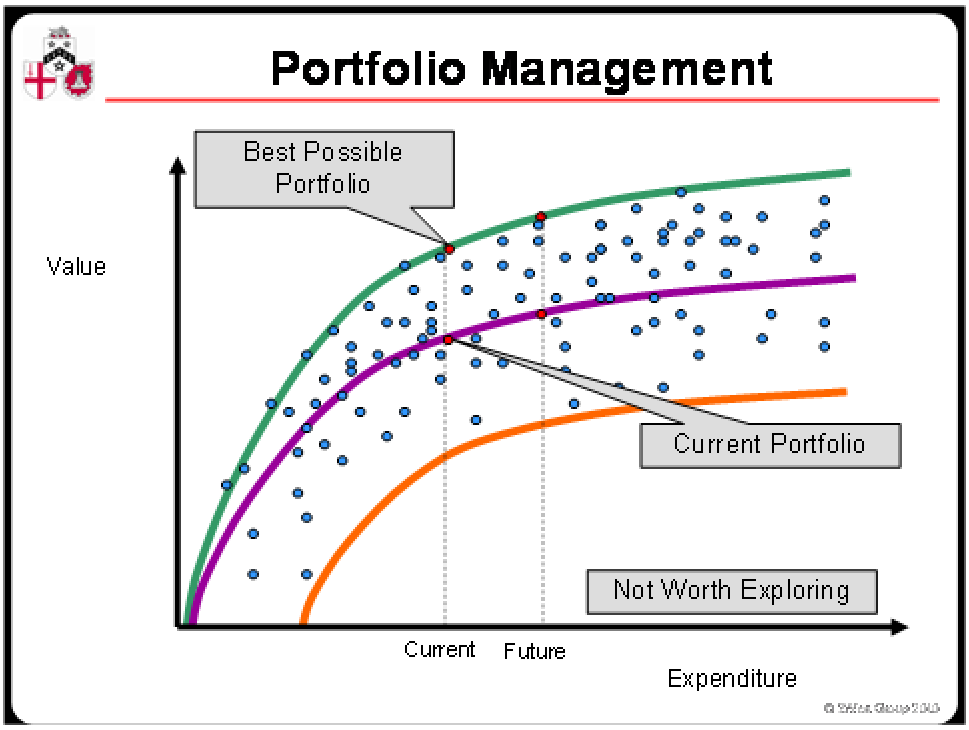
10 – Expanding frontiers research – One of the great, often unnoticed, contrasts between much government research and much commercial research is that government research tends to be about reducing risks while commercial research tends to be about gaining rewards. This may seem a bit odd, given that much commercial research is about eliminating risk, e.g. reducing the effects of disease, but the system is one of reward. The pharmaceutical firm will get paid to reduce the effects of disease. Government researchers like to have a known problem, “defeat cancer”, “defend the nation”, where the commercial structures are irrelevant. Here we have government working to manage a research portfolio.

11 – Expanding frontiers policies – Governments find it hard to prove that they are committed to policies. One approach to proving commitment on inflation has been to issue bonds that are linked to inflation targets. The first time principal and interest on a bond were linked to the price of a basket of goods was in 1780 by the State of Massachusetts. The Massachusetts basket included corn, beef, wool and leather. But inflation-linked bonds were not commonly issued until the 1980's. Growth has, however, been strong. In 2009 inflation-linked bonds represented 9% of worldwide outstanding sovereign debt.

