Deep changes are ahead. We have the dubious distinction of experiencing the biggest economic crisis since the Great Depression. The initial disruption measured by indicators of financial distress was as severe as the Great Depression of the 1930s (IMF 2009a). The crisis resulted from an unsustainable buildup of credit, much of it driven by imprudent private investment. Now policymakers have to sort out the mess. Many citizens struggle. If history is any guide, it will take quite some time to get back to normal and the “new normal” may look rather different from the world we were used to during recent decades.

It is hard to drop acquired habits and thoughts. Most discussions about the future of finance remain stuck in patterns of the recent past. At the same time pieces on the future are often about what should ideally happen rather than what might actually happen. This essay opens up the toolbox for considering radically new futures for finance. It lays out key considerations about timeframes, the big headwinds facing advanced economies, myths permeating the discussion, features of economic “Realpolitik” and the major jokers that will shape outcomes. Two scenario sketches provide a taste of potential changes.

The scenarios are constructed to create two different operating environments for financial institutions so as to allow debate about how their strategy might need to adapt in the different worlds. Obviously, other scenarios could be constructed, not least one including a major shooting war in the Far East. Yet, the purpose of these scenarios is simply to argue that the world today contains the seeds for the emergence of very different financial systems over the coming decades.

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**Toolbox**

**Timeframes**

*The future is a radically different place*

Elisabeth Schneider celebrated her 111th birthday on August 19, 2012 in the Seniorenheim “To Huus” in Varel, Friesland. In school she learned about the rise of Germany under the Prussian emperors. The “concert of nations”, a legacy of the 1815 Vienna congress, was to assure the progress of states in Europe and beyond. In 1910 Norman Angell\(^2\) published his book “The Great Illusion” arguing that the growing economic integration of nations rendered war obsolete, notwithstanding the ongoing arms race between nations.

If Elisabeth ever discussed the way Germany and the world would develop over the new century, what might she have said? Would she have predicted World War I? The ensuing political chaos of the Weimar Republic? The great depression of the 1930s? The birth of the Soviet Union? The rise of fascism? World War II? The division of Germany? The prosperity and peace of West Germany after World War II? The fall of the Soviet Union and of the wall between the two Germanies? China under Mao and then the economic rise of China, in capitalist fashion? The preeminent position and amazing stability of the US throughout the century? Above all would she have predicted the combination and sequence of all these events? Elisabeth did not predict them, but in the span of just a single lifetime she lived through them all.

We keep extrapolating from the recent past. Yet, history suggests that major changes are all too likely. 20 or 30 years can easily be sufficient to bring them about. We can only speculate about the future. Yet, we know that someone who with hindsight predicted correctly will have been considered a radical, if not a crackpot, at the time of the prediction\(^3\).

*Structural changes in finance easily last for several decades*

This essay plays with developments over the next 30 years. Standard economic forecasting that underpins macro-economic policy extends to about 1-2 years. Such forecasts find it notoriously hard to predict turning points. To discuss deeper, structural change and its effect longer time frames are appropriate. Most planning or strategy exercises in firms or governments tend to go out 3 to 5 years, a time span consistent with the practical decision-making horizon of leaders of such organizations. Yet, when searching for stories about deeper change, 5 year “forecasting” horizons tend to produce “worlds” that resemble the recent past. Over 10 years major changes can happen. Over 30 years radical change is plausible. Just think about the development of the World from 1975 to 2005 and the fate of China and the Soviet Union\(^4\).

\(^2\) He received the Nobel Peace prize in 1933
\(^3\) When Elisabeth was 19, in 1930, the British philosopher Olaf Stapledon made some prescient predictions about the development of the world through World War II to a conflict between China and the USA, followed by a global state and resource scarcity. He told his story in the most ambitious future history of science fiction “Last and First Men”, which speculated about a post-human future.
\(^4\) This is the realm of scenario planning pioneered in the business world by Royal Dutch Shell in the 1970s.
There are special reasons to look at a 20 to 30 year horizon, when considering the future of financial systems. The return environment for an economy may shift drastically over 10 to 30 year horizons. For example, in the United States stock market returns were close to zero in real terms over the period 1905 to 1933 and again between 1965 and 1982. This was the case in the most successful economy of the 20th century. Over the century, 20-year rolling average returns varied from about 0 to 13 per cent.

Chart 1: S&P Stock market returns

![S&P Composite Real Price](http://advisorperspectives.com/dshort/updates/Total-Return-Roller-Coaster.php)


The high levels of public debt we see today in advanced economies are at record levels – close to 100 per cent of GDP – only paralleled by the situation at the end of World War II. It took a little over two decades to bring the debt back to levels of 30 per cent of GDP. This debt reduction was facilitated by unprecedented high rates of productivity growth in the advanced economies. Real GDP growth per capita in these economies was 4.5 per cent from 1950 to 1973 and then fell back to a little over 2 per cent per year5. Despite the help from a massive productivity boost it took significant “financial repression”6 to reduce public debt levels. Between 1945 and 1980 ex post real rates of return on deposits in advanced economies were little better than -2 per cent per year. From 1980 to 2010 deposit rates averaged 1.35 per cent.

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5 Maddison (1991)

6 Financial repression is a somewhat fuzzy term encompassing a variety of mechanism “taxing” savers whether through interest rate controls or inflation or other types of policy restrictions.
The structures of financial systems may also change dramatically and persistently. The aftermath of the Great Depression saw a variety of state controls on financial institutions, more intrusive regulation and in many countries more state involvement in ownership. Rajan and Zingales (2003) describe the resulting corporatist financial systems, for example, in Italy and Japan. They lasted for decades until deregulation upset the arrangements. While a corporatist model did not take hold in the United States the impact of regulations was felt in banks. Real wages in the financial sector dropped sharply relative to wages in other sectors in the wake of the Great Depression. For 40 years real wages remained at “normal” levels before rising drastically again since the 1980s.
The last 30 years in finance were exceptional

The last 30 years were in fact exceptional. The financial sector became larger. From 2 per cent of GDP after the Great Depression it grew to 8 per cent in the US by the Great Recession. In the UK banking assets as a share of GDP skyrocketed from less than 50 per cent of GDP in the mid-1960s to over 550 per cent of GDP by 2006. Equity levels in banks remained low after the Great Depression. As markets were deregulated banks levered up. Return on equity for banks in the UK was in the order 7 per cent up to about 1970 and then rose to about 20 per cent for the following three decades. Banking concentration rose. In the US the top 3 banks accounted for about 10 per cent of commercial banking assets in 1990. By 2007 the ratio was over 40 per cent. The demise of financial repression and the victory against inflation led to booming equity markets and positive real interest rates on deposits. From 1980 to 2000 stocks returned about 13 per cent in real terms compared to nothing in the preceding two decades.

Chart 4: Financial sector share in GDP in the United States

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7 The measurement of the value added by the financial sector is probably overstated in bubble times as risk is not well captured (Haldane 2010a).
Chart 5: Concentration of the US banking system

![Chart 5](chart5_image)

(a) Red line represents the Gramm-Leach-Bliley Act (1999) which revoked restrictions of Glass-Steagall
(b) Top 3 banks by total assets as a % of total banking sector assets
(c) Data includes only the insured depository subsidiaries of banks to ensure consistency over time - for example, non-deposit subsidiaries are not included.

Source: FDIC

Source: Alessandri and Haldane (2009)

Chart 6: Capital ratios for US and UK banks

![Chart 6](chart6_image)


Source: Alessandri and Haldane (2009)
Finally there is the example of Japan after 1992. Japan’s growth miracle ended in the early 1990s. The stock market reached its peak in 1989. The Nikkei stock market index reached almost a level of 39,000. In the fall of 2012 it stands at less than 9000. Economic growth slowed. Government debt in 1990 was about 60 per cent of GDP – tolerable by the standards of the Maastricht treaty. Yet, as growth remained weak public debt rose to over 220 per cent of GDP by 2012. In 20 years it has not been possible to tackle government debt effectively in Japan. Prior to the Great Recession Japan used to be held up by many outsiders as an example of failed policy making. Now it looks positive compared to what may be in store for some other advanced economies that start from a more difficult position.
In sum, the Great Depression ushered in major changes for financial systems. The details varied by country. Yet, it was quite normal for changes to have significant effects that lasted decades. The last 30 years were quite unusual compared to the preceding decades. Now we suffer from the aftermath of a disruption as severe as that of the Great Depression (IMF 2009a). Yet to some degree the policy response was different. It benefitted from the lessons of the Great Depression. Ben Bernanke, chairman of the Federal Reserve and renowned scholar of the great depression, led the charge of Central Banks providing ample liquidity in the aftermath of the crisis to help cope with a collapse in demand and financial distress. The closest modern example that may give a clue to the future may well be Japan. At the same time austerity measures in much of Europe are reminiscent of the aftermath of the Great Depression with output collapses already of similar magnitude. By the end of 2012 the GDP of Greece will already have shrunk more than that of Germany at the worst time of the 1930s (Madison 1991 and IMF 2012a).
Headwinds

Debt – public and private – is at record levels in advanced economies

Today’s public debt in the advanced OECD economies exceeds 100 percent of GDP on average. History suggests that public debt levels above 80 or 90 percent of GDP slow economic growth significantly (Reinhart and Rogoff 2009; for a review of estimates see OECD 2012). Even Germany’s public debt now exceeds 80 percent of GDP even though solid economic growth returned after 2009. It will be a challenge to stabilize debt ratios and even more to bring them down. Simulations by institutions like the IMF explore what needs to happen to bring debt levels back to just the upper end of the Maastricht treaty rules, i.e. 60 per cent of GDP. They typically work with periods of several decades to achieve such goal, for example, by 2030. If anything, this now seems optimistic for many countries.

