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Friction in financials: Old habits die hard

Technology, deregulation and demographics.
Another crisis will come – the only pertinent question is when.

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The company operates with a core team and an extensive network of associates, recognised experts, and strategic business partners, who work on a project-by-project basis.

John Llewellyn, Partner

- Former global chief economist and senior economic policy adviser at Lehman Brothers.
- Almost 20 years at the OECD in Paris, where variously he was head of international forecasting and policy analysis, editor of the OECD Economic Outlook, deputy director for social affairs, manpower and education, and finally chef de cabinet to the Secretary-General.
- Spent nearly 10 years at the Faculty of Economics of the University of Cambridge.

Russell Jones, Partner

- Spent ten years at Lehman Brothers, where he was chief economist for Asia and head of foreign exchange research, and for a period was chief economist for the Treasury Department of the Abu Dhabi Investment Authority.
- Most recently, he was global head of fixed income strategy at Westpac Institutional Bank, where his team was ranked number one in the analysis of the Australian and New Zealand debt markets.
- Published widely, and recently written a book – *The Itinerant Economist*.

Executive summary

The global financial sector today is confronted by a series of novel, complex, and overlapping structural challenges that will accelerate its evolution.

There is little reason to believe that the latest incarnation of finance will necessarily prove more immune to calamity than previous iterations. Numerous fragilities persist. Old habits die hard and another crisis will come. The only pertinent question, is when?

- Financial innovation continues, numerous vulnerabilities remain, and indeed evidence of excess is proliferating.
- Financial cycles are again in an expansionary phase, and many risk premia are aberrantly compressed. This has added impetus to the global cyclical upswing, but at increasing cost.
- Some emerging market economies, not least China, seem particularly susceptible to shocks because of an excessive reliance on credit and evidence of real estate market bubbles.
- After an extended period of regulatory reform, fatigue is setting in and, led by the US, a new wave of financial deregulation beckons that could develop into a 'race to the bottom'.
- New technologies will revolutionise the financial sector, transforming jobs and business models, with lending, broking, payments systems, risk analysis, research, and trading all affected.
- 'Fintech', in the form of national digital currencies, could effectively negate the zero-interest rate bound.
- The stretch for yield, interest in alternative investments, and search for growth markets will continue. China, India, LATAM, and Africa will benefit to the extent they apply judicious policies.

Could it be that …

- The next financial crisis is close at hand and proves worse than the last.
- Financial deregulation accelerates and catalyses the crisis.
- The next global recession originates in the EM economies.
- There is a dramatic decline in the number of financial intermediaries.
- Insurers and asset managers increasingly turn to outsourcing.
- The end of cash as the dominant payment device is near.
- Official interest rates drop well into negative territory in future recessions.
- The City of London is no longer a major financial hub.
- Shanghai becomes a competitor to New York as the world's major financial centre.
- The renminbi becomes a reserve currency by 2025.
- Britain fails to leave the EU altogether.
- Active investment makes a rapid comeback.

From 'too big to fail' to now

Capitalism is prone to crises …

Capitalism has a history of financial bubbles and busts: they are a feature of the system. The 2007-2009 global financial crisis (GFC) is merely the latest in a litany stretching back centuries to the very origins of money and financial markets.[1]

Crises come in many forms, but recurring themes are: excessive accumulation of debt, private or public; rapid inflation of asset prices; ineffective supervision of financial innovation; and criminality. After an initial boom, confidence wanes, and expansions unwind in pernicious feedback loops. Consequent recessions are deep, subsequent recoveries weak. For the 100-odd systemic financial crises since 1857, it has taken on average 8 years for real per capita income to return to pre-crisis levels.[2] And output never re-joins its previous trend line: it is lost permanently.

… bringing painful consequences

These painful consequences reflect undercurrents that booms leave in their wake. The financial sector is broken. Households and/or companies face large debt overhangs and asset-quality problems. And financial booms interact perversely with productivity growth. They can, for a while, mask its secular decline, but they can also undermine it directly, by causing long-lasting resource misallocations in capital and labour. (See figure 1).

Policymakers typically intervene aggressively …

Policymakers typically intervene aggressively, particularly so for devastated financial sectors. Allowing the core of a capitalist economy to collapse, with all the associated collateral damage, is not a politically viable option. This is the essence of 'too big to fail'.

Financial sector rescues are also not cheap. The median *direct* fiscal cost (mainly bank recapitalisations and asset purchases) of the systemic financial crises since 1970 is put at some 7% of a country's GDP and 15% of financial system assets, although in some instances the bill has exceeded 50% of national output.[3] Moreover, if indirect costs are included in the total, the typical monetary bill can easily increase by a factor of three.[4] (See figure 2).

… and their actions can reverberate for decades …

Before the dust settles following crises, governments come under pressure better to protect retail depositors, make the financial system less vulnerable to shocks and prone to excess, and prosecute the perpetrators of financial crimes.[5]

… but meanwhile financial innovations roll on

In their desperation to provide 'meaningful' regulatory redress, governments often inadvertently over-react, causing new distortions and hindering recovery.

Summary: Financial crises seem to be an intrinsic part of the capitalist system.

Tail risk: Financial innovations outrun regulatory reform, and the next crisis is even worse.

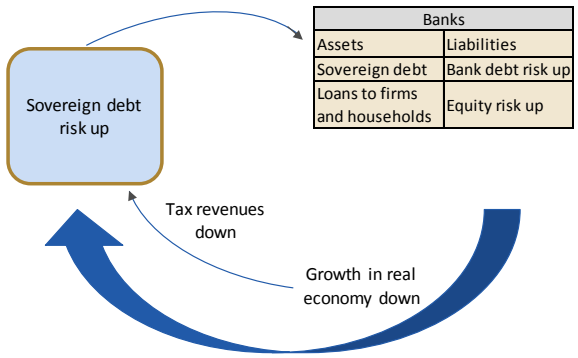
Onslaught of reforms

Regulatory reform has been pursued on many levels …

Considerable efforts have been made to address the causes of the GFC,[6] and to construct a safer, simpler, and fairer global financial system.