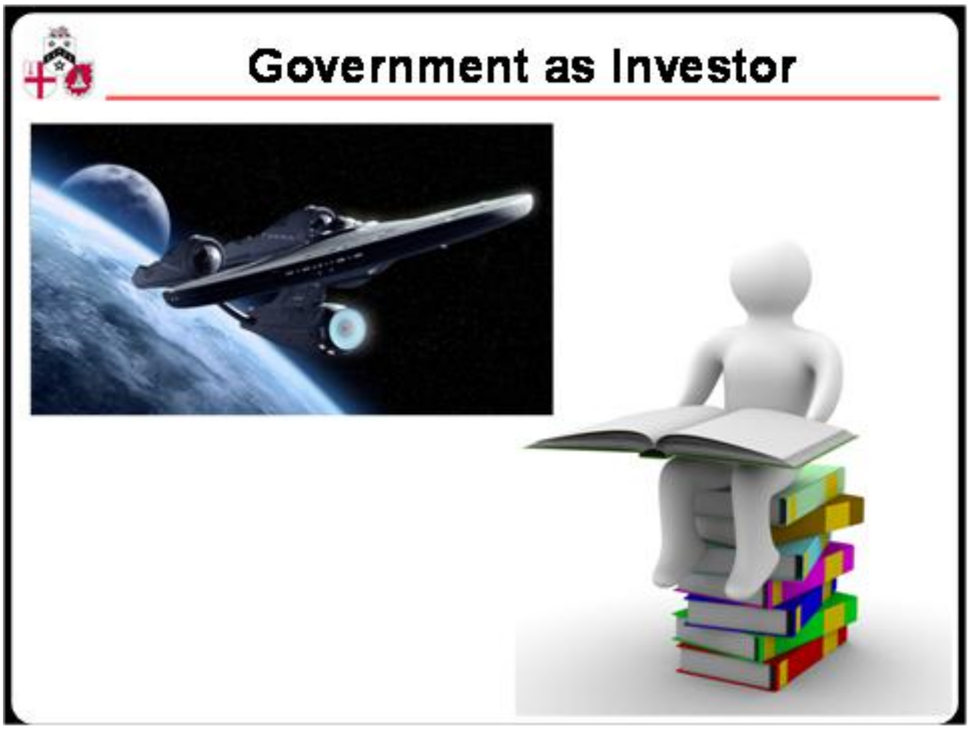
Policy performance bonds are bonds whose funds are for general expenditure on roads, hospitals and schools, but whose payment terms are tied to successful policy outcome. They are a simple extension linking to other targets. Previously at Gresham, we have explored a simple, almost subversive, proposal on climate change finance – index-linked carbon bonds. An index-linked carbon bond is a government issued bond where interest payments are linked levels to a carbon target - levels of feed-in tariffs for renewable energy, emission certificate prices or actual greenhouse gas emissions of the issuing country, while the proceeds of the bond are for general expenditure, not a ‘green’ bond. An investor in an index-linked carbon bond receives an excess return if the issuing country’s targets are not met, e.g. an extra ten percentage points of interest on the bond for each percentage point the government is below its renewable energy use targets.

A related approach might also work for forestry bonds for countries trying to prove that they will change their systems to work against deforestation. Again, the bond pays more if the country fails to meet its forestation targets. There are obvious extensions in areas such as foreign investors looking at inward investment who need to rely on government policy promises say on policing, education or worker health. If governments tell the truth about their policy commitments, they get cheap money. If governments are not committed, they pay. Investors can hedge projects or technologies that support a policy because if the government's stated future fails to arrive the issuing government winds up paying investors higher interest rates on government debt.

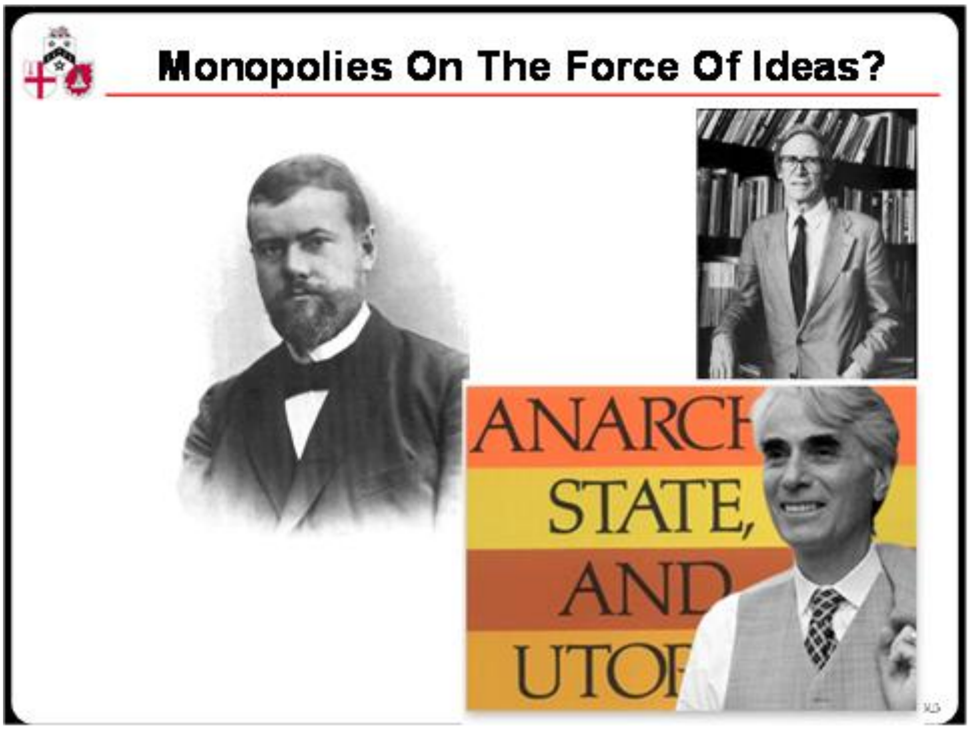
12 – Expanding frontiers invention – this is our Star Trek– "to boldly go where no man has gone before". While this sounds exciting, and government rhetoric likes to claim that it has been behind many new inventions, a la Al Gore and the information superhighway, the truth is that government is rather good at claiming credit and rather poor at actually inventing. In some sense, that's fine. A bureaucratic mechanism is not conducive to invention. I might prefer to give my money to a philanthropic actor who is more likely to spend on risky ventures. Governments do tend to crow about co-investment here – various enterprise funds, regional development funds or state development banks – but there are other means.