Chart 9: Public debt 1900-2011

Government debt grew rapidly as a result of the crisis, notably the collapse of output and taxes. Private debts built up to an all-time high in several OECD economies in the run-up to the crisis and remain high. Household debt, corporate debt and financial sector debt have grown substantially. In the US the combined total of non-government debt went from 111 per cent of GDP in 1975 to 235 per cent in 2008, in the UK from 141 to 426 per cent, in Spain from 91 to 292 per cent (McKinsey 2012).

Troubled economies thus face problems of adjusting all sorts of debt, not just government debt. Assets are not worth as much as people hoped. Hence losses have to be taken by investors. Losses in equity markets are established fairly quickly in stock markets. However, sorting out debt claims is often contentious and takes time. The “deleveraging” thus required tends to reduce consumption and investment in economies.
Deleveraging in Finland and Sweden after their financial crises of the early 1990s took around 7 years. However, the starting conditions were not as tough as for some countries currently, particularly the troubled southern European economies [chart]. Importantly, the rest of the world did fairly well and both Finland and Sweden were relatively small economies that could benefit from solid external demand.

In Japan debt levels went up till 1990. Household debt went from 44 per cent of GDP in 1980 to 66 in 1990, corporate debt from 108 to 147, and financial institutions’ debt from 44 to 116 per cent over the same time period. Then the crisis hit. Private actors deleveraged to some extent. Households and financial institutions maintained debt at about the same level compared to income. Nonfinancial corporations reduced debt from 147 to 99 per cent of GDP by 2012. To prop up demand public debt meanwhile went from 59 to 226 per cent of GDP. In 20 years Japan has not achieved a reduction in its total debt stock. To the contrary, Japan’s total gross debt went from 243 per cent of GDP in 1980 to 387 in 1990 and 512 by 2012. On the other hand Japan remains a net creditor vis-à-vis the rest of the world.

So far in the advanced economies we have not seen aggregate deleveraging. For the advanced economies as a whole a one percentage point of debt reduction in the private sector since 2008 has been offset by an increase in public debt of 2.5%. Among the large economies only the US has seen aggregate debt reduction by about 13% (Jen and Yilmaz 2012).

Experience thus suggests that working out the debt problems of today’s troubled advanced economies will easily take 10 years - the optimistic case, 20 years is already a stretch and 30 years may well be required for a number of economies, unless unusually effective ways are found to write down debt and start afresh.

A “demographic penalty” will hit advanced economies

Demography presents another challenge. For much of the 20th century including in the aftermath of the Great Depression today’s advanced economies benefited from the so-called “demographic dividend”. Due to decreases in child mortality the share of people working in the total population rose. The “dependency ratio” fell. In addition, women started to work out of the home in greater numbers driving up measured GDP – and the tax base. With more people in a given population working income per capita for the population as a whole rises.

Today the process is going into reverse. Populations are ageing fast. More and more older people are dependent on younger ones working. The dependency ratio is rising again. This will be most pronounced in countries where fertility rates have fallen most, for example, Europe. Populations are set to shrink. Fewer children are born that can work when growing up in part to support the older generation.

Meanwhile life expectancy keeps increasing. Around 1900 in today’s advanced economies most increases in life expectancy were due to reductions in child mortality. Only 20 per cent of the increase was driven by longer life expectancy for those who had already reached the age of 65. Today 75 per cent of the increase in life expectancy comes after age 65. In 1900 life expectancy at the age of 65 was about 12 years; today it is almost 20 years. So far it appears, for example, in Europe that people living
longer tend to feel healthier longer as well. This would enable them to work longer and thus offset to a degree the rising dependency rate (Eggleston and Fuchs 2012).

Globally, countries in Africa and much of South and South East Asia will continue to benefit from lower dependency rates as fertility rates have not yet fallen below replacement level and possible child mortality improvements are yet to be fully reaped (Eberstadt 2011). However, East Asia, notably China is ageing fast. The Chinese labor force will start declining in absolute numbers by about 2015. The United States on the other hand has a comparatively balanced prospect. The fertility rate is about at replacement level. One consequence is, for example, that about 10 years from now the median age in China will exceed that in the United States.

The advanced economies will thus no longer face a demographic dividend but a “demographic penalty” that reduces the tax base and the room for maneuver to reduce debt. The globe as a whole can still rely for a bit on bulging working age populations in Africa and much of Asia, for a few decades at least. Yet for the older populations in the north to benefit they would need to invest in the south and be able to reap the returns.
Myths

Debt levels and demographic developments are with us, however we might assess them. These are more or less givens. Also with us are misconceptions – myths – that affect the debate and policy-making.

In the aftermath of the shock of 2008 initiatives to improve the world of finance abounded. Bleary-eyed “sherpas” organized one summit after another with hardly time to think. New regulations are complex. The Dodd-Frank Act on financial regulation in the United States is famously 848 pages long. It remains unclear whether the reforms will help or have damaging unintended consequences. The IMF’s latest Global Financial Stability Report finds that “despite improvements along some dimensions and in some economies, the structure of intermediation remains largely unchanged. The data suggest that financial systems are still overly complex, banking assets are concentrated, with strong domestic interbank linkages, and the too-important –to-fail issues are unresolved. Innovative products are already being developed to circumvent some new regulations.” (IMF, 2012a)

In preparing to think about what the future might really bring, it is worth considering some widely held views that could well be myths.

Myth no.1: “The Basel framework of prudential regulation is well thought out”

The centerpiece of the Basel framework is capital requirements to protect banks against shocks. This is plausible to a degree and can in principle be applied in a consistent way across countries. “However, there had not been any theoretical or empirical work on the effects of capital requirements on the financial system and the overall economy, let alone the differences between the effects of different rules for computing capital requirements.” (Hellwig, 2008) Conceptual issues aside, when the crisis hit and policy-makers sprang into action as standard reaction of regulators was to dust off old proposals that were languishing, for example, under existing “work streams” of the Financial Stability Forum and put them forward as the solution to the crisis. Whether the proposals are adequate to deal with the new reality is unclear.

Myth no.2: “Equity is expensive”

Financial institutions, in particular, argue that equity is an expensive form of finance, whereas debt is comparatively cheap. The providers of debt and equity together bear the risks of investments in firms or projects. Regardless of the financing structure, the overall risk and thus the weighted average cost of capital remains largely unchanged. Small equity cushions are at high risk of loss requiring high returns to compensate. Higher equity cushions can be priced lower as risks per unit of equity are reduced. This so-called “Modigliani-Miller” theorem holds roughly when adjusting for the tax benefits of debt and the expected costs of bankruptcy for debt holders. Debt can only be regarded by private investors as systematically and significantly cheaper than equity if taxpayers provide de facto unremunerated credit insurance. That is, of course, the case and arguably one of the factors leading up to the crisis (Admati et. al. 2011).

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8 The Glass-Steagall Act after the Great Depression ran to just 37 pages (The Economist Feb 18, 2012).
**Myth no. 3: “Diversification creates stability”**

It is now more often recognized that diversification at the level of anyone financial institution may not render the financial system less risky. When all financial institutions have diversified their investments as much as possible they may all hold a similar portfolio. So the system as a whole is not diversified. In addition, a systemic shock can change correlations in ways that are hard to predict and render lots of assets more correlated than expected. Whole classes of assets that were thought to be independent may turn out to behave similarly after all.

**Myth no.4: “Macro-prudential regulation is the answer”**

It seems clear that financial regulation that tries to make the financial system safe by making each institution safe is missing a trick in part for the reasons mentioned above, hence the call for “macro-prudential” regulation. To do their job, regulators are supposed to understand not just each financial institution but the interrelationships between them all and the mechanisms that may lead to systemic shocks as well as the ensuing propagation mechanisms. The ambition is commendable, but it remains unclear whether it is practical. For years academics and regulators have struggled to find ways just to identify bubbles ex ante – with little success. Getting to grips with the more complex task of understanding how everything in the financial sector hangs together sounds as promising as the attempt to make central planning work.

**Myth no.5: “Good regulation will be rule-based”**

Regulators have an unenviable job. They are supposed to supervise their much better paid counterparts in financial institutions. Then they are supposed to “take the punch bowl away” when the party is getting out of hand. Little upside and much downside there for a regulator! They are often at informational disadvantages and it is politically extremely hard to kill off a boom before it is too late. Hence it may only be possible credibly to exercise the trade of regulation, if there is clear information and clear rules that determine when to call an end to the party. There are some hopes that such rules might be identified (Borio and Drehman, 2009). However, for the foreseeable future macro-prudential regulation will remain as much art as science. Second, macro-prudential regulation is likely not an exercise separate from monetary policy (Klein 2011). Multiple instruments, for example, loan-to-value ratios may need to be deployed alongside interest rate policy in ways that remain imperfectly understood. Finally, the too-important-to-fail syndrome seems in no danger of becoming extinct, which makes it all the harder on those trying to control the build-up, for example, of credit bubbles. Good regulation may thus by necessity require the exercise of substantial discretion by supervisors, contrary to the typical academic and political call for “rule-based regulation”. Such discretion needs political support to be effective – a tough act to pull off. Regulation may well be doomed to be pro-cyclical much of the time.

**Myth no.6: “The G20 model provides effective global governance”**

When the crisis hit, the G20 sprang into action. Monetary authorities provided liquidity; governments passed stimulus and bank rescue packages. A meltdown like in the Great Depression was avoided. Yet governments took the actions each out of self-interest. The G20 did not and could not force anyone to do something they did not want to do. The really tough decisions like cross-border bank resolution keep eluding the grasp of policymakers no matter how many meetings are held among players that can all veto each other.
Myth no. 7: “Competition reigns in financial markets”

Financial institutions operate in markets, but they are actually not subject to the full panoply of market forces as normal firms typically are. Various types of creditors are de jure or de facto protected against bankruptcy without paying the full value of such insurance. Taxpayers are exposed instead. A key component of competition is thus missing – exit, or “freedom to fail” in the words of Maggie Thatcher. For a number of financial institutions such an incomplete market as they say “privatizes gains, but socializes losses”. In systemic crises it all too often transpires that taxpayers are equity risk takers without corresponding ownership rights.