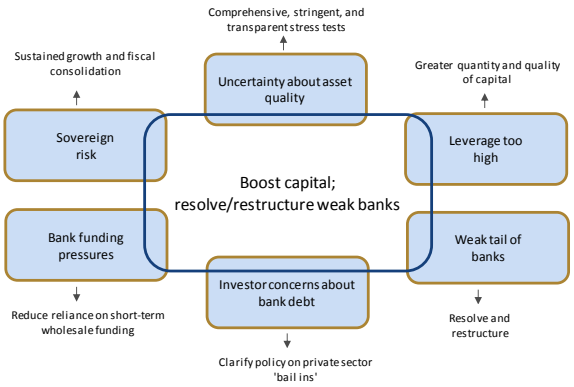
Notwithstanding important remedial work, financial systems still exhibit various weaknesses, some old, some new.

Figure 1: Spill-overs: sovereigns, banks, and the real economy



Source: Llewellyn Consulting

Figure 2: Policy solutions to banking sector problems



Source: IMF and Llewellyn Consulting

The logic of Minskyism

Perhaps the most coherent framework with which to understand this enduring, if depressing, cycle can be ascribed to Hyman Minsky, a US economist whose theory of the nature of financial instability proved extraordinarily prescient in explaining the rollercoaster ride of the global financial system over the past 15 years. (See figure A).

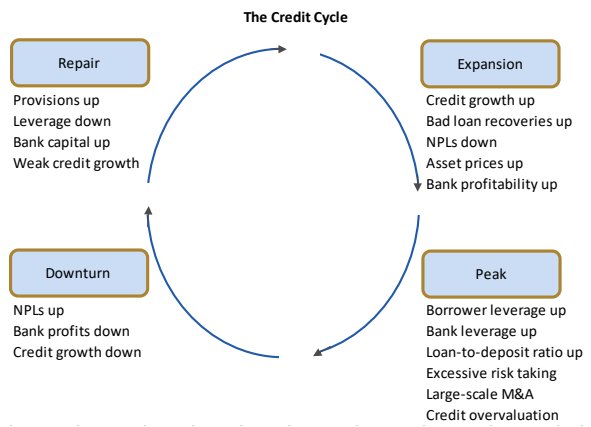
The core of Minsky's theory is that capitalists, observing a stable financial environment, tend to extrapolate the expectation of stability out into the indefinite future. Aided and abetted by the unavoidable information mismatches between borrowers and lenders, this leads them to resort to increasingly risky debt structures, that over time undermine that stability. The longer people make money by taking risk, the more imprudent they become in risk-taking. Initially, the expectation of reward for risk-taking is self-fulfilling. If everyone is simultaneously becoming more risk-seeking, risk premia fall, collateral values rise, the ability to borrow increases and so on, even to the extent that the regulatory environment is eased to become more 'light-touch'. The suggestion is that human nature exhibits a profound pro-cyclical tendency.[7]

In Minsky's schema, economic cycles are characterised by a progression, in forward and reverse, through three types of debt structure: relatively stable 'hedge' financing, in which the buyer's cash flows cover interest and principal payments; more risky 'speculative' finance, in which cash flows cover only interest payments; and, finally, completely unsound 'Ponzi' finance, in which cash flows cover neither, and depend on rising asset prices to keep the buyer solvent.

In August 2007, against a background of large-scale, unsustainable, global macroeconomic imbalances, and a reversal of monetary policy course, associated bubbles burst and market liquidity evaporated, sending the global financial system through its familiar reverse progression. The warning signs were there. (See figure B).

Over time, however, helped by unprecedented macroeconomic policy support, the collapse of this house of cards once again gave way to balance sheet recovery, and ultimately to a new period of stability and growth, that itself now appears to be under threat from excessive sanguinity. This begs the question: are financial systems trapped unavoidably and forever on Minsky's financial rollercoaster?

Figure A: The credit cycle



Source: IMF and Llewellyn Consulting

Figure B: Pre-crisis imbalances/recession indicators

Metric	Mar-00	Oct-07
Trailing price/earnings ratio	33	17
Forward price/earnings ratio	24	14
Dividend yield	1.3	2.1
Cyclically-adjusted price/earnings ratio	48	30
Global equity risk premium	1%	3.3%
US yield curve slope (10Y minus 2Y)	-0.5	0
Global equity fund flows, previous 12 months	$300bn	$50bn
Global Capex Growth (YoY)	8% (1999)	11% (2007)
M&A (previous 6 months, % of market cap)	6.1%	4.2%
IPOs (previous 12 months, % of market cap)	0.7%	0.4%
Global return on equity	12.2%	16.1%
Global EPS Growth, change previous 12 months	14%	14%
Asset/Equity (US Financials)	x 16	x 16
Net Debt/EBITDA (US ex. Fins)	x 1.8	x 1.4
US high-yield bond spread	600bps	600bps
US investment-grade bond spread	175bps	175bps
Number of warning signals	15.5/16	11.5/16

Source: Citi Research and Llewellyn Consulting
Note: Gold shading indicates a warning signal.

… but various weaknesses and risks remain …

The 'shadow banks'. Risks continue to migrate from banks to non-banks, with many still dependent on short-term funding, highly leveraged, weighed down by large derivative exposures, and subject to lighter supervisory and regulatory standards. At end-2015, 'shadow-banking' activity was $92tr, up from $89tr at end-2014. Its share of total financial assets, at nearly 30%, was as much as in 2007, and in many jurisdictions it has grown faster than GDP, not least the EMs.[8]

Volatility and liquidity. Many riskier assets, and higher-yielding bonds and emerging market (EM) debt in particular, remain prone to high volatility and damaging liquidity shortages. (See figure 3).

… in banks, non-banks, and markets …

The rise of ETFs. Low-fee, passive-investing exchange-traded funds (ETFs) have proliferated,[9] now amounting to more than $4tr, potentially bringing new issues.[10] They can distort price discovery, encourage pro-cyclical momentum investing, undermine the role of stock research, and prove susceptible to liquidity mismatches between the underlying securities and the funds themselves.

Better stewardship of the companies in which ETFs invest is vital to sustain adequate corporate governance. (See figure 4).

An unequal playing field. While financial intermediaries have shrunk, end-users have become bigger and more complex.

The banks are not yet fully healed. Much of the banking sector has yet to put the global financial crisis fully behind it. Cross-border lending remains weak, and returns on equity depressed, particularly in Europe. (See figure 5).