At one point, as a director of an agency responsible for approximately 40% of UK government R&D, I asked a simple question, "have we learned a lot this year?" The answer was always, "sure, lots!" To which my response was, "then why are we spending more than 99% of our research monies the way we did last year?" Governments have a legitimate need to diversify our opportunities, yet government processes encourage concentration. Some of the interesting financial approaches for invention outcomes include prizes and awards. The USA's Defense Advanced Research Projects Agency is famous for its 'challenges' in robotics or self-guided vehicles. I wonder about carving out a substantial percentage of research monies for lotteries. Basically, set a very low bar for an application – just high enough to ensure that the person or organisation has something of substance to do and has filled out a form for it. State the range of awards on offer – "we will award two £500,000, ten £100,000 and fifty £25,000 grants". Then simply use a lottery – no experts. (a) it's clear what's needed to win; (b) decisions on effort are on the side of the applicant; (c) it would increase research diversity; (d) it would decrease compliance costs. This is government as kynic. To the kynic the act of analysis, a cynical task, is destructive whereas the act of existence is creative. A kynical (Diogenes would be proud) or cheeky government doesn't know what is needed or how to do it but proudly supports your right to do something about it. The kynic is a person who holds that by being what you are, you achieve what you seek; so government provides the conditions for success but not the means.

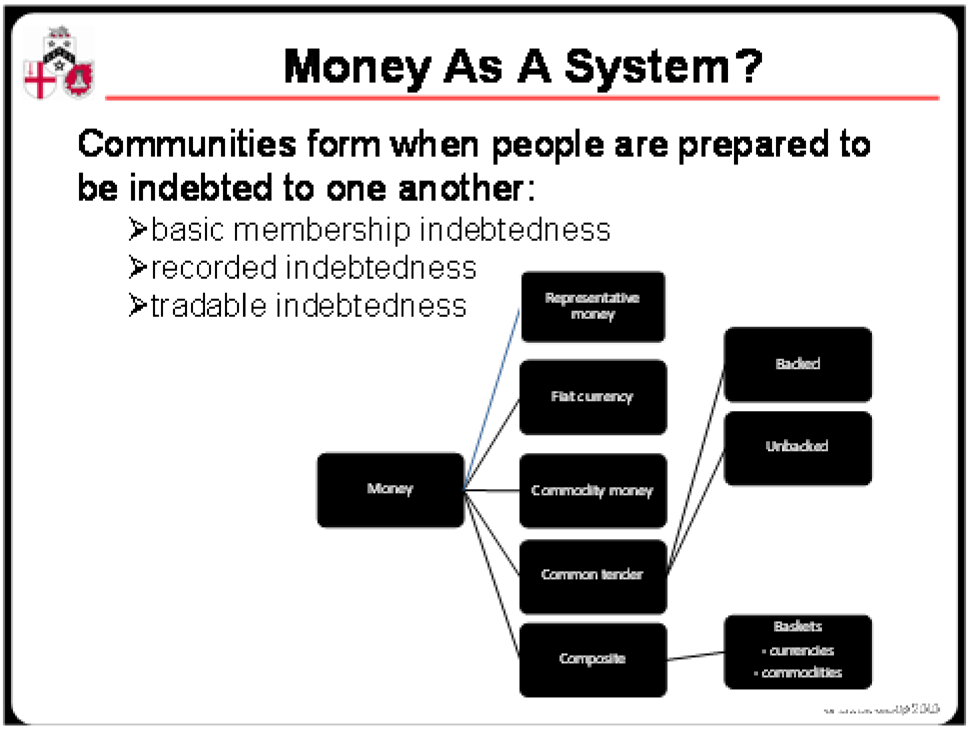


Well, we end our Dirty Dozen on government as an investor thinking about portfolios (though perhaps I should have used this photo under "Enterprise"). And no, I'm not a New Labourite rephrasing all expenditure as investment. Nor does this make government itself a good investment. First, it's a bit like having a dual class share structure – one group do the voting, another stump up the cash. Second, investment begs the question of what type. "State-directed capitalism" is a rising trend that The Economist terms, "a new kind of hybrid corporation, backed by the state but behaving like a private-sector multinational" [The Economist, "The Rise Of State Capitalism", 21 January 2012, page 11]. These behemoths raise concerns about lack of competition, impediments to free trade, corruption and the use of force. Third, government as investor has a poor record round the world, as well as in the UK. Overall, these mechanisms are not that efficient or inventive. It is a long argument to explain how some government investment drives multiples of private investment away [Mainelli, 2011]. Every time we've had a programme, aerospace, electronics, computing, regional development, we've killed the sector. As the Economist notes, "... industrial policy requires disinterested, benevolent policymakers who can do it well. Unfortunately, they do not yet have a recipe for how such policymakers can be created." [The Economist, "Tinker, Tailor", Economics Focus (1 October 2011) - http://www.economist.com/node/21530958]