Myth no. 8: “Cross-border capital mobility is important for income growth”

The mobility of capital is supposed to improve efficiency and raise income. Indeed the free flow of capital tends to reduce arbitrage opportunities. Greater liquidity reduces spreads in financial markets and thus the costs of transactions. Such “static” efficiency gains, for economic systems with given technology and business models, were sought, for example, through financial market integration in Europe, culminating in a common currency. Yet, economic growth overall is driven primarily by innovations in technology or business models – what has been called “dynamic” gains. In the aftermath of the Great Depression the world saw drastically reduced capital mobility. Yet, productivity growth was at an all-time high in the advanced economies. During the last three decades growth in emerging markets has been fastest in countries that relied on domestic saving, not countries that made use of international capital mobility by importing it (Prasad 2007). Capital mobility was, however, associated with banking crises. The much vaunted static efficiency gains thus may not be a first-order phenomenon and may be linked to increased instability.

Chart 10: Capital mobility and banking crises

Source: Reinhart and Rogoff 2009
Myth no. 9: “More finance is good for growth”

The link between finance and growth has been much discussed and disputed. Clearly finance is important for economic activity. It helps pool savings to facilitate large investments beyond the reach of any individual party. Finance also helps cope with risks. Prior to the recent crisis, statistical analysis suggested that financial systems with greater provision of credit and equity were associated with higher income levels. The leading authors were at pains to point out that it was not the quantity of finance that seemed to drive this, but only quantity data were available to proxy for the presumed real forces (Levine, 2005). But the nuanced message often got lost.

The recent crisis has demonstrated that there can be too much finance and that excessive finance can be positively harmful. This throws the debate back to focus on the hard-to-measure real forces driving growth – notably the quality of decision-making by financial institutions (and corporations) that helps determine which ventures are undertaken, which are allowed to grow and which ones are cut off. Finance in this sense is part and parcel of competition. It helps discover more productive firms (entry), helps them grow and supports exit of failing firms. This is a key mechanism that drives the generation and adoption of new technology and business models – the sources of “dynamic” efficiency gains. And here the missing freedom to fail for some financial institutions is one factor limiting the incentives to make quality decisions.

Myth no. 10: “Deregulation was a policy program”

Pointing out that unfettered financial markets may not be real markets, that capital mobility may be of limited value and that too much finance can be harmful is music to the ears of traditional critics of financial deregulation. Yet, it would be a mistake to assume that the various deregulation efforts that swept the advanced countries by the 1980s, were at heart the result of conscious efforts of “neo-liberal” economists and policy-makers. Deregulation largely happened because policy-makers could not control financial innovation. It started in the 1950s when the new Euro-dollar markets provided a way to hold and trade dollars outside the scope of US interest rate controls. Ironically, Moscow Narodny Bank was one of the early drivers of the Euro-dollar market for fear of asset freezes in the United States. Once players could escape interest rate controls, the controls were doomed to fail. Deregulation followed. The economic arguments that favored deregulation became the dominant ones. In the end the financial crisis put a dent into the trust in deregulation – posthumous revenge by the Soviet Union.

We understand a fair number of things about finance. Yet, our knowledge about how whole financial systems function, how finance interacts with the “real” economy and how politics mix with finance, its “political economy”, remains incompletely understood. Policy-makers rarely do something, because a clever economist said so. But occasionally economists provide options that policymakers like, including broader justifications that may impress the populace. As a result, lots of “stabbing in the dark” by policy-makers is inevitable. The door is also wide open to competing views each cloaking particular interests in the language of the common good.
Economic Realpolitik

Ideas about how to fix policy may be myths or well-thought out. Regardless, when thinking about the future of finance one is ill-served assuming that wise leaders do the best for their people based on dispassionate technical advice. Instead it might help to consider explicitly the incentives of politicians and historical examples of reform.

Dress policy in popular clothes

Unsurprisingly, in times of crisis policy-makers try to capture and respond to the popular mood. Now as after the great depression outrage reigns against excessive risk-taking, powerful, overpaid bankers and markets seen to be out of control. The basic rhetoric is simple. Internet searches easily produce examples such as those from a member of the European Parliament9 who phrased it thus in July 2012: “In any event, we do not exist to serve our economies. Economies exist to serve our needs”. Rajan and Zingales (2003) provide similar examples from the aftermath of the great depression.

As Rajan and Zingales put it: “Democratic governments always claim to interfere with markets to combat monopoly and reduce risk”. Never mind that these two goals are generally incompatible. Monopoly is held in check by competition. Competition in turn means risk. Outrage may well be justified, but the standard response just does not constitute coherent policy and may well serve to disguise what really happens. After the Great Depression an “unlikely coalition of the needy and the incumbents” de facto drove policy. It helped resurrect the power of incumbent players in the financial markets, the very institutions that were the target of popular ire.

Resurrection of incumbents

The basic impulse of policy after a financial crisis tends to be to control the financial sector precisely at a time when financial institutions may actually be prudent, even excessively prudent as a result of the crisis. The prime efforts of regulatory reform are to reduce risk and to prevent the failure of financial institutions, for example, through liquidity and capital requirements of various types. Preventing failure can also be achieved by shoring up controls against competition, which in turn requires failure to function. The backlash against deregulation makes such measures popular. Ostensibly, reformers also try to reduce the threat of “too-important-to fail” by improving bank resolution regimes, i.e. mechanisms that make bank failure manageable and prevent excessive risk-shifting to taxpayers. Yet, this is the area of least progress in the current reform efforts.

Following the Great Depression the controls of the financial sector ended up in a number of cases protecting the original large banks. Competition was held at bay. The government was more influential due to the bail-outs and ended up as a part- or full owner. However, management was often delegated to private managers in well-protected franchises, such as Italian or Japanese banks (Rajan and Zingales, 2003). Corporatist models of banking emerged. The state ended up acting in cahoots with powerful interests buoyed by populist rhetoric. Not all countries reacted in this way. For example, the United States stuck with a more arms-length model of banking. Countries catching up with best practice could still grow fast and the US retained flexibility to innovate. Yet, structural change became progressively more difficult in the corporatist economies.

Financial repression

When public debt levels are as high as today governments have incentives to tax where they can. This may well affect savers and investors. A large array of mechanisms allows governments to tax savers and investors by keeping interest rates low. Governments may resort to outright interest rate controls; they may play with capital controls. In economies that do not face pressure from the foreign exchange markets, the monetary authorities may provide ample liquidity keeping rates low. Unexpected inflation, particularly hyperinflation, may also help in reducing debt. Such mechanisms have been lumped together under the heading “financial repression”. They repress financial markets complicating their functioning. At the same time they can help restore government creditworthiness.

Chart 11: Fiscal revenue from financial repression

<table>
<thead>
<tr>
<th>Country</th>
<th>Public debt/GDP 1945</th>
<th>Public debt/GDP 1956 (actual)</th>
<th>1955 without interest rate controls (est.)</th>
<th>&quot;financial repression&quot; revenue/GDP average: 1946-1955</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>143.8</td>
<td>66.3</td>
<td>195.7</td>
<td>7.4</td>
</tr>
<tr>
<td>Belgium</td>
<td>112.6</td>
<td>63.3</td>
<td>130.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Italy</td>
<td>68.9</td>
<td>38.1</td>
<td>120.2</td>
<td>13.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>52.0</td>
<td>29.6</td>
<td>72.6</td>
<td>5.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>215.6</td>
<td>138.2</td>
<td>233.8</td>
<td>2.6</td>
</tr>
<tr>
<td>United States</td>
<td>116.0</td>
<td>66.2</td>
<td>143.8</td>
<td>5.6</td>
</tr>
</tbody>
</table>

1. The debt-to-GDP ratio corresponds to 1946
2. Italy was in default on its external debt 1940-1946
3. The savings from financial repression are a lower bound, as we use the “official” consumer price index for this period in the calculations and inflation is estimated to have been substantially higher than the official figure (see for example Friedman and Schwartz, 1962).
4. The simple cumulative annual savings without compounding.

Source: Reinhart 2011

It pays to keep real interests on government debt low somehow. Running budget surpluses while maintaining real interest rates at levels that maintain a strong currency and respect the expectations of investors tends to end in lengthy, fruitless austerity as the United Kingdom showed following the First World War. In the words of Keynes, “assuredly it does not pay to be good.” It took until 1990 for UK public debt to approach pre-World War I levels. (IMF 2012b) In the US after World War II on the other hand interest rate controls together with periodic limited bursts of inflation were instrumental in bringing debt down rapidly. During the post war period financial repression was popular in several advanced economies and contributed between 5 and 13 percentage points of GDP a year to improved budget balances in Australia, Belgium, Italy, Sweden and the US (Reinhart 2011).

Financial repression may also be in the interest of incumbent banks. Low deposit and borrowing rates can give room for banks to increase profit as long as low deposit rates are not fully passed through to lending rates. It is a time-honored way of recapitalizing banks and at work in a number of countries right now.
**Hiding reality**

Governments like ways of hiding the true extent of debt they take on. Using off-balance sheet vehicles or instruments and fuzzy accounting is as popular among governments as among certain much-maligned corporations. In Germany, for example, the public development bank, KfW, has been used as a channel for credit to Greece. KfW’s risk is guaranteed by the German government, but this is not reflected in the official fiscal deficit or public debt. Likewise mechanisms like ESM allow governments to take on debt in ways that do not affect the official fiscal accounts. In some cases the use of off-balance sheet mechanisms also allows ruling administrations to avoid the need for parliamentary approval.