There are several explanations for banks' soggy profitability since the crisis:

- Economic growth and client activity have been sluggish.
- Interest rates have been historically low and yield curves flat.
- Regulatory costs have increased.
- Personnel costs have changed little as a proportion of operating income.
- Banks have become less attractive to the brightest and the best.
- New technologies have intensified competition.

… in the insurance sector …

Insurance companies are under duress. Insurers' performance depends upon their business mix and investment returns, as well as the prevalence and nature of legacy-guaranteed return contracts. Many insurance companies struggle with the combination of shallow recovery and low interest rates. Falling interest rates increase the value both of assets and liabilities, but long maturities and negative duration gaps make the net effect negative. Together with low investment returns, this is causing strain, especially for life insurers with guaranteed rates on legacy policies.

… and across pension companies

Insurance and pension companies have responded by shifting towards contracts with reduced (or no) guarantees, as well as unit-linked products, which transfer investment risk to policyholders or reduce benefits. On the asset side, there has been a search (stretch) for yield, often via collective investment vehicles and foreign currency exposure.[11] Even so, the changes in asset composition have failed to prevent a continued fall in investment returns for life and general insurers, encouraging them to head towards even higher yielding alternatives. As of this year, only 20% of fixed income assets yield over 4%, compared with 50% to 100% between 1999 and 2007.

The insurance industry, along with pension companies, remains vulnerable. Portfolios remain heavily weighted towards fixed income products that are vulnerable to short-term cyclical sell-offs in bond markets. (See figure 6).

Summary: Regulations have been reformed significantly, but various weaknesses remain.

Tail risk: Reform fatigue sets in before all major remaining issues have been addressed.

Challenges and opportunities

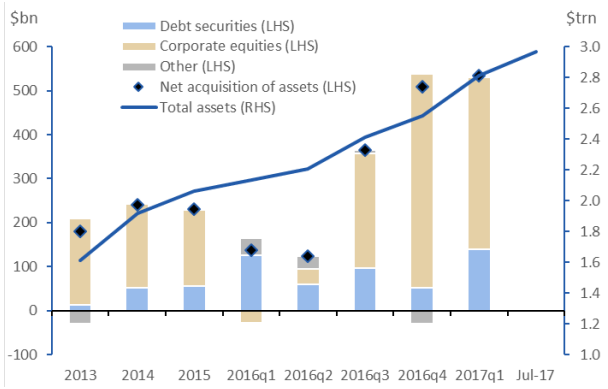
The financial sector will be subjected, over the coming decade and beyond, to a range of powerful and complex forces, including technology, climate change, demographics, and financial policy.

Figure 3: The importance of resilient liquidity

Effect of lower liquidity	Implication
Less market making	More difficult to execute trades without affecting asset prices Greater asset price volatility Further breaches of value-at-risk limits leading to forced asset sales
Reduced repo market activity	Less funding for hedge funds to arbitrage discrepancies in asset prices More difficult to trade short positions, affecting market efficiency More difficult to hedge market risk Likely sporadic 'snapbacks' in some asset prices as dislocations correct
Lower trading in single-name CDS	No single instrument to trade credit risk in an individual company Hedges move to CDS indices; fragmentation of indices/single-name CDS Less efficient hedging of credit exposure
Cutback in interest rate swaps	More difficult to hedge floating or fixed interest rate exposure
Liquidity herding	Greater fragmentation of liquidity and breakdown of asset relationships More difficult to hedge risks in financial markets Greater use of foreign exchange markets as proxy hedges More difficult for banks to manage good-quality liquid asset portfolios

Source: IMF and Llewellyn Consulting

Figure 4: Value of US ETFs



Source: Llewellyn Consulting

Deregulation

There is increasing evidence of reform fatigue. Moreover, in the US, although not elsewhere (at least so far) there is growing political pressure for deregulation. This brings new risks.

Easy monetary policy continues to add to macro risks …

Easy monetary policy worldwide, which has done much to support economic recovery, is also leading to a classic build-up of macroeconomic risk, with term premia minimal, credit spreads tight, equity risk premia depressed, private equity booming, and volatility artificially contained. (See figures 7, 8, and 9).

When economic growth slows, as it ultimately will, it will inevitably bring financial sector issues, probably involving first the riskier asset classes. Therefore, it is somewhat unfortunate the Trump Administration is looking to liberalise the guidelines for various financial sector activities.

… as does proposed US deregulation …

In a report in mid-June, Treasury Secretary Steven Mnuchin detailed proposals that would moderate bank capital, liquidity, and leverage requirements; impose less onerous, less frequent, and more transparent stress tests on larger banks;[12] and ease application of the Volcker Rule.[13]

Many of these initiatives can be enacted without legislation.[14] Furthermore, by mid-2018 the US President will have had the opportunity to replace the heads of all the federal depository regulators, including Janet Yellen at the Fed.

… even though some 'flaws' may be addressed

Deregulation is not without its merits. It is always appropriate to review the regulatory environment. And Dodd-Frank has flaws: it is complex, and focuses on financial entities' legal form rather than economic function. Moreover, its attack on proprietary trading is questionable: such trading did not cause the GFC, and the Volcker Rule seems to have impaired liquidity in the repo, corporate debt, and commercial mortgage-backed securities markets.

On the other hand, two of the Treasury's premises seem dubious. First, there is little evidence that Dodd-Frank has constrained US bank lending to the non-bank private sector: indeed, this has increased, as a proportion of GDP.[15] Furthermore, only a handful of small firms consider that their borrowing needs are not being met,[16] while previously heavily indebted households meanwhile have shrewdly sought aggressively to deleverage: their ratio of liabilities to disposable income is 30-percentage points below the 2007 peak.

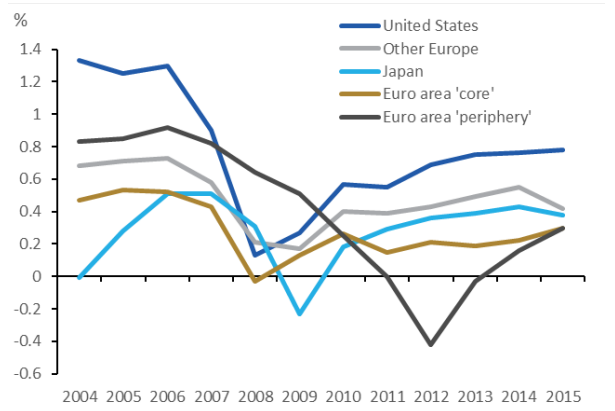
Second, the proposed exceptions to the Fed's examinations of bank balance sheets, and broader loosening of prudential standards, in particular on the largest, most complex, and interconnected entities, could invite gaming of the rules that serious commentators say could cause catastrophe.