Which leads nicely to our thirteenth outcome, money itself. Before we discuss money, we need to define 'community' - "a group of people who are indebted to one another". There are many ways to track indebtedness, memory, simple obligation counts or chit systems. If our community obliges you to do a good deed for your neighbour, you may use a simple counting approach. But as a community grows larger, members of the community may wish to trade these debts. When these debts are traded independently a form of money arises to manage indebtedness among the community, and to preserve its obverse, trust.

So does government make us a community? Back in 1919 Max Weber [*Politik als Beruf – Politics as a Vocation*] wrote: "A compulsory political association with continuous organisation will be called a 'state' if and in so far as its administrative staff successfully upholds a claim to the *monopoly* of the *legitimate* use of physical force in the enforcement of its order." [WEBER, Max, *The Theory Of Social And Economic Organization*, PARSONS, Talcott (ed), Simon & Schuster (1997- first published 1947), page 154] Robert Nozick's *Anarchy, State, and Utopia* (1974), along with John Rawls's *A Theory of Justice* (1971) dominated late 20th century social and political analytical philosophy debates. Rawls promoted liberal egalitarianism while Nozick challenged the legitimacy of anything more than a simple libertarian state. Governments can, and do, undertake many different activities around the world, but this monopoly of force or violence is a constant. Of course, almost immediately after establishing such a monopoly, a government needs to raise resources. Raising resources is frequently done through taxation. Fiat currency is 'let there be' money created by the state whose value is determined by legal means. Typically, these legal means have been that the money is acceptable for the payment of taxes. Fiat currency has been the dominant form of money for the past few centuries.



As nef (new economics foundation) points out, "... money is really nothing more than a promise to pay. However, what distinguishes money from pure credit or, say, an IOU note, is its general acceptability. Promises to pay that are accepted as tax will tend to be the most widely accepted for private debts and exchanges as almost everyone needs to make regular tax payments." [RYAN-COLLINS, Josh, GREENHAM, Tony, WERNER, Richard, and JACKSON, Andrew, *Where Does Money Come From? A Guide To The UK Monetary And Banking System*, new economics foundation (2012), page 116] What we call money is really just circulating pre-paid tax chits.

Government forms a semi-coercive community called a nation. If you don't believe the coercion or force are quite close to the surface, just try ringing HM Revenue & Customs tomorrow and saying, "I don't quite feel like a member of the British community this year and would like to forego my taxes for a while." You would fairly quickly join a community that uses iron bars for curtains and eats rather mediocre communal meals. Further, government monopolisation of community crowds out the multiplicity of other communities we might join. Quite related to this monopoly of force, governments fairly quickly establish a monopoly on money as well, or establish a central bank with a monopoly on the use of tax debts as money.