Accounting rules for the public sector facilitate such stratagems. Most governments do not present balance sheets and are cavalier in accounting for contingent liabilities. Clever advisors in financial institutions have been all too happy to advise governments on how to sweep problems under the carpet, witness the much discussed role of Goldman Sachs in advising the Greek government on borrowing strategy. A complex derivative transaction in 2001 allowed Greece to reduce its apparent debt by 2 per cent in ways that were actually consistent with official accounting rules for governments issued by Eurostat, the EU’s statistical agency10.

The crisis has shown that government debt can be risky. Yet, the EU’s capital requirements directive allows banks to maintain a zero risk weight to all sovereign exposures within the Eurozone. (IMF GFSR April 2012) Banks thus have an economically unwarranted incentive to lend to dodgy governments within the EU. Creative accounting meets financial repression.

**Competition – step child of politics**

Competition is a key mechanism promoting productivity growth (Hayek, 2002). As mentioned before, it brings the “dynamic” benefits that matter most for growth – new technology, new products, and new business models. When competition is effective, new players can enter a market and test their offering. Successful firms grow. Substandard players are driven out of the market – the process of “creative destruction”.

Yet, the constituency for competition is fragile. Adam Smith famously wrote “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.” (Adam Smith 1776) The development of effective competition requires supportive politics.

Politicians, however, typically try to defend existing companies and existing jobs against new entry and failure. Consumers should like competition, but they are often not well organized and ostensible popular consumer protection can easily undermine competition. Established companies in a particular market are hardly enamored by competition.

Competition is facilitated when markets are disrupted in ways that incumbents (and supportive politicians) cannot control. Those who like competition are new entrants that can see a prize to be had. It may be companies seeking new market share abroad. Thus major well-established companies in the advanced economies had an interest in open trade and investment regimes abroad, albeit not at home.

Technological disruption creates new entrants that have an interest to compete with those exploiting the technology of yesterday.

In the longer run economies that somehow supported adequate competition may come out stronger than those that did not. Notably the chaotic nations of Europe in the late middle ages gave rise to the industrial revolution, the “European Miracle”, whereas centralized China was not able to exploit its then superior technology (Eric Jones, 1981). Competition among jurisdictions allowed new ideas to be tried and developed. The very tensions between squabbling states and principalities laid the ground for innovation.

In public debate strong governance including global governance is often said to be important. At the same time one needs to keep in mind that the disruptive forces that maintain competition may be at odds with powerful governance mechanisms.
Jokers

“Facts on the ground”, clear thinking and political incentives all matter. So do surprises. Prominently, technical progress may evolve in ways that cannot be clearly predicted; so it is with the governability of the world – whether greater divisions globally and, sometimes, domestically can be managed reasonably well.

Productivity growth

Solid productivity growth makes debt reduction easier. The fairly rapid decline of public debt from the post-World War II highs was facilitated by unprecedented productivity growth in the advanced economies. At the time a number of unusually helpful technologies came to fruition: Electricity, internal combustion engines, chemicals and pharmaceuticals, running water and sanitation, entertainment and communication (Gordon 2012). The question now is whether another “golden age of productivity” is just around the corner. Ever since the episode of the 1950s to 1970s productivity growth in the advanced economies has fallen. Both Europe and Japan have also failed to continue catching up with the productivity levels of the United States. It is also conceivable that productivity growth rates might fall back to levels of the 19th century. The potential differences are huge – in the order of up to 2 per cent of per capita income growth annually.

A number of new technologies hold promise to raise productivity further. Communication and computing is becoming cheaper, more powerful and ubiquitous. Moore’s law may well hold another two to three decades promising to double computing power every 2 years or so. Advances in artificial intelligence interact with greater computing power and speed. Grandmasters can no longer beat the best chess computers. Self-driving cars may go into production during the 2020s. In 2011 IBM’s “Watson” beat the top contestants in “Jeopardy”, a US quiz show that requires extensive factual knowledge and the ability to take clues and interpret colloquial questions.

The innovations of the 19th century and the 20th century particularly made physical life easier, not least through the use of energy. The coming innovations may particularly enhance human intellectual capacity. This may displace some types of work, particularly white-collar work or occupations traditionally associated with the middle class. They may also contribute to lifting education across vast numbers of people, for example, through high-quality remote education programs that may still allow for vital interaction with teachers and others facilitated by rapid advances in telecommuting and teleconferencing. New types of collaboration between humans and robots may emerge. Some new types of work are conceivable. For example, in chess it turns out that teams of humans below the level of grandmaster working with chess computers can still beat the single most powerful chess computers (Brynjolfsson and McAfee 2012).

The ability to master, interpret and use vast amounts of information may further improve efficiency across all sorts of businesses and allow significant cost reductions. New materials and “desk-top” manufacturing may combine with more intelligent use of information to render production systems
more flexible and less wasteful. This may yet moderate cost pressures from raw material markets, including energy.

The fastest growing sector in advanced economies is health care. In the US health care already accounts for about 18 per cent of GDP. Costs are rising in other countries as well. Advances in bio-technology, computing and new materials may help control some costs, but may also yield new treatments that raise the overall costs of healthcare.

Apart from affecting aggregate productivity growth technological change may also further affect business models in the financial system, witness Citigroup’s purchase of IBM’s Watson. The financial sector is essentially a business dealing in information. Computing technology has already changed the way financial services function. Yet, compared to the disruption of the book or music business banking, for example, remains little changed. More disruptive changes may yet happen.

Ever growing reliance on computers, robots and electronic communication devices may shift in unpredictable directions, if, for example, rising cyber security problems prove hard to manage. Apart from the cost of security measures, production and communication systems may need to be ring-fenced in new ways that create islands rather than a global integrated system.

Resource costs, for example, for energy may pose challenges to income growth. Yet, during many decades to come physical shortage as such is unlikely to be a problem. The issue is rather one of cost. Both technical advances within the energy sector and energy efficiency measures may help contain cost pressures. The current boom in unconventional forms of oil and gas is just at the beginning. Social resistance may slow or halt it, but not physical scarcity.

The biggest natural impediment to continued productivity growth may be the capacity of the ecosphere to cope with human emissions. Climate change may start to raise costs. At the extreme, tipping points could lead to significant changes in the climate. The next few decades may not be that much affected yet as temperatures may roughly be at levels of the so-called climatic optimum during the Holocene era some 5 to 9 thousand years ago.

The pace of productivity growth will not only be affected by technological possibilities, but by institutions and policies that allow for “creative destruction”. This means openness to the entry of new businesses, support for the good ones and mechanisms to close or restructure failing ones, in short, competition as a discovery process in the sense of Hayek. While productivity growth may vary significantly over time and across countries, the record of the 20th century shows that global growth may nevertheless move ahead fairly steadily. The 20th century was hardly a well-managed one, yet global GDP advanced inexorably. World War I halted growth for two to three years. The Great Depression led to about three years of global GDP decline as did World War II. No other crisis did more than slow growth a bit. Over the century despite World Wars, financial crises and massive failed social experiments like communism and fascism global income growth just marched on – driven more by technology and better management than anything else.

11 The reliance on new forms of intelligence and communication may also radically change the nature of conflict and war. The use of viruses, of drones and other non-traditional forms of weapons may make it harder to define when a conflict starts, who the real parties to the conflict are, when it could be considered to be like a war and how to deal with it.
Central to any scenario is how human societies cope with the opportunities and challenges of the future. At the global level we could experience a sea change in geo-politics. For more than 200 years European countries and the United States were the richest and most powerful economies. For much of the past 150 years first the UK, then the United States were leading countries that shaped events well beyond their borders. Current global institutions like the UN system or the Bretton Woods institutions are inconceivable without the lead role of the United States.

Today the rest of the world is catching up fast – by historical standards – with the “West”. By 2040 it is almost certain that China is at least as large as the US economy and possibly double its size. India may well eclipse the Eurozone, albeit at a substantially lower per capita income. Today African economies south of the Sahara are altogether half as large as Japan. By 2040 they may be double Japan’s size.

The two major forces behind such developments are demographics and the growth of economies catching up with leading economies. Demographic forces are relatively predictable (see above under headwinds). Economies catching up with world best practice can grow much faster than lead countries.
However, they may get stuck on the way, witness Argentina as the poster child of a country that was amongst the richest in the world around 1900 and started trailing the pack ever since the 1930s.

Overall, it is quite likely that the world of 2040 will no longer have a lead country. It may be a much more “multipolar” world than today. Whether the current global institutions will be in good shape is questionable. New attempts to create global governance, like the G20, are far from set to succeed. Advanced countries’ calls for emerging markets to be “responsible stakeholders” in the global system may fall on deaf ears and be met with questions “why become a stakeholder in institutions reflecting traditional powers?”. It may thus be progressively harder to reach agreement on global issues. At the same time true global issues call for attention, notably climate change, nuclear non-proliferation and financial sector reform.

Regional alliances may shift as well. Notably the European Union is in serious danger of disintegrating. The deep troubles of the Eurozone and the reassertion of national sentiments bode ill. The Middle East is in an unpredictable transition period. Trouble is brewing in the South China Sea with multiple territorial disputes ranging from Taiwan to tiny uninhabited islands, not to speak of nuclear-armed North Korea. National – and sometimes religious – sentiment is flaring up. So far significant protectionism has been avoided after the financial crisis of 2008. However, things may yet change.