A number of EMs are already at high risk of financial crisis

Admittedly, credit growth and property prices in most major economies have been reasonably well behaved relative to nominal GDP growth. The situation in a number of smaller advanced economies however, including Canada and Australia, and in some emerging markets, is different. Indeed, a number of emerging market economies, especially China, now seem at high risk of financial crisis.

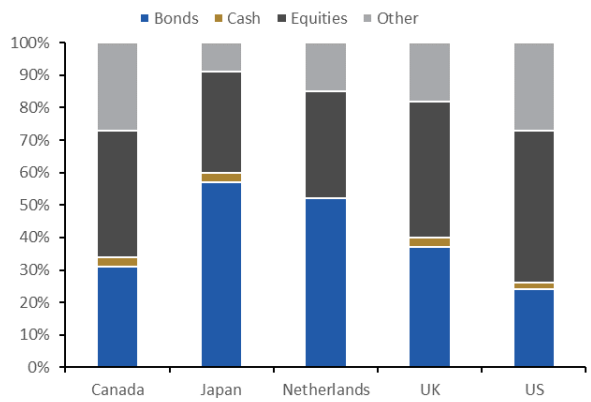
'Credit gaps', or the development of credit ratios relative to a dynamic trend, provide perhaps the best guide to potential vulnerabilities. A 10% credit gap is a powerful warning signal for a crisis over the next three years. Turkey (7.2%), Indonesia (9.3%), Malaysia (9.7%), and Mexico (9.0%) are all close to this threshold. But the widest gaps are in Hong Kong (30.3%), China

Figure 5: Bank returns on assets



Source: IMF and Llewellyn Consulting

Figure 6: Asset allocation of pension funds and insurers, 2015



Source: IMF and Llewellyn Consulting

(24.6%), and Singapore (22%). (See figure 10). Credit gaps also seem to correlate with evidence of property market excess, and real EM property prices are some 30% higher today than during the GFC.[17]

The optimistic view holds that EMs are nowadays better protected against 'sudden stops' in capital inflows. Flexible exchange rate regimes are more common, and current account deficits have fallen. The shortfalls in Argentina, South Africa, Turkey, and Egypt however are concerning; and while many countries have accumulated sizeable FX reserves, some have begun to diminish. Oil exporters' FX reserves have fallen to a 10-year low.[18]

This is particularly concerning …

EM vulnerability is heightened by large overseas holdings of debt and extensive issuance of FX-denominated securities. Some 25% of EM debt is foreign owned, while EM external FX debt stood at around 12% of GDP in 2016, up from 10% in 2007, although lower than the pre-1997 Asian crisis peak of over 18%.

Dollar debt has often been important in EM crises, whether as trigger or amplifier, and the combination of depreciation vis-à-vis the dollar and higher dollar interest rates has proved an especially poisonous cocktail.

… as EMs account for almost two-thirds of global GDP …

The threat of EM financial trauma is increasingly pertinent. EMs today account for almost 60% of global GDP, 36% of world exports, and 86% of the global population. Since the GFC their contribution to global growth has been in the region of 80%.[19]

… and global financial spill-overs are now a fact of life

Financial globalisation has also made asset markets increasingly interdependent. Some 70-80% of equity and foreign exchange returns in both advanced and EM economies are nowadays attributable to international factors. Financial spill-overs are the norm, not the exception. And there is evidence of a growing impact of spill-overs from EM equity and foreign exchange markets.[20] Between 30% and 40% of the variation in advanced and EM economies' stock returns and exchange rate fluctuations can now be attributed to EM financial markets.

Summary: Reform fatigue is fuelling pressures for deregulation.

Tail risk: EM economies spark the next global recession.

Technology

The increasing maturity of new digital technologies, and the combination of these with existing technologies, stands to have particularly far-reaching impacts on the financial sector.

New technologies are transforming financial services

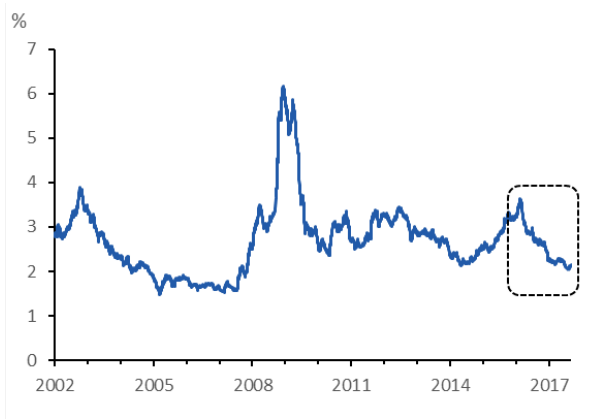
The major innovations that will ripple through banking, insurance, and asset management include: big data analytics; artificial intelligence (AI) (machine learning in particular); and 'blockchain' technology.

Jobs and business models are already being transformed. In the financial sector, lending, broking, payments, risk analysis, research, and trading are all starting to undergo major change. The large commercial banks, investment banks, insurance companies, hedge funds, and others are all investing heavily in these areas.

Many jobs could be lost over the next seven years

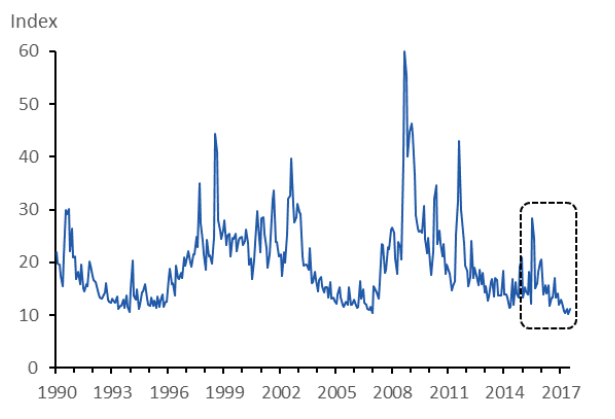
Estimates are frequently made of the likely impact on employment. One such, as reported by the FT, is that globally, over the coming seven years, as many as 90,000 jobs could be lost in asset

Figure 7: BAA corporate bond spread to 10-year Treasury



Source: Macrobond and Llewellyn Consulting

Figure 8: VIX index



Source: Macrobond and Llewellyn Consulting

management alone as a result of technology in general, and AI in particular. And back offices, operations, and customer services all seem likely to experience the greatest change.[21]

Whether such assessments will prove to be broadly correct, however, will depend importantly on a range of factors.