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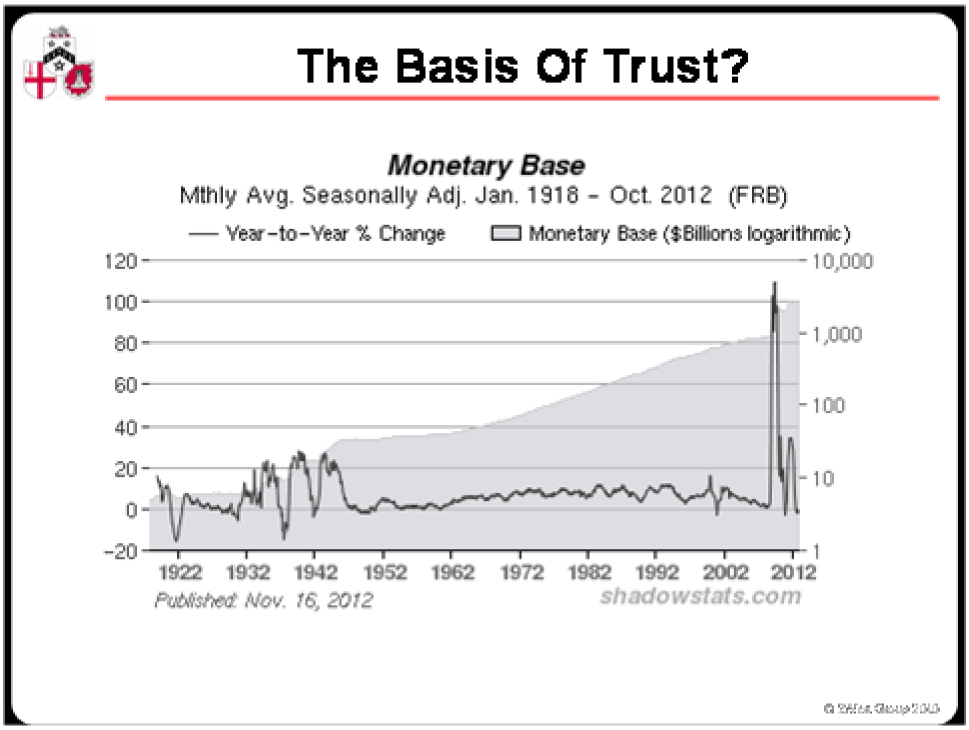
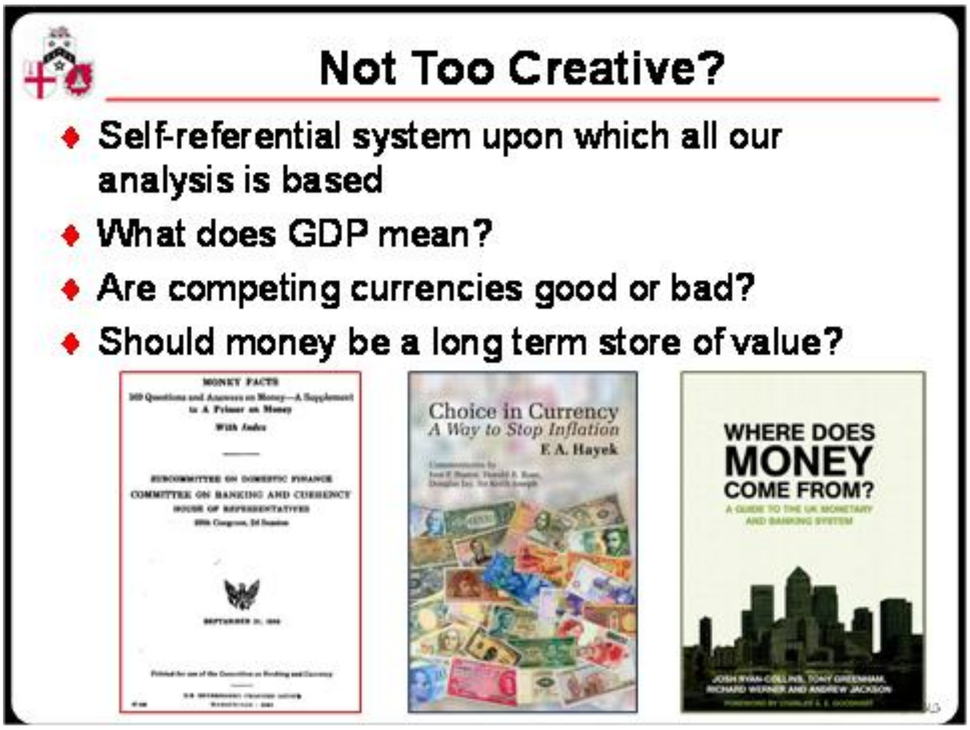


And money gives government finance the ultimate tool. First, money underpins all national finance. In cooperation with banks using fractional reserve lending, governments determine how much 'trust' there is in society. Second, governments can print financial impact when needed. Through inflation, governments can tax, up to a point, relatively unnoticed. And the reverse is true, where governments can build up foreign reserves when the economy is 'too strong', for example in Switzerland at the moment where last month the estimate was that reserves totalled some SFR63,000 [US$65,000] per person. Third, money gives governments control of the transfers of value among generations. While we talk about liquidity crises and financial crises, I have argued that we in the West are experiencing more subtle monetary crises and I hope that we don't have to deploy the strategic problem solving approach used by the Microsoft operating system – "CTRL Alt Delete" to reboot. Or as the Economist's Buttonwood column concluded:

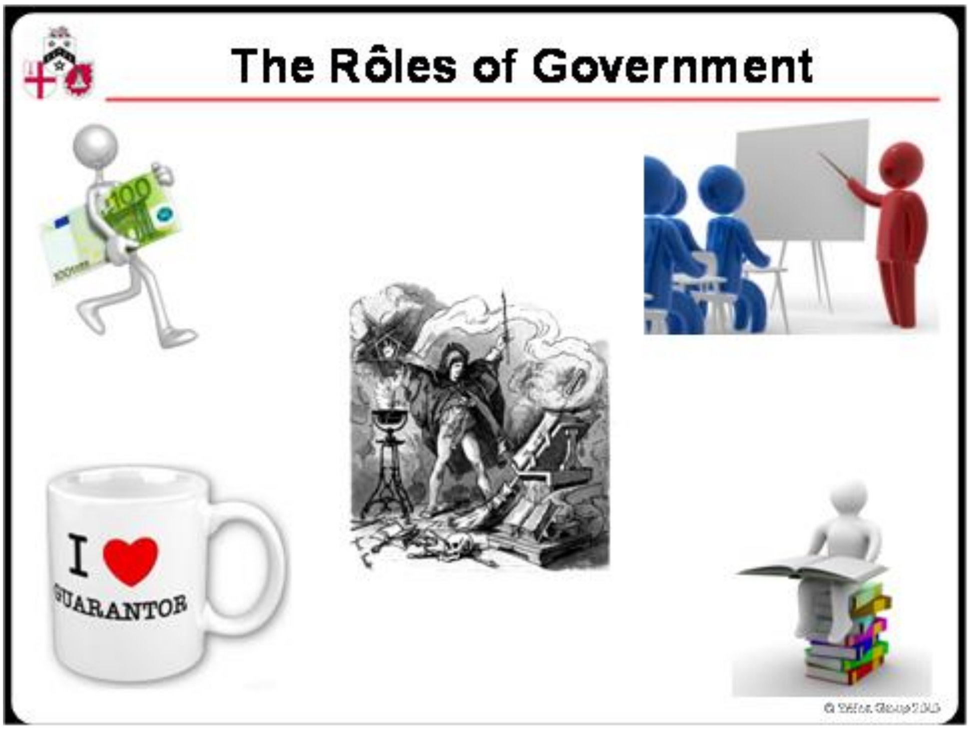
> *"Creditors have been more patient with democratic governments than with other regimes, probably because the risk of abrupt changes of policy (like the repudiation of Tsarist debts by Russia in 1917) are reduced. But this has postponed the crunch point, rather than eliminated it—and allowed stable democracies to accumulate higher debt, relative to their GDP, than many, more volatile countries ever achieved. Governments can, as Madison suggested, confiscate the wealth of domestic creditors via inflation, taxes or default. But however often they vote, democracies cannot make foreign lenders extend credit. That harsh truth is now being discovered."*
> [The Economist, "Democracies And Debt", Buttonwood (1 September 2012, page 59]

Johann Wolfgang von Goethe wrote the Sorcerer's Apprentice (Die Zauberlehrling) poem in 1797. For governments, in garbled Goethe, fiat money is "Die Geister, die ich rief" - "The spirits that I called". And this is our fifth, and final, role for government. And a frightening one. Democracies do not really understand their own monetary systems, based on trading tax debts within a semi-coercive community. Nor do governments. They have invoked magic they do not yet understand and cannot yet control. As Jean-Claude Trichet, President of the ECB before Mario Draghi, remarked: "The fact that markets are dysfunctional is, in our opinion, the responsibility of governments. They are issuing their own securities. They have the responsibility for the credibility of their own securities." Or as Anthony Peters of Swissinvest points out about deficit spending, "We know that 'tax and spend' doesn't work and we can be fairly sure that 'spend and tax' works even less." That said, some governments, particularly in Asia, are exploring ways of using their monetary base to create liquidity that is not based solely on future tax obligations.

So, am I guilty of encouraging yet more innovation in government finance, an area already so full of inventive tricks that we have no idea if we can meet our pension or health obligations. We could point to the debacle of Private Finance Initiative and Public Private Partnerships as an example of government financial innovation gone mad, a government version of collateralised debt obligations. Perhaps, but I feel that we need to understand all the ways we can use government finance before we act, and this taxonomy of 12 ways, plus the monetary system itself, may help us to use government finance more wisely. But of all of the methods, the monetary system is the one the apprentice least understands:



"Really a coin is just a promise, and the only real limit to the amount of money we produce is how many promises we wish to make to one another, and what sort. Under existing arrangements, of course, there are all sorts of other, artificial limits: over who is legally allowed to issue such promises (banks), or determine what kinds of promises have what sort of comparative weight (in theory, "the market," in reality, increasingly bureaucratized systems of financial assessment.) It is such arrangements that allow us to pretend that money is some kind of physical substance, that debts are not simply promises – which would mean that a government's promise to pay investors at a certain rate of interest has no greater moral standard than, say, their promise to allow workers to retire at a certain age, or not to destroy the planet), but as some kind of inexorable moral absolute."
David Graeber, Revolutions in Reverse Essays on Politics, Violence, Art, and Imagination, Autonomedia (2011), page 114 - ISBN 978-1-57027-243-1 - http://www.scribd.com/doc/70994942/Revolutions-in-Reverse-Essays-on-Politics-Violence-Art-and-Imagination