Domestic politics in advanced countries are complicated by recession. The fall-out from the crisis, not least the current debt levels, is one major factor. At the same time technical change combined with globalization may have been holding back job creation. Many low income jobs have already been affected by low wage competition from developing countries. White collar jobs are also being automated and people elsewhere a being educated better. The middle class in advanced economies is under pressure. Income inequality in most rich countries has deteriorated significantly compared to the post war productivity miracle years.

As people are getting older social security systems start creaking. Not only are middle class and poorer citizens under stress. People growing old face a more uncertain future and may use their votes to block entitlement reform. Domestic politics may have become more divisive. Fertile ground for populism and nationalism is in place.
Getting to yes: leadership

Decision-making will not be easy in the world of tomorrow. Leadership matters, precisely because of so much uncertainty. At the same time the well-established political temptation “to kick the can down the road” remains alive and well, witness the “fiscal cliff” in the United States and the Euro-crisis in the EU.

Today’s crises in advanced economies unfold at a much higher level of income than before. In 1950 the income per capita in the advanced countries of Europe was just about 20 per cent of today’s level. Higher levels of income and wealth allow weathering a crisis better. They also allow bargaining more resolutely as people have on average more options. Leadership may thus be extra hard.

The problems are great, interests may become more divisive and people can afford to insist on their favored positions more easily. The final joker in the pack is thus whether leadership will emerge that provides sound solutions or whether a new bout of un-governability (as in the 1970s) will strike advanced economies.
The last 30 years - Scenarios for financial systems to 2040

The following two scenario sketches are written as future history. They present a view back from the year 2040.

Scenarios are not forecasts. We do not know too much about how the world works. The best we can do is imagine stories about the future that are at once consistent with what we know about how the world works and yet a little radical.

Scenarios need to be plausible and use basic mechanisms that seem to play out during at least parts of history. In that respect scenarios capture the view that “this time is not different”. At the same time, history suggests that there is a high probability that the future may well be radically different from the past in many respects. Good scenarios help challenge “mental maps”, the conscious or instinctive view of many that the future will be like the past. That is their major potential benefit.

Constructing scenarios is somewhat arbitrary. The world can develop in many ways. Scenarios are best anchored around a major question. In the case of this paper the issue is the future operating environment for financial institutions. The two scenario sketches try to lay out significantly different environments such that one can have an animated discussion about how financial institutions would need to position themselves strategically in either of the two worlds.

One could write more than two scenarios. One could embed wars and epidemics. One could imagine bigger booms or collapses. The following scenarios suggest that the operating environment for financial institutions can be radically different even without further major disasters or extravagant positive surprises. The stories are relatively simple and consistent with the historical evidence presented in the first part of the paper. This includes global economic growth, which – over 30 years – is similar in both scenarios, reflecting the experience of the last 150 years, which shows remarkably stable global economic growth despite the ravages of the 20th century. The timing of growth is, however, very different and also the distribution across countries.

Individual countries could experience different fates. The scenarios can easily be adapted to flesh out potential futures for countries of interest. This could include such variations as trouble and fragmentation in China.
Scenario 1: “Repression”

Macro developments

Kicking the can down the road...

By the time the US Federal Reserve embarked on QE 8 in 2022 it became clear even to the last doubter that the Japanese experience after its asset bubble burst in 1991 was less an aberration than a sign of times to come. A divided political class in the US did just enough to keep the fiscal show on the road. Tax reforms were half-hearted, spending cuts skirted the big issues of health care and entitlement reform. The fiscal deficit declined only marginally to around 6 per cent of GDP. Markets almost became used to the periodic “fiscal cliff” scare.

“Fiscal cliff day” to become national holiday

Citizens remained cautious. Many started saving more, and working longer, as the outlook on future pension schemes darkened. The Federal Reserve supported the weak economy by offsetting any private deleveraging by ample liquidity to prop up demand as best as possible. The status of the US dollar as a reserve currency and safe haven enabled interest rates to remain low. Yet, after initial asset valuations had supported growth in demand the effect weakened once assets reached generous valuations. By 2030 gross public debt had reached 160 per cent of GDP. Economic growth bumped along at around 2 per cent annually, with similar levels of per capita growth as in Japan. Labor markets remained under pressure as older people sought to keep working and new labor-saving technologies kept reducing labor demand.

...was the method of choice in advanced economies

Compared to Japan the US looked less exposed. In the land of the rising sun public debt exceeded 300 per cent of GDP by 2030. Lower savings by an ageing population reduced saving. As a consequence Japan’s long-standing current account surplus started to decline, leading to anguished debates about whether Japan might one day have to start borrowing abroad to fund its fiscal deficit. Demanding foreign investors might require higher returns than Japanese domestic investors had been happy with for decades.

Meanwhile in Euroland, the ECB’s monetary policy stance had become known as the “Draghi put”. Whenever the Euro came under pressure, which was repeatedly, the ECB provided ample liquidity to

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12 OECD scenarios but deficit = 6 not 4 %
ensure speculation about the end of the currency died down again. At the same time adjustment processes in the economies of the currency union proceeded haltingly.

When Germany was faced with the prospect of a serious recession in the mid-2010s, it allowed the fiscal deficit to expand to stimulate demand. Buoyed by support from social democrats and greens and, of course, trade unions, relatively generous wage agreements in the Federal Republic helped raise unit labor costs and facilitated wage adjustment in southern European economies. Troubled countries were able to show progress and – just – to manage explosive popular discontent. The ECB accepted inflation in the Eurozone at levels between 3 and 4 per cent for lengthy periods of time to support government debt reduction and facilitate unit labor cost adjustment across member countries. As inflation ticked up Angst returned to Germany. Exit from the Euro became a topic of debate in the country.

Continued credit provided to deficit economies mostly took the form of off-balance sheet support and did not visibly affect the fiscal positions of creditor countries. Government guarantees, the use of development banks including the EIB, KfW and others plus a significant expansion of ECB exposure to sovereigns made it all possible. Official public debt reached 120 per cent of GDP by 2030. Estimates of the various contingent liabilities put it above the level in the United States.

The combination of endless economic trouble and rapidly ageing societies led to sluggish growth in the order of 1 per cent per year. Worried observers noted that interest rates in the Euro area had started to exceed those in the US as the Euro lost some of its attraction as a reserve currency. Nevertheless a weak Euro helped boost the export performance of the Eurozone as a whole. The US on the other hand saw its current account deficit widen again by 2015.

**China focused on economic superiority...**

Meanwhile the Chinese government proceeded on a plodding course balancing rising nationalist sentiment and domestic discontent with policy measures that ended up maintaining solid growth. Incidents of domestic unrest rose from around 10,000 per year in the mid-1990s to well over 100,000 by the mid-2010s involving millions of citizens. The government periodically allowed people to let off steam by tolerating outbursts of nationalist outrage about Japan and other former enemies. Yet, the ruling elite was afraid that such domestic convulsions might end up shaking the existing order. Weakness of economic growth, with rates dipping below 8 percent in the 2010s and the onset of a shrinking labor force by 2015 contributed to the cautious stance of the leadership. In the end views prevailed that an image of responsible conduct in the economic as well as political sphere would simultaneously strengthen the economy, the legitimacy of the regime and enhance geopolitical influence.

**...and “responsible” global policies**

Despite periodic spats with the United States about matters of trade and continuing tension over “currency manipulation”, China kept its calm and the United States accepted the need to compromise in relations with its biggest creditor and trading partner. China in turn allowed foreign corporations to operate in the country and continued to liberalize its capital account. The Renminbi became fully convertible by 2021. At the same time China contributed more to maintaining the security of supply of goods and raw materials.
The US fiscal plight weakened its ability to project military force. Allies, like the Europeans, were neither willing nor able to help. On the contrary Europe cut military expenditures. NATO hollowed out. The growing exploitation of non-conventional oil and gas resources created independence from energy sources outside the Western Hemisphere and reinforced a de facto strategic shift in the US. The new foreign policy reflected more the traditional isolationist streak of the country balanced by a commitment to help keep the peace in East Asia. China meanwhile became increasingly dependent on energy sources and raw materials in Africa and the Middle East. From the small beginnings of help against pirates off Somalia and participation in UN peace-keeping missions in Congo, Lebanon, Liberia and Sudan, China gradually started to project its military power to protect the sea lanes and trade. The new role allowed the military to gain broader experience and to demonstrate its capability. Just before 2020, it successfully intervened in Sudan preventing another civil war. It was also instrumental in preventing conflicts in the Middle East from blocking the Straits of Hormuz, the first time China’s new aircraft carrier capability was openly on display. Importantly China helped facilitate North Korea’s recent move to a market economy and its decision to abandon nuclear weapons.

Economically, China’s growth continued on a solid path, albeit slowed by a shrinking labor force and the shrinking scope to catch up with productivity levels in the world’s leading economies. In 2017 China overtook the US as the largest economy in the world. By 2030 China, with growth slowing to barely 4 per cent annually, was half as large again as the United States. Yet, per capita income had barely reached 40 per cent of that in the United States.

Thus a new reserve currency was born ...

China’s responsible posture and rising wealth had the expected effect. Trading partners started to trust the Renminbi as the typical currency for transactions with China. By the mid-2020s a growing share of global trade was denominated in Renminbi even when China was not a partner to the transaction. The currency was also increasingly used for reserves by monetary authorities. The weakness of the Euro and the continuing travails of the US provided sufficient incentive to diversify holdings beyond the traditional currencies.

Reflecting growing US current account deficits and external debt as well as the emerging strength of the Renminbi, the dollar started weakening. Initially, this was welcomed in the US as it promised to strengthen its trade position. However, currency markets started to require higher interest rates to finance the growing US deficit. The time of cheap liquidity was coming to an end.