- First, the pace of technological revolution itself. This is uncertain, facing as it does a number of intrinsic constraints, including: data availability, interoperability, accessibility, ownership, quality, traceability, privacy, and security.
- Second, differences in educational, industrial organisation, and training systems. Some countries' systems will prove superior, while others will struggle.
- Third, within the workplace, the ability of managers and employees to figure out how best to use the new technologies, and then implement them effectively.
- Fourth, policy, including particularly in respect of data handling and storage. Many, perhaps most, governments seem so far to have a far from complete understanding in this general area. A good regulatory framework can facilitate constructive change, while poor or outdated regulation can hinder it.

Changes will be substantive and widespread

Over the coming decade, as firms become increasingly digitised, business processes will become more highly integrated and efficient. Broader and deeper task and process automation will reduce the need for trusted intermediaries that sit in the middle of transactions. In particular:

- Banks' traditional role in credit intermediation will be increasingly challenged.
- Equity 'crowdfunding' will expand.
- Quantitative (algorithmic) trading will become yet more prevalent, smart, and autonomous.
- Investment research will change beyond recognition.
- Online payment systems (e.g. PayPal) and cryptocurrencies (e.g. Bitcoin) will proliferate.
- Other innovations leveraging 'blockchain' (or distributed ledger) technology will provide new ways of transferring value securely, lowering transaction costs.
- 'Sell-side' middle-men/market-makers will become increasingly redundant.
- 'Buy-side' business models will necessarily have to adapt.

Algorithms already conduct more trades than do humans

Algorithms already conduct more (autonomous) trades in the US financial markets than do humans. This is particularly the case in respect of stocks, but is also apparent in other areas including derivatives and foreign exchange. (See figures 11 and 12). And this is just the beginning. The combination of new and existing technologies will render 'smart' algorithms/processes increasingly capable of performing cognitive tasks humans cannot. This will cut costs and improve product quality by offering greater choice, transparency, and real-time access/control right across the sector.

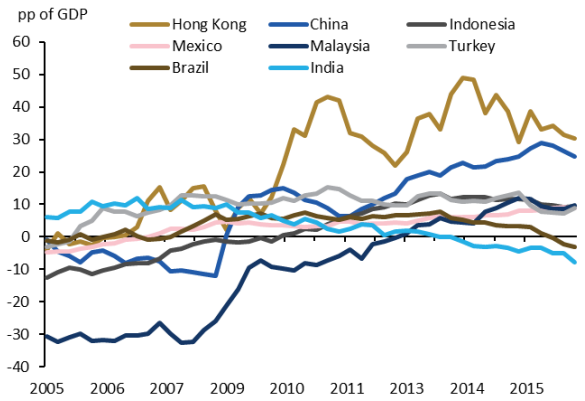
Blockchain stands to be particularly transformative …

Blockchain could be a game changer for financial services. The potential impacts of the underlying technology go well beyond digital numeraires. Blockchain technology can be applied to any multi-step transaction where traceability and visibility are required. Hence, it can work for almost every transaction involving value. Supply chains are a fertile area where it could be utilised to manage and sign contracts as well as audit product provenance.

Figure 9: Shiller cyclically-adjusted price/earnings ratio

Source: Macrobond and Llewellyn Consulting

Figure 10: Credit to GDP gaps relative to trend



Source: Macrobond, BIS, and Llewellyn Consulting

Currently only around $20bn (around 0.025% of global GDP) is held in the blockchain.[22] But this figure will rise sharply in the coming decade, as banks, insurers, and others see it as a way to speed up settlements and cut costs.

Central banks are now also actively researching the use of blockchain technology to create national electronic currencies.[23]

… and could even eradicate the zero-interest rate bound

One powerful attraction of such initiatives is that, in the absence of cash, any constraint on the technical ability of policymakers to impose significantly negative interest rates, the requirement for which may become more common, is removed. Another would be the ability of policymakers to target specific regions or demographic groups. That said, either option would be politically fraught.

Summary: Technology is set to continue disrupting all aspects of the financial services industry.

Tail risk: The pace of change is so rapid that it creates major new unforeseen vulnerabilities.

Demography

Population ageing is lowering growth and interest rates …

Ageing populations have been a primary driver of slowing growth and falling equilibrium interest rates.[24] (See figure 13). To the extent that they continue to depress nominal and real interest rates, and returns on financial assets, the effects on the financial sector will be wide-ranging:

- **Yield curves** stand to be flatter than when growth and interest rates are higher.
- **Bank profits.** While lower interest rates initially boost bank profits due to gains in collateral and asset values, and lower default risk on loans repriced to lower interest rates,[25] longer term they hurt profitability of deposit-dependent banks.

… while influencing financial sector profitability and risk

- **Risk exposure.** Smaller banks will feel pressure to take on more interest rate risk by increasing the duration of their bond portfolios. Larger banks will probably resort more to wholesale funding, and increase their exposure to EMs.
- **Existential threat to life insurers and pension funds.** Many defined-benefit pension schemes are in serious deficit. Life insurers and pension assets are often of significantly shorter duration than their liabilities. Low interest rates and a flat yield curve compel them to reinvest at lower rates of return much sooner than their higher fixed-rate obligations fall due, forcing them to reduce benefits to policyholders. (See figure 14).

It will reduce household demand for credit …

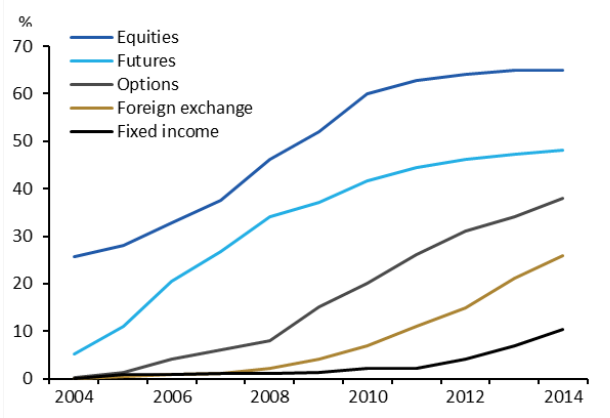
There will be continuing changes in household demand for financial products and asset allocation; in the relative roles of institutions; and in markets in financial intermediation. Ageing will reduce household demand for credit, while increasing demand for transactions services from banks. Rising longevity will raise demand for health and long-term care insurance. Retail demand for asset management products will continue to expand, especially for passive low-fee investments.