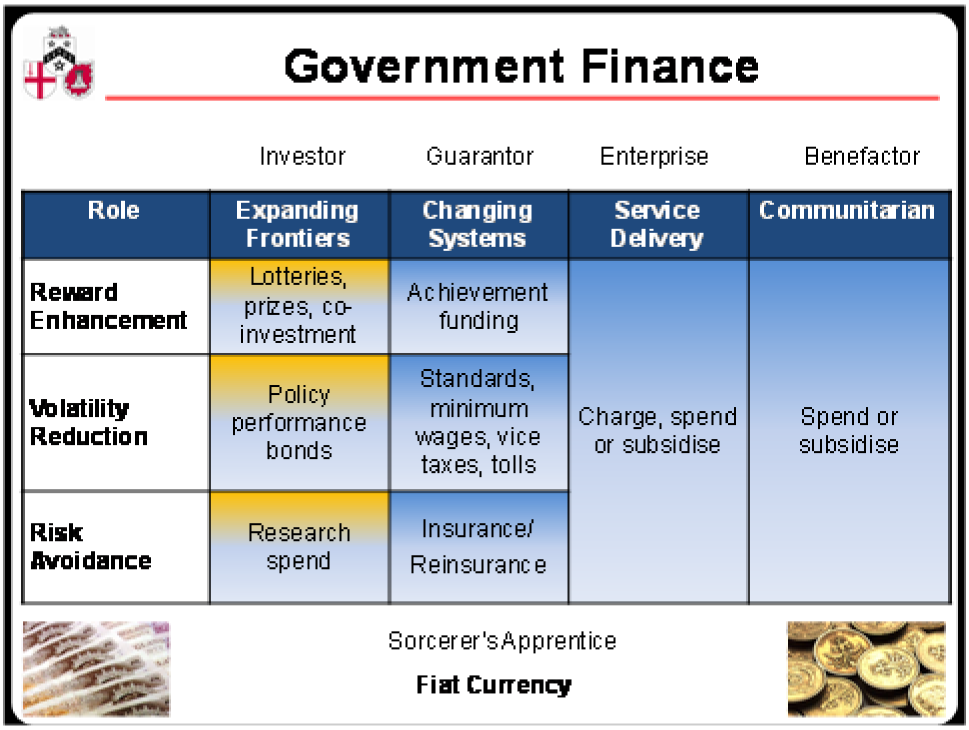
David Bholat mused with me as to whether current debates about government are becoming more vicious because people are locked into evaluations that are deontologically driven, i.e. they use normative ethics and evaluate whether or not an action is moral based on a set of rules, and that these deontological positions conflict with utilitarian analysis. For example, a belief in small government and low taxes proscribes certain state actions. Or a belief in communitarian welfare or redistribution prescribes expenditure over other means of achieving social goals.

The US presidential campaign featured quite a bit of deontological jousting between Romney and Obama about the role of government when Obama said in July 2012 – “If you were successful, somebody along the line gave you some help. There was a great teacher somewhere in your life. Somebody helped to create this unbelievable American system that we have that allowed you to thrive. Somebody invested in roads and bridges. If you’ve got a business—you didn’t build that. Somebody else made that happen. The internet didn’t get invented on its own. Government research created the internet so that all the companies could make money off the internet. The point is, is that when we succeed, we succeed because of our individual initiative, but also because we do things together.”
http://www.economist.com/blogs/freeexchange/2012/07/political-economy-0
I might disagree with his summary of internet history, and as a politician I suspect President Obama found it hard to give airtime to other citizens who helped us, civic organisations, churches, what have you, but he is right to point out that we are members who benefit from the semi-coercive community of government.

In an insightful piece in the FT, John Kay summarises why we should back long-term welfare and benefit investment. He invokes Immanuel Kant’s categorical imperative to explain why we should look after those who no longer do anything for us, particularly the old, “it would be good for everyone (including ourselves when we are old) if everyone acted in this way” [John Kay, Financial Times, “The Welfare State Is One Ponzi Scheme We

Should Back", 26 September 2012, page 13]. He points out that the social contract can either be met by using money as a store of value such that future generations recognise today's generation's financial claims, invoking Paul Samuelson's phrase, the "social contrivance of money", or we can meet the social contract by implementing a social security system. "Both these types of social arrangement can fail, and often have done. Inflation can prevent money acting as [a] store of value. Or the social contract can be reneged on through an announcement that previously understood commitments are now unaffordable. Both debasement and default benefit a current generation at the expense of its predecessors and successors." And there are more radical moves such as outright seizure of property or enslavement.