Rising interest rates led to a deflation of asset values previously buoyed by seemingly interminable QEs. Demand weakened. The fiscal accounts came under pressure. Each percentage rise in the cost of US debt translated into an increase in fiscal debt service payments equivalent to 1.6 per cent of GDP. US economic growth weakened. A nation unused to being second entered a time of panicky debate. To some degree the weakening dollar promised to help shrink the current account deficit of the United States. Yet, progress was slow. The country that had forever preached the virtues of free markets to other nations resorted to a variety of measures to shore up its defenses against seemingly merciless competitors and capital markets.

Bits of trade protection were mixed with limits on capital mobility and ways to induce investors to hold treasury paper. Under the guise of prudential regulation liquidity requirements were toughened forcing

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\(^{13}\) PPP basis, OECD 2017
not only banks but other large financial institutions to hold government bonds at very low interest rates. Predictably, this reinforced fears of foreign investors. Yet the very size and importance of the US provided some leeway. The large domestic capital market held captive through capital controls such as special transaction taxes and additional regulatory approval requirements continued investing at low rates in government paper.

...cementing China’s rise

When China announced the integration of Taiwan with the PRC in 2038 under a model reminiscent of that of Hongkong, the US had neither the will nor the ability to risk military confrontation over the issue. By now it is utterly clear that serious adjustment has to be undertaken to reestablish the economic health of the US and its ability to project power.

Today Europe’s future looks a bit brighter. Economically and politically the EU has been able to pull through and hold together. Yet, the Indian economy surpassed that of the entire Eurozone just after 2030. An assertive Russia continues to bother EU member states in Eastern Europe. Turkey has become one of the major forces to reckon with in any Middle East Policy.

Financial Repression

Under the banner of prudential regulation...

For roughly two decades after the Great Recession, the major advanced economies have been able to make do. Policies were geared to the prime problem – coping with vast amounts of debt. Many financial sector policies were ostensibly put in place to prevent “the next crisis”. Yet, the immediate problem predictably took precedent. In practice many ostensibly prudential policies were deployed to cheapen credit, in particular to governments. Faced with continuous worries about unemployment and the fragile middle class governments also intervened to prop up credit supply to selected sectors, like small and medium enterprises. Monetary authorities played along. Citing “broken” transmission mechanisms” monetary authorities intervened to purchase selected asset classes, starting with mortgage-based securities early on.

The Great Recession had exposed the dangers of liquidity shortages. In response regulators introduced a variety of liquidity requirements. De facto this helped finance government deficits as treasury paper was decreed to be liquid, even in cases where market data told another story. A blatant early example was the European Capital Requirements Directive, which maintained a zero risk weighting for sovereign debt from EU members, even those that seemed just about bankrupt. Reserve and liquidity requirements not only made sure governments received credit, but interest rates could also be set low by regulators, sometimes at zero. Europe’s financial system with its great reliance on banks lent itself for the purpose.

...depositors and investors were taxed in support of fiscal policy

Unsurprisingly banks passed on lower returns in the form of lower deposit rates. In Europe, in return for deposit insurance more and more banks were obliged to maintain low deposit rates, sometimes via explicit fees, sometimes via regulatory requirements. In addition, the liquidity requirements reduced the scope for maturity transformation by banks. Banks focused on low-risk, large customers for working
capital finance. Smaller firms faced tough times. To some degree unconventional monetary policy and special government guarantees supported credit-starved market segments. Of course, such interventions raised government contingent liabilities directly or via potential future central bank losses. As a result governments needed to use these mechanisms sparingly. The result was intervention in favor of politically important constituencies.

The forces of “creative destruction” were suppressed in the process...

Firms without a high amount of retained earnings had trouble financing investments. The beneficiaries were large firms or conglomerates able to finance investment internally. The continued use of targeted credit schemes and the lack of bank-based investment finance subtly changed markets. New entry of innovative firms was harder than before. Large incumbent firms grew in importance. Targeted credit enabled some underperforming firms to continue operating.

The all-important mechanism of “creative destruction” that ultimately drives productivity and income growth was steadily undermined. European governments did not really mind. Early on in the crisis they had opposed restructuring of failing firms for fear of resulting unemployment. As the role of large firms became even greater as did their political influence. Not “rocking the boat” was in everybody’s interest. The resulting long-term drag on growth complicated macro-economic adjustment further.

...reviving corporatist systems

A corporatist system evolved. Banks were the hand-maidens of politicians for deficit finance. In turn banks were able to persuade regulators to limit competition. In Germany, for example, there had been a long-standing political aversion to private equity investors. Even well before the Great Recession, they were famously called “locusts” by the then Chairman of the Social Democratic Party, Franz Muentefering. It came naturally to the political class and regulators to clamp down on emerging non-banks or capital-market based innovations in the name of stability.

All over Europe banks were weak as a result of the fiscal problems of troubled Eurozone countries. Banks were shored up or taken over by governments with limited taste for solutions that would wipe out bad debts so that markets could start afresh. Early on it was widely noted that Europe had not closed or “resolved” a single bank, whereas the US had allowed over 400 banks to fail in the first four years after the Great Recession.
Deutsche Bank party song: I’m turning Japanese, I really think so...

In the US banks were not so important. Still the ones that survived grew ever larger. Too-big-to-fail was almost policy, notwithstanding much ado about “living wills”. While capital markets provided extra options to firms in the US regulators managed to direct funds to the government as well although to a lesser degree than in Europe. For example, the drive to restrict OTC markets and the creation of growth of formal exchanges led to liquidity and capital requirements to ensure the greater risk concentration in exchanges would not lead to disaster. The continuing strength of the US dollar also made it easier for the US government to raise funds at attractive rates for longer than Europe.

The home bias in finance increased again...

Regulation exerted further pronounced effects on financial markets. In particular, it started reversing the globalization of finance. Concerns of regulators about currency mismatch and other risks of investing abroad led to regulations creating a stronger home bias for banks. In addition, worries about bank failures and the challenges of bank resolution led to strict limits on cross-border branch banking and requirements for financial institutions to establish foreign presence through legally separate subsidiaries. Such subsidiaries were required to maintain essential facilities for operations within each country. It should not have come as a surprise. Even before the Great Recession, for example, New Zealand had insisted that its mostly Australian owned banks maintained essential facilities within New Zealand so that in case of trouble regulators could intervene, close a bank on Friday and reopen it on Monday14. From the perspective of the fiscal authorities in Europe and the US such regulations acted like capital controls keeping funds at home to fund the all-important public debt.

There was thus persistent political interest in having regulation serve fiscal and political goals. At the same time the much discussed need for a broader remit for regulation and macro-prudential regulation in particular provided the rationale for new control mechanisms. Textbooks and financial market participants kept arguing that regulation should be rule-based with minimum discretion. Yet, the fact that more complex regulation also required more discretion came in handy. In the words of a former IMF staffer the new regulatory approach in the advanced economies was dubbed “India-light” – a reference to the discretionary, political ways traditionally associated with Indian financial regulation. Large financial institutions first lobbied against the trend. Yet, particularly in Europe they came to see that they could benefit by agreeing to go along while persuading regulators to limit competition. The traditional link between large financial institutions and politics strengthened on both sides of the Atlantic.

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14 The standard FDIC approach
“Incest is a game the whole financial sector can play”

...and long-term returns disappointed...

For easily two decades the return environment in advanced financial markets provided few pleasures to many arms-length investors. A combination of central bank liquidity and a slew of regulations kept returns on deposits and treasury paper low. Prior to the great recession typically the real “risk-free rate” on treasury paper was deemed to be in the order of 1 to 2 per cent. Yet, for the period 2010 to 2030 it turned out to be 0 or less in the US. In Europe it was similar. While the Euro started weakening persistently in the 2020s the rising trade surpluses of the Eurozone combined with financial repression via regulation kept real rates on government debt of key countries like Germany low. Equity markets disappointed after the valuation boost from the initial quantitative easing programs. Average equity risk premia remained low in the order of 2 percent. As a result many long-term investors were not able to earn more than 3 per cent on their investments in real terms for as long as 20 years.

The effects on pension and life insurance were dramatic. Saving 10,000 dollars per year used to yield 370,000 dollars after 20 years. Yet between 2010 and 2030 people could deem themselves lucky to obtain 270,000. Pension plans that had previously assumed a real return in the order of 6 per cent were under water. When the Renminbi became a reserve currency next to the dollar and, to a lesser extent the Euro, capital outflows from the old to the new reserve currency put upward pressure on dollar and Euro interest rates. As a result asset prices denominated in the latter currencies declined complicating pension and insurance management further.

Payment problems of pension and insurance schemes increased regulatory scrutiny further. Regulators had already early on insisted on greater equity and liquidity cushions. While it made such schemes a little safer, the main effects were to support cheap fiscal funding and to reduce returns to investors. This compounded the disappointments with private pension schemes, which already before the Great Recession returned less than simple benchmarks (OECD).

Investment in Africa and Asia boomed as institutional investors looked to make best use of the last continent with a growing labor force to take care of the ageing population in rich countries. Yet, the increased home bias of finance made investment in the advancing economies of Asia and Africa harder. Portfolio equity investors missed out on the Africa boom as regulators capped cross-border investment for pension funds and insurance companies. The only parts of the world that still benefitted from a demographic dividend were thus of reduced value to enhance returns for ageing savers in the advanced economies.
...forcing workers to remain active into their 70s

As more and more pension schemes shifted the risk of low performance to investors, pensioners were forced to save more and work longer. At the same time governments were politically forced to take over more pensioners who fell on hard times under public schemes. The predictable result was an increase in retirement ages, which are now above 70 years in most advanced economies. With variations by country a side effect was greater government ownership of contractual saving schemes, particularly in Europe.