… while raising demand for other services

Pressure on smaller banks will encourage consolidation, and lending focused more on small businesses as household demand retreats, and larger corporates fall back on internal financing. Insurers may well pass on some of their savings business to asset managers and banks.

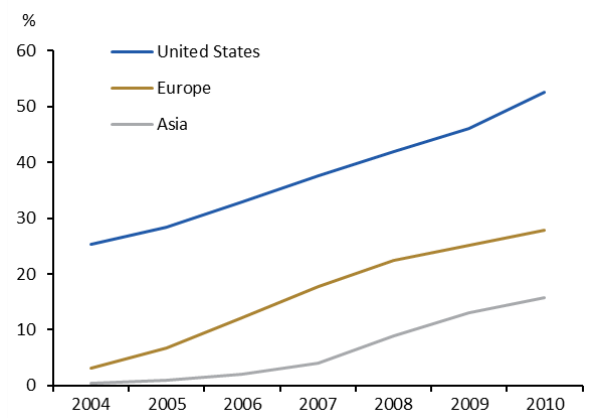
Regulators, under pressure to limit risk-taking, will constrain banks' inclination to engage in

Figure 11: US - algorithmic trading as a share of total by asset class



Source: OECD and Llewellyn Consulting

Figure 12: Algorithmic trading as a share of total, all assets



Source: OECD and Llewellyn Consulting

widening maturity transformation, greater wholesale funding, and increased foreign currency exposure, and for pension funds to 'gamble for resurrection'.

Summary: Macroeconomic consequences of ageing populations will ramify across the sector.

Tail risk: The demise of banks as currently structured.

Populism

Populism is undermining many past certainties

Populist movements embrace: prioritisation of narrow, short-term, domestic interests; denunciation of 'elites' and powerbrokers; attacks on prevailing institutions; contempt for history, experts, and political correctness; and desire for strong leadership.[26]

Causes of modern-day populism include: income inequality; employment insecurity; disappointed expectations; fiscal austerity; perceived 'loss of control'; desire for 'instantaneous recompense'; and complacency, both governmental and on the part of an uncomprehending broader population. (See figures 15 and 16).

'Reasoning' is often half-baked and short-sighted

Populists typically view the world through a 'partial' framework.[27] Their response to issues is usually narrow and clumsy, confuses symptom with cause, and ignores likely broader ramifications. When the consequences prove unacceptable, they are addressed with further heavy-handed initiatives. The net outcome is often more malign than the original issue.

Populism is nevertheless a fact of life; and the financial sector, like all society, has to adjust.

Financial institutions will need to be agile. Greater weight will have to be accorded to public and government relations. Decision-making will have to pay more attention to political risk, the predilections of those in power, and to tail risks, both domestic and international.

Higher probability will need to be accorded to the possibility of war, including cyber-attacks. Capital and liquidity buffers may need to be kept higher than mandated by the authorities. Products and services may have to be redesigned for the new, riskier, environment.

Summary: Populism threatens to upend the established economic and financial order.

Tail risk: Protectionism burgeons, and the global financial system becomes 'Balkanised'.

The evolving EU and Brexit

The EU faces myriad challenges

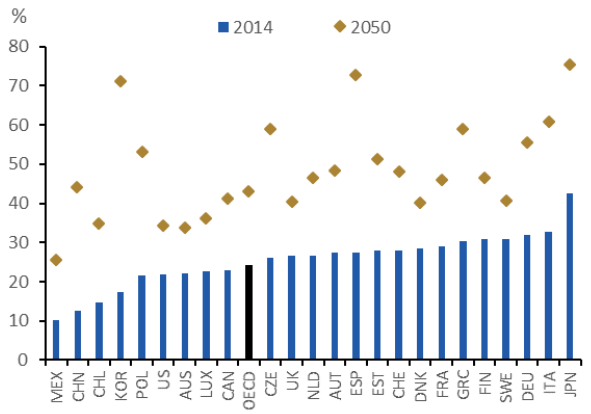
The European Union (EU) remains a work in progress and also faces various other issues, including Russia; irregular migration; the 'peripheral' economies; Poland; Hungary; CMU; and Brexit. Overall, the EU financial system remains somewhat fragile. But the euro-area economy is currently growing satisfactorily, giving time for progress with needed reforms.

Brexit will be troublesome

Brexit stands to be troublesome. The EU is of bigger economic and financial significance for the UK than is the UK to the EU; but both sides will be hurt unless the final arrangements do not fundamentally change the status quo.

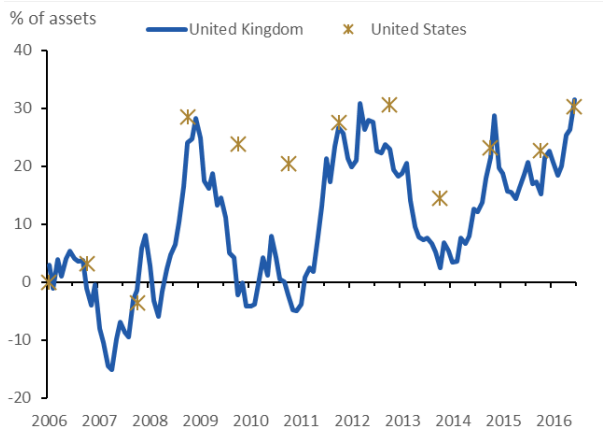
Part of the UK's financial significance to the EU reflects the centralisation in London of wholesale financial activity that has accompanied the development of the EU Single Market. More specifically:

Figure 13: Dependency ratios



Source: OECD Economic Survey of Korea 2016 and Llewellyn Consulting

Figure 14: Pension funds' funding gaps



Source: OECD Economic Outlook 2016 and Llewellyn Consulting

Much is at stake on both sides

- UK banks lend some $1.4tr to EU companies; half of the world's financial firms currently have their European headquarters in London; two-thirds of EU27 capital markets activity is conducted in the UK; 40% of EU mutual fund and pension asset management is located in the UK; the UK venture capital market accounts for 36% of total EU activity; UK trading platforms execute 40% of EU equity trades; the UK accounts for 21% of securitisation issuance; the UK accounts for 27% of EU IPOs; and UK clearing houses undertake 70% of euro-denominated OTC derivatives trades.[28] London accounts for almost one-quarter of EU financial services, and is a highly efficient provider.