Long-term, big and dispersed decisions are tough. An example would be a nuclear power plant – long in time, at the top end of the construction scale and the effects spread across the national grid. Other tough decisions are pensions, mortgages and long-term insurance. The state may have its problems, but it's the dominant game in town for long-term choices. Dieter Helm and others promote intergenerational sustainability, "the state should arrange matters so that future generations are no worse off than current ones", [Helm 2010, page 18] finding the "germ of a new way of thinking about the role of the state. It is the guarantor of the provision of the core public goods through time, and these are provided largely by the private sector under long term contracts which honour the investments, provided they are efficiently made." [Helm 2010, pages 21-22]


Government Finance

	Investor	Guarantor	Enterprise	Benefactor
Role	**Expanding Frontiers**	**Changing Systems**	**Service Delivery**	**Communitarian**
Reward Enhancement	Lotteries, prizes, co-investment	Achievement funding	Charge, spend or subsidise	Spend or subsidise
Volatility Reduction	Policy performance bonds	Standards, minimum wages, vice taxes, tolls		
Risk Avoidance	Research spend	Insurance/ Reinsurance		

Sorcerer's Apprentice
Fiat Currency

So we've had an evening looking at the way in which government can finance things. We've built a framework that I hope shows you just some of the rich ways in which government finance can be used to achieve outcomes. John S Coleman said, "The point to remember is that what the government gives it must first take away." [address, Detroit Chamber of Commerce, 1956] I hope you realise that while he may be right, a fiat currency system can hide the takings while some of the other mechanisms, such as reinsurance, try to make a good fist of the situation we're already in.

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There are a lot of extreme arguments about government. Three are particularly troublesome:

- government should do everything – leading to government should or does own everything and making us and the world chattels of some state;
- everything should be fair – leading to denying that inequality motivates, as well as justifying retrospective seizures of property. I would love the time to explore luck egalitarianism as a way between equality of outcome and equality of opportunity – social justice is present when variations in people's circumstances are down to choices they made, while chance variations are compensated;
- all important decisions should have state oversight – a lot of talk about democratic deficits ignores the fact that we have a representative democracy, not a direct democracy, and further implies that we should instantaneously react to changes in public opinion. I was troubled earlier this year at Gresham College when John Bercow, the Speaker of the House, in an otherwise wonderful speech, felt proud that Urgent Questions in Parliament had risen under from around two per annum to 99 over his three years. Do we want a Parliament that feels it has to react instantaneously to all major events?

I'll end on a final disturbing contrast between two opposing schools. One argues that the role of government is "to allow the private sector to flourish", while another argues that the role of the private sector is "to fund the public sector". In these times of financial crises, your choice of school is fundamental. It's not simple, and we haven't been able to explore it all, so I'd suggest keeping those acting roles in mind – benefactor, enterprise, guarantor, investor or sorcerer's apprentice. Which role did you have in mind when you suggested the government "should do something!"

Winston Churchill said, "The best argument against democracy is a five-minute conversation with the average voter." I hope that after tonight you could give him a different five-minute experience. I'll leave the last word to Thomas Jefferson, "I predict future happiness for Americans, if they can prevent the government from wasting the labors of the people under the pretense of taking care of them."

Thank you.

Further Reading

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Further Surfing

1. DARPA Challenges - http://www.darpa.mil/
2. 2020 Tax Commission, The Single Income Tax, The TaxPayers' Alliance (May 2012) - http://www.2020tax.org/2020tc.pdf

Previously at Gresham College (related)

1. Michael Mainelli, Gresham College – "Long Commerce: Transactions Across Time" – London, England (7 February 2011).
2. Michael Mainelli, Gresham College - "It's A Mad, Bad, Wonderful World: A Celebration Of Commercial Diversity" - London, England (17 November 2008).
3. Michael Mainelli, Gresham College - "Save The World: A Commercial Break" - London, England (28 April 2008).
4. Michael Mainelli, Gresham College - "Corporation Tax Or Income Tax: Which Is The Greatest Con?" - London, England (22 January 2007)
5. Michael Mainelli, Gresham College - "Standards Markets: The Free Market Response To Regulation?" - London, England (16 October 2006).
6. Michael Mainelli, Gresham College - "Take My Profits Please! Volatility Reduction And Ethics" - London, England (13 March 2006).
7. Michael Mainelli, Gresham College - "Goldilocks Government And The Market: Not Too Little, Not Too Much, But Just Right" - London, England (16 January 2006).

All Gresham College lectures - http://www.gresham.ac.uk/lectures-and-events/past?keys=&field_speakers_nid=1212&field_lecture_date%5Bvalue%5D%5Byear%5D=&field_lecture_date%5Bvalue%5D%5Bmonth%5D=&term_node_tid_depth=All

Thanks

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