Global scene

Despite a heavier hand of the state in finance...

Worldwide regulatory approaches to financial systems erred on the side of interference. The apparent demise of the supremacy of the free market played into the hand of many politicians who doubted the dogma and resented the loss of political influence from market reform. State ownership in the financial sector made a steady comeback. Given that taxpayers were de facto underwriting many financial institutions anyway, there was no real market in the sense that “exit” was largely missing. At the same time enhanced political control over the financial sector was music to the ears of elites in many countries.

Growth performance varied across countries. The democratic regimes of Latin America and India saw the downside of “inclusion”. Democracy allowed clientelist politics to be sustained. In some sense the late Hugo Chavez of Venezuela showed the way. Populist policies supported by low-income voters were often sufficient to block the forces of creative destruction that would have been needed radically to improve productivity growth.

Intriguingly some authoritarian countries, notably China, were able to grow faster. Here limits on participation allowed structural changes to occur, ranging from the build-out of infrastructure and the creation of modern cities to adjustments in laws and regulation. At the same time, the size of the economy and the sheer number of people in “the elite” allowed significant competition to happen in the real sector. Taking a page out of the success of Singapore the Chinese government continued to improve the functioning of markets, while keeping tabs on the financial sector. Controlling key positions in the financial sector allowed the communist party to benefit from the productivity gains created by competing private firms and quasi-private firms owned by rivaling organs of the state.

... global growth was propped up by ample liquidity and catch-up of poor countries

In retrospect global economic growth over the last 30 years was respectable. The ample global liquidity underpinned demand. Emerging markets led by China kept up respectable growth rates, although India disappointed. Even so today, in 2040, the size of the Indian economy exceeds that of the Eurozone. Emerging markets account for two thirds of the global economy, the old advanced economies just one third. The rise of China seems to be slowing, though. A declining population and halting productivity growth led to disappointing performance in recent years. The US on the other hand buoyed by solid population growth has started to shed the legacy problems of the great depression. Shell-shocked by Taiwan’s integration into the PRC the US found the political strength and purpose to tackle debt and
entitlement issues. Those who thought the 21st century would be dominated by China are thinking again.

The shifting fortunes of nations have been reflected in the location of the main financial centers. New York continues in a pre-eminent position, but now rivaled by Shanghai and to a lesser degree Hong Kong. London remains important, but in a second tier with Singapore and disappointing Mumbai.

International financial governance continues to remain elusive. To some degree the rise of emerging markets is reflected in the governance structures of the IMF and World Bank. At the annual meeting of the Bretton Woods institutions in 2039 the Chinese Managing Director of the Fund and the Indian President of the World Bank were faced with persistent challenges from African governors demanding a greater role for the continent. After all, for years the resources of the institutions have lagged behind the expansion of countries and mainly serve as a convenient meeting place for economic policy-makers and financiers and to support low income countries.

Postscript

In one of the seminars at the annual meeting former Nobel Prize winners were honored. Paul Krugmann, who turned 86 this year, worried about growth in major emerging markets recommending ample liquidity provision for the slowing Chinese economy, which according to him was otherwise doomed to “turn Japanese” at a much too low per capita income. In a video-blog from his retirement home Martin Feldstein, now 100, decried Krugman’s “same old, same old rant”. Meanwhile Martin Hellwig, 90, at a dinner at the BIS in Basel lamented that there was still no conceptual underpinning for official capital regulation, while it was clear that the process had been hijacked by vested interests.
Scenario 2: “Turbulence”

The Euro-quake and its aftershocks

It was not supposed to end this way, but the centrifugal forces in Europe became just too strong. The Nobel peace prize awarded to the EU in 2012 came to mark the beginning of the end. The new ECB building in Frankfurt’s Ostend was finished just in time for the collapse of the Euro. Several countries of the Eurozone had just no hope for honoring their debts. Others such as Germany wanted to stop paying without, however, accepting significant official debt restructuring. Small countries like Slovakia were upset that they were called upon to bail out much richer ones. The British referendum in the lead up to the 2014 elections produced a clear majority for leaving the EU.

The ECB’s commitment to save the Euro, the “Draghi put” was credited with saving the Eurozone. Bond prices for distressed governments fell. Yet, by the same token the pressure on governments to reform subsided. For example, at the European level the attempts to break the link between banking crises and sovereign debt were de facto abandoned. At the national level Italy turned out to be a major headache. Contrary to Greece, Portugal and Spain Italy had reformed very little. Unit labor costs in Italy did not adjust to make exports more competitive. Growth declined. Already in 2012 Italy was the second worst performer in the Eurozone, rivaled only by Greece, but with less reform efforts. Traditionally Italy was able to roll over its high debts easily as fiscal deficits seemed manageable. When the country became even harder to govern after the 2013 elections, growth and fiscal deficits suffered further and markets started taking fright. Official ECB policy required strong reform as the quid pro duo for help with liquidity. Yet even the most charitable view of government policy could not be construed to constitute “reform”.

Contagion was back. Panicky capital markets drove interest rates ever higher for major debtor economies of the Eurozone. Neither Italy nor Spain looked salvageable. The German Bundestag – with the country now in recession for the second year – blocked any efforts to activate the ESM for fear of taking on excessive contingent liabilities. The ECB could not afford to activate unconventional monetary policies without an ESM program in the face of German threats that hinted at an exit of the country from the Euro. As the Euro fell and recession deepened national sentiments remained in ascendance.

The demise of the Eurozone...

Belgian elections clearly showed the split of the country with independence parties gaining majorities. In 2014 the brew of diverging sentiments became toxic. Belgium split citing Czechoslovakia as a model. When the UK actually left the EU in 2015, Catalonia also declared independence. The legal and practical implications were far from clear. Amidst the turmoil the Greek government decided to default on all its debts. Having just reached a primary fiscal surplus the move was seen to be the clear next step for the country to end a depression as deep as the US in the 1930s with an overall fall of GDP from 2008 to 2014 of about 30 per cent.

As prominent economists like Barry Eichengreen had long observed, the meltdown of the Eurozone and the EU constituted the biggest economic and financial crisis the world had ever seen. In effect, the largest economic entity of the world was thrown into disarray. Interest rates rose, defaults started to
spread, the currency weakened, and above all the contractual implications were utterly confusing as the Eurozone started to tear itself apart.

*...shook the world...*

Banking systems inside Europe and in creditor countries like the US experienced panic at a scale surpassing that of the “Lehman shock” of 2008, even though many US banks had limited their exposure to the Eurozone. As the global economy was sucked into the turmoil economic growth collapsed on a scale even larger than in 2009. Belated efforts by the European Central Bank to stem the tide with liquidity did little to prevent the panic as legal uncertainty about the status of contract overwhelmed hope for a final rescue. Global GDP in 2015 shrank by 1.5 per cent\(^\text{15}\). Emerging markets that had softened the blow in 2009 had less policy ammunition left to stimulate demand. This time they barely managed growth of 1.5 per cent, while advanced economies as a group shrank by about 4 per cent. Debt levels in the advanced economies ratcheted up – as usual mostly due to the fall in tax revenues, but also as a result of the severe banking crises gripping most advanced economies. US gross public debt reached 160 per cent in 2017 with Germany catching up to 160 per cent as well.

**IMF: Default now respectable**

Defaults by several Eurozone countries were inevitable. Portugal, Spain and Italy joined Greece and Wallonie. Major economies like Germany and France saw their credit rating reduced to BBB and A respectively. Most Eastern European economies just scraped by without default and lesser credit downgrades then the Eurozone countries thanks to their relatively low debt levels and flexible exchange rates. Poland, however, was heavily hit by a combination of Germany’s troubles and pre-existing high debt levels.

The introduction of new currencies went more smoothly than expected. By 2016 all Eurozone members had accomplished the transition. Yet, it took the better part of the next five years to sort out the main part of the confusing array of claims and counter claims following the Eurozone break-up. For two years the world economy did not grow at all – a performance unprecedented since the Great Depression.

Shocks and aftershocks hit hard. In the US a gradual shift back towards the center preceded the crisis. Faced with the sudden new shock, tax and spending reforms were enacted that provided hope at least for the longer term. Entitlement reform was initiated combined with a new schedule for staggered increases in retirement age – to reach 72 by 2025.

\(^{15}\) The global GDP decline in 2009 was – 0.6 per cent
...leading to troubles and fragmentation in much of the world

China had just emerged from a wobbly leadership transition. Economic growth had started slowing well before the crisis and room for fiscal or monetary expansion was more circumscribed than at the time of the Great Recession. The collapse of global demand hurt exporters further. As best as possible the government tried to keep the value of the Renminbi low risking some reversals of capital account deregulation in the process. An insecure leadership vacillated trying to balance requirements of economic growth, domestic discontent and rising nationalist sentiment. Shows of military power in the South China Sea almost led to a shooting war with Japan when Chinese warships sank Japanese fishing boats around the Senkaku islands.

Trade and currency disputes between China and the United States became a regular occurrence, even though they paled in the face of the protectionist wave that spread across Europe. Comforted by newfound energy security, the US focused on relations in the Western Hemisphere and attention to potentially explosive conflicts in Asia.

India faced a balance of payments crisis as hard as in 1991. Fear of a return to the “Hindu rate of growth” of little over 3 per cent shook the establishment. As before, the crisis drove the country to action. The government fell back on what worked before: some fiscal reforms including subsidy reductions and further deregulation of service and manufacturing sectors to revive the flagging economy.