The EU's significance to the UK is that at present it affords unfettered access to what is the world's largest market: and not only for goods, but also for services, which represent 60% of UK exports.

Single-market access is crucial for the financial sector

It is by no means clear what sort of Brexit will take place; but the nature and extent of the UK's post-Brexit access to the Single Market will be crucial for the financial sector. The final arrangement could well fall short of 'passporting,' and perhaps be confined to 'equivalence status' for many market segments. Passporting is a major reason why such a large number of international financial institutions opted to set-up their headquarters in London. Some 5,500 firms in the UK rely on passporting to conduct business with the rest of the EU, and more than 8,000 firms in the rest of the EU trade in the UK using passporting rights.

Third-party equivalence permits non-EU firms to perform some of the functions that passporting allows. Equivalence can however be rapidly withdrawn, and the UK would have to accept having no influence over the associated rules.

This would disadvantage the UK financial sector relative to other EU financial hubs, such as Frankfurt, Paris, Amsterdam, and Dublin, which are seeking to poach businesses and expertise from the UK. The wish of many US firms to operate within an Anglo-Saxon cultural biosphere also suggests New York as a major beneficiary.

Banking stands to be particularly seriously affected …

Banking would probably be most affected by the loss of passporting rights, as many of its core elements rely on these mechanisms. Without them, banks would have to relocate at least some activities beyond the UK's borders. Indeed, this process has begun. Duplication of business operations and structures in different locations seems inevitable. This will raise costs and capital requirements.[29]

… asset management rather less so

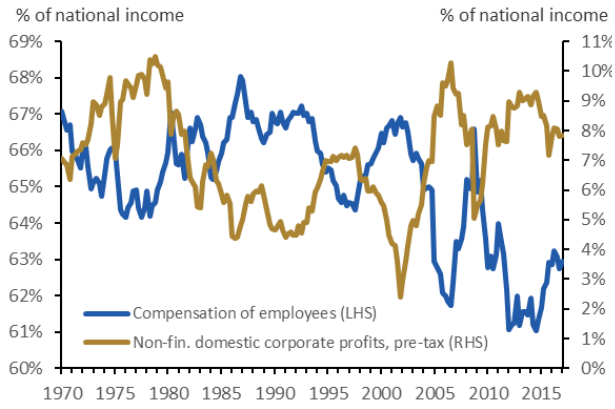
Implications for asset management will likely be less significant. Most asset managers benefit from existing equivalence frameworks. The impact on insurers is likely to fall somewhere between. UK-based central counterparties will be required to secure EU regulatory recognition, or relocate, perhaps forfeiting economies of scale.

But complexities and costs will increase for all financial entities

Brexit stands to increase the complexity of financial entities, posing new challenges for national regulators and potentially destabilising the financial markets. Even with a generous agreement on regulatory equivalence, the UK and other EU legal systems could soon start to diverge, obliging firms to develop new strategies for operating and competing.

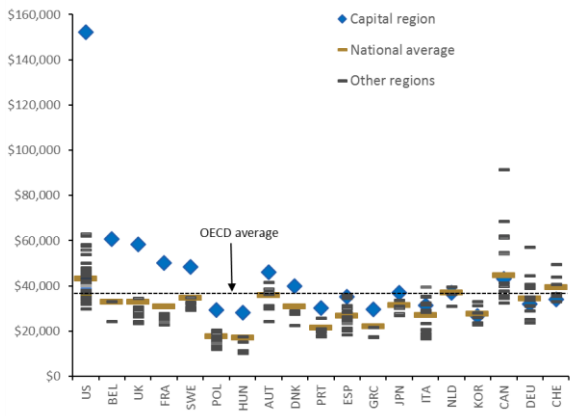
Restrictions on international data sharing may hinder the assessment of cross-border financial risks for both regulators and firms. Banks would face higher costs from having to duplicate data

Figure 15: US labour share and profit share in national income



Source: Macrobond and Llewellyn Consulting

Figure 16: Regional GDP per head, constant prices, constant PPP



Source: OECD.stat 2012 and Llewellyn Consulting

processing in different jurisdictions. Forthcoming Europe-wide cybersecurity protocols too would be affected.

Summary: An unknowable Brexit outcome. Consequences could be significant and long-lasting.

Tail risk: Political chaos; Brexit process compromised and/or extended.

Conclusions and Implications

Finance is set for years of profound structural change

Global finance seems set for many more years of structural change. The sector is subject to a range of powerful, overlapping, but also conflicting forces. While precise outcomes are impossible to predict, broad outlines seem reasonably clear.

Bouts of turbulence will be frequent …

First, bouts of financial turbulence, if not outright crises, will be a continuing feature. The sector's capacity for innovation, and the quest for profit maximisation, will remain facts of life. While better regulation can in principle reduce the frequency and virulence of crises, it rarely stays ahead of the game for long. The next financial trauma will almost certainly contain at least some new features, and find the authorities under-prepared.

… as some influences prove more potent than others

Second, some of the structural forces on the financial sector – particularly demography, climate change, and technology – are powerful and enduring. Inexorable population ageing threatens years of slow economic growth and low inflation: technological advancement stands to be a particularly powerful long-term 'disrupter' of nation states and markets.

The search for yield will continue …

The stretch for yield, interest in alternative investments, and the search for growth markets seem bound to continue. China, India, Latin America, and Africa all stand to benefit from continuing capital outflows from the advanced economies, although their degree and consistency will be dictated by the extent to which individual emerging-market economies develop their institutions, and pursue structural reform. Many of these economies have much policy ground to make up if they are to convince international investors that, they are worth the risk, apart from for short periods.

… and better EM stores of value would further encourage it

A particular consideration will be whether, or which, EMs develop satisfactory safe havens and stores of value. Notwithstanding their growing importance to global growth, neither the size nor the sophistication of EM market infrastructures are yet on a par with those of the advanced economies. Legal uncertainties abound; clearing and settlement systems are poor; issuance processes lack transparency; and investor choice is limited by regulation, capital controls, and repressive policies. Considerable benefits will accrue to those EM countries that offer credible alternative safe havens.

Two further, related, issues are how the future of the financial sector will evolve in the face of the various forces affecting active fund management, and the long-standing, but frustrating, quest for long-term investment horizons.

The prospects for active investment are unclear …

The future of active financial management will depend importantly on the performance of passive and algorithmic investing, which will probably receive its first major test during the next bear market for riskier assets. If, as some commentators suggest, these new quantitative techniques encourage herding, narrow and pro-cyclical investing, and liquidity mismatches, there is potential for a backlash against them, notwithstanding their low cost and instant tangibility.

This implies that at some point there will be an at least temporary renaissance of active, research-based, asset managers who offer diversity to disperse risk and moderate uncertainty, while actively seeking excess returns. However, it is doubtful that the technological and algorithmic genie will ever be returned to the bottle. More likely, the next bear market in risk assets will prove the catalyst for redoubled efforts to combine the best of active fund management with the most agile passive quantitative techniques.

… and the same is true for the provision of long-term finance …

The rise of passive investing is going hand-in-hand with shorter investment horizons, as benchmark indices are tracked ever more closely, and the rise of algorithmic trading encourages resort to a greater number of limited-time-horizon market positions. The tendency towards short-termism is not new: it is an issue policymakers have long sought to address, and that in some countries policymakers may try, if not to reverse, at least to moderate.

… although its benefits are clear

There is growing recognition of the importance of provision of long-term finance, given that that is more consistent with an optimal allocation of capital, and higher growth potential. It allows investors to access ill-liquidity premia, reduces turnover costs, moderates pro-cyclicality, and encourages higher net rates of investment return and greater financial stability.

Some countries will progress faster than will others. They will be encouraged by growing recognition that more deeply-engaged capital also encourages active voting strategies on the part of asset-holders, and better corporate governance. Furthermore, it tends to be more conducive to infrastructure development, green growth initiatives, and better SME financing. Again, any tendency for passive and quantitative investment strategies to perform especially badly in the next bear market will probably produce a reaction that favours a 'stickier' approach to investment, and other initiatives too may well pay dividends for funds under management. For example:

- The employment of rolling 3- or 5-year index benchmarks.
- Commitment to specific extended (say 20-year) investment horizons.
- Employment of an oversight committee of seasoned investment professionals.
- Automatic rebalancing systems to enforce sales of riskier assets as booms mature.
- Application of hard liquidity requirements to keep a certain amount of investment powder dry.
- Stipulated weightings for real assets in investment portfolios.

Structural policies will dictate overall winners and losers

Which countries perform better will depend in part on the quality of their policies, and in particular their structural policies: the 'heatmap' below seeks to capture the current quality of the major structural policy settings of a range of OECD countries.[30] (See figure 17). ■

Figure 17: Structural policies heatmap

	FIN	CHE	NLD	NZL	JPN	GBR	DNK	SWE	NOR	LUX	AUS	CAN	DEU	USA	AUT	EST	BEL	FRA	IRL	KOR	CZE	ISR	LIT	CHL	PRT	SVK	ESP	SVN	LAT	POL	HUN	ITA	GRC	TUR	MEX
1. Institutions	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	2.0	2.0	3.0	2.0	3.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0
2. Infrastructure	3.3	3.7	4.0	3.0	3.7	3.0	3.7	4.0	3.7	3.7	2.7	3.3	3.0	3.3	3.0	3.7	3.0	3.7	2.0	3.7	3.0	2.0	3.3	1.7	3.0	2.3	3.0	3.0	3.0	2.7	2.7	2.3	2.7	2.3	1.3
3. Human capital	3.7	4.3	3.7	3.7	4.2	3.5	3.3	3.3	3.5	3.5	3.5	3.8	3.5	3.5	3.3	3.3	3.3	3.0	4.0	3.5	3.0	2.8	2.8	1.8	2.2	2.3	2.3	3.2	2.7	2.8	1.8	2.2	2.0	1.2	1.3
4. Market regulation	4.0	3.0	5.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	2.0	3.0	1.0	3.0	3.0	4.0	4.0	3.0	2.0	3.0	2.0	4.0	4.0	2.0	1.0	2.0
5. Labour market efficiency	3.0	3.7	3.0	4.3	3.0	3.3	3.7	3.0	3.3	3.0	3.7	3.7	2.7	3.3	3.0	2.3	2.0	2.7	3.3	3.7	2.3	3.3	2.3	3.7	2.7	2.3	2.7	2.3	2.0	3.0	2.7	2.0	2.7	2.7	3.0
6. Innovation	4.0	4.3	3.7	3.0	3.7	3.7	3.7	4.0	3.7	3.7	3.3	3.3	4.0	3.7	3.3	3.0	3.7	3.0	3.0	3.7	3.0	4.0	2.7	2.0	2.3	2.7	2.3	2.7	2.0	2.0	1.7	1.7	1.7	1.7	1.7
7. Financial market efficiency	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0	4.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	2.0	2.0
Total score (higher = better)	**3.9**	**3.9**	**3.8**	**3.7**	**3.6**	**3.6**	**3.6**	**3.6**	**3.6**	**3.5**	**3.5**	**3.5**	**3.5**	**3.4**	**3.2**	**3.2**	**3.1**	**3.0**	**3.0**	**2.9**	**2.8**	**2.7**	**2.7**	**2.6**	**2.6**	**2.5**	**2.5**	**2.5**	**2.4**	**2.4**	**2.3**	**2.0**	**2.0**	**1.8**	**1.8**
Standardised total score	1.4	1.4	1.2	1.2	1.0	1.0	1.0	1.0	1.0	0.9	0.7	0.7	0.7	0.7	0.4	0.3	0.2	0.1	0.1	-0.1	-0.4	-0.4	-0.4	-0.6	-0.6	-0.8	-0.8	-0.9	-1.0	-1.0	-1.2	-1.6	-1.6	-1.9	-2.0

Source: Llewellyn Consulting, OECD, IMF, Eurostat

Notes: Standardised variables are colour-coded. Dark green shows countries with the best structural policy/setting; dark red those with the worst.

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