Crisis Responses

After the Euro collapse the financial sectors in advanced economies were put through the wringer. First came a series of banking crises. The reemergence of capital controls reinforced a very strong home market bias. Regulators were struggling to get on top of problems. Yet, given the depths of problems, political solutions and the one-size-fits-all “sweep-under-the-carpet” policy of nationalization dominated initially. Financial repression in all its forms was tried in in varying ways in different countries including bouts of hyper-inflation in Greece around 2020. Attempts to control the frightening world of finance and the dangers of globalization were omnipresent in the aftermath of the second great depression.

Central banks that retained some room for maneuver provided liquidity. In the worst cases of dollar shortages the Fed provided swap lines. Many of the individual European central banks, particularly in the core crisis countries had no room to relax monetary policy as investors demanded higher interest rates for fear of inflation. A number of countries attempted various forms of explicit capital controls. The US on the other hand was left as the only true safe haven. Low dollar interest rates combined with well-sequenced fiscal efforts along the lines of the original proposals by the Simpson-Bowles Commission of 2010. Record low energy prices also helped. As a result the US started to recover decisively by 2019.

The lost decade...

Meanwhile Europe at best looked like Latin America in the 1980s, albeit with much higher levels of debt. The level of bad debts vastly exceeded the resources of organizations like the IMF. Debt default became more commonplace. As a little-noted piece of analysis by the BIS had noted in 2009 at the Jackson Hole Conference of central bankers, countries that defaulted tended to grow more strongly afterwards.
(Cecchetti 2009). The depth of the crisis thus prompted countries to do what had always been recommended in the case of banking reform – clean the slate and concentrate on rebuilding.

Unsurprisingly responses to the crisis varied significantly across countries in Europe. Some fell into the familiar spiral of devaluation – inflation and anemic growth. Others shed debt, bore the wrath of capital markets for a year or two, undertook sound structural reform and soon became the darlings of the investor world. For them the crisis achieved what a decade of declarations about the EU Lisbon agenda failed to accomplish – solid reform.

Some observed that it was not just the economic shock that triggered new efforts. The political vacuum in Europe led Russia to assert itself, held back only by the troubles caused by collapsing energy prices. Whether vis-à-vis the Baltic States or when it supported the Greek part of Cyprus against Turkey, Russia’s looming presence drove home to many governments that strength was required.

Fiscal prudence, openness to foreign investment and deregulation of product and labor markets in several European countries ushered in a series of growth miracles in the early 2020s such as Ireland had experienced during the 1990s. In turn this inspired others to follow suit. Exposed to the politics of the volatile politics of the Middle East and wary of Russia energy policy abandoned long held suspicion of fracking and led to massive exploitation of unconventional hydrocarbons in most of Europe, notably Poland.

Germany stuck to its old ways. The resurgence of the Bundesbank and Germany’s old reputation allowed it to retain capital market access. Yet, excessive debts continued to drag it down. By the late 2020s Germany looked more and more like a laggard in Europe. The only consolation was that France provided company in its misery. German “angst” was back.

The 2030s turned out to be a decade of fairly fast economic growth. While international capital movements remained restricted and financial systems heavily controlled in many places productivity boomed as a result of reforms in several countries that allowed new business models to emerge in spades. The new enhanced information technologies lowered costs. Flexible manufacturing technologies destroyed the old economies of scale and allowed countries to perform well even as international supply chains suffered as a result of erratic policies and border controls.
A new breed of gazelle: European “Deer” show the way

The United States regained dynamism even though continued debt problems dragged down growth somewhat. Several European countries boomed – the European “Deers” as they came to be called playing on the OECD’s new acronym for “Dynamic European Economies”. Chinese growth disappointed at times, yet remained steady over the longer haul. In the years since 2030 India grew faster than China every year. The world as a whole grew barely 2 per cent between 2015 and 2225. Yet in the 2030s despite slowing labor force growth very solid average growth of 3.5 per cent was achieved. The 30 year average from 2010 to 2040 thus looks like it is after all reaching a somewhat respectable 3.2 per cent. Now that the global population growth rate has slowed to less than 1 per cent per year, recent growth translates into per capita income growth of around 2.5 per cent for the globe as a whole.

Finance remix

The post crisis world shook up financial systems in many countries. Some forms of “shake-up” looked decidedly traditional. For example, as economies started restructuring, several opened their financial system to foreign investment. Foreign banks not least from China and India built strategic positions in several European markets.

Volatility and disarray...

Importantly, volatility was the name of the game in financial markets for much of the time between the mid-2010s and 2030. Investors and other market participants tried desperately to find safe havens and spots where they could operate without intrusive and erratic regulation. China’s fiddling with the currency and its belligerent foreign policy frightened investors and set back hopes for the Renminbi to become a major reserve currency. The US enhanced its safe haven status due to the demise of the Euro. Yet, in the US heavy-handed convoluted regulation ruled the day combined with ever more aggressive law suits against all sorts of offenders in the financial sector. Class action suits against financial institutions that had unwisely invested small savers’ money in European countries while at the same time selling their debt short were just the icing on the cake.

The disarray was exploited by a number of smaller countries that offered a sound legal environment and light regulation to attract investment by financial institutions. Countries as far apart as Mauritius, Panama, and Singapore made major inroads in the market of financial centers. Even Iceland made a noted come-back. In particular, they offered new operators making use of advanced technology a friendly environment. The disruption of payments systems due not least due to ill-advised use of capital
controls increased the demand for secure payment systems beyond the reach of erratic regulators and policymakers.

...paved the way for disruptive business models in finance

Encrypted, distributed peer-to-peer networks such as the old Bitcoin of 2009 provided real alternatives. Payments in any currency could be made from anywhere in the world using servers in some of the emerging new financial centers and dispute resolution mechanisms in these jurisdictions. In the face of growing currency volatility two new forms of privately issued money became acceptable means of payment for transactions worth over a trillion dollars.

Pocket bankers beat Goldman Sachs performance

The search for solutions circumventing the old troubled banks in clumsy government hands made use of dramatic advances in technology. By the mid-20s mobile digital devices had become as powerful as IBM’s famous “Watson” who was hired as an advisor by Citigroup in 2012. As so often Citigroup’s acquisition did less than well. Yet, “pocket bankers” became all the rage. With the help of such “mini-Watsons” with a capability rivaling that of human brains small groups of individuals could now design and execute complex financial transactions. All the technically complicated information gathering and analysis was more and more carried out by machines. Humans could focus on the basic judgments that data analysis could not yield. Like in the financial crisis of 2008 these judgments are often key, such as whether house prices could actually fall in the US despite existing historic data not showing such events.

From a circle of friends planning for retirement to aggressive investors tiny “Watson support groups” came to make major inroads in many financial markets. Secure systems enabled by new financial centers provided access to financial data, customer data and execution capabilities. Financial e-bays became the platforms of choice for many. Non-traditional competitors from the field of telecommunication or supply chain managers entered the market. In a sense the Euro crisis gave rise to a new form of “Euro markets”, financial markets outside the reach of unfriendly regulators.

16 Operating at levels close to 100 Teraflops
17 Such models were foreshadowed by groups of humans and groups of computers playing together against the most powerful chess computers – and winning (Rage against the machine)
Government tried to reassert control. Yet, never ending disputes in old institutions like the IMF led China to try forging regional arrangements building on early attempts such as the Chiang Mai initiative. China and India left the International Development Association, the soft loan arm of the World Bank in 2033 and created their own development bank focused on helping countries that also provided raw material access to the growing Asian powers. The US attempted to promote regulatory harmonization in the Western Hemisphere with mixed results as apprehensions over the new “Monroe” doctrine made countries reluctant to follow suit.

Postscript

In 2037 the annual Nakamoto conference in honor of the pseudonymous inventor of bitcoin honored the 90th birthday of Ian Angell Professor Emeritus of the London School of Economics. Ian’s vision of a future with private “off-planet banking” at last seems to become reality. Against all odds Ray Kurzweil had just reached 89 and announced his project to download his memory via brain scan into a pocket Watson. In a special comment for the New York Times Paul Krugmann made it clear that it was not really innovations in finance that ushered in the prosperity of the last decade but an end to austerity policies. At the 40th year celebration of the Max-Planck Institute for Research on collective Goods, its first director, Martin Hellwig, noted that, in the world of private money, the social cost of debt had started resembling more the private cost of debt as unremunerated taxpayer support was not credibly available in the small jurisdictions hosting new forms of market participants. “Too-big-to-save” trumps “too-big-to-fail”.

Scenarios are only stabs in the dark. The two scenarios sketched out before rely on some simple mechanisms driving the story.

“Repression” is a story of politicians in advanced economies “kicking the can down the road” while yielding to populist impulses. The provision of fiscal support and liquidity keeps countries in bearable shape. Creative destruction is kept in check yielding little in the way of positive productivity surprises. The financial systems are heavily regulated within country and under cross-border agreements. Insiders dominate. Innovation lags. Business models focus on managing politics and regulatory pressures. The geo-political stance of China as a “responsible stakeholder” creates the trust that allows the Renminbi to become a reserve currency.

“Turbulence” is a story of crises and discord, where governments lose control. Crises force dramatic action, sometimes beneficial, sometimes not. Successful policy experiments set the pace. Discord among nations limits coordinated approaches to global problems like financial regulation. At the same time “islands” of innovation are allowed to emerge and flourish. The business models of financial institutions are disrupted. “Banking goes the way of publishing”.

Economic growth under “repression” is steady. Under “volatility” initial crises lead to collapse. Recovery over a decade or more makes up of some lost growth. Creative destruction ushers in sustained productivity growth. Long-term growth projections are adapted from OECD (2012).
Over the roughly 30 years between 2010 and 2040 global growth is assumed to be similar in both scenarios at about 3.3 per cent per year based on purchasing power parity adjusted exchange rates. The total growth rate is made up of assumptions on population growth based on medium variant UN population forecasts and assumptions on labor productivity growth.
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