UBS

The New Global Context: Could economic transformations threaten stability?

UBS White Paper for the World Economic Forum Annual Meeting 2015

January 2015

Foreword

The world is undergoing major transformations. To take just two examples: technological development is changing our everyday personal and business lives, and the emergence of the US as a major energy provider is changing the global calculus, shifting the balance of power away from oil suppliers and toward consumers. Both should be seen as positives. But without better global integration and cooperation they could each prove to be a force for ill, rather than good.

The era of globalization has provided a major boost to global growth, and lifted hundreds of millions of people out of poverty. In large part thanks to the benefits of globalization, the global extreme poverty rate has halved in the past 20 years. Yet today, integration and cooperation between countries and people around the world is slowing, or even reversing.

A diverging world, with increased geopolitical instability, is not good. Worse, without a change in the course of globalization and cooperation, a number of the potentially positive transformative developments could, in reality, materialize as negatives. In this paper we look in more detail at these potential threats, and at the measures policymakers will need to implement in the years ahead.

As we convene at the World Economic Forum's Annual Meeting in Davos to discuss The New Global Context, the potential for elevated geopolitical and societal volatility shows that urgent action is required, particularly with respect to addressing local and global inequalities, and building a strong policy framework for global security that encompasses the geopolitical, financial, physical, and digital spheres. In each of these domains, a greater level of inter- and intra-governmental cooperation will be required than has been in evidence in recent years.

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- Yet the common themes of this White Paper are a potential rise in social inequality and/or a potential threat to global cooperation or stability that could come as a consequence.
- The solutions will require inter-governmental and intra-governmental cooperation, notably in the areas of global security, environmental policy, central bank decision-making and emerging-market reform.
- To achieve this, global policymakers will need to reverse recent trends of declining levels of cooperation.

Introduction: How could economic transformations threaten stability?

The world economy has recently endured the most severe recession since the 1930s. Large parts of its financial system nearly perished in the process. The subsequent recovery has been weak, uninspired, and bedeviled by other significant strains, not least those that nearly tore the Eurozone apart. Disparities in income and wealth within countries have widened significantly. Political systems are struggling to cope with these stresses, with extremist parties and views on the rise. Regional conflict has re-erupted where it was previously dormant, and risks doing so elsewhere as well.

Against this backdrop, it is easy to be pessimistic – even alarmist – about the world's economic prospects. However imperfectly, the outlook will, we believe, nonetheless continue to improve. Cyclical and policy conditions are mostly supportive, and low inflation is a plus. Economies are proving to be both more resilient and flexible than expected. The first signs of reform are emerging.

Perhaps the most enduring positive of all, human ingenuity, is alive and well, contributing breath-taking innovations at an electric pace. In areas ranging from energy to information technology, promising new innovations offer foundations for supply-side growth. We have estimated that the productivity gains over the next decade associated with today's new technologies could be as propitious as those ushered in by the personal computer and internet during the 1990s. In some cases (e.g. mobile internet) they already offer new and affordable ways for individuals in some of the most economically challenged parts of the world to improve their standard of living, afford basic financial services, and offer their skills and services to others.

In a world where labor may face relative scarcity, and capital investment remains muted, efficiency gains from technology and new sources of cheap energy will be particularly important in driving productivity and growth.

Yet, as we consider these new sources of potential economic efficiency, we also need to take a step back. Today's global economy is incredibly complex. Supply chains are longer and more international than at any time in the past, even compared to a quarter century ago. Arguably, this very complexity has helped raise living standards worldwide by enabling large numbers of people to participate in the global economy in a way that was unimaginable a generation ago. But it also makes it even harder to identify potentially disruptive influences, or inefficient external costs, that new developments could introduce.

In this paper, published to accompany the World Economic Forum's Annual Meeting 2015 in Davos, we will look at four key medium-term pillars of development: US energy independence, technological innovation, the exit from loose monetary policy, and our changing relationship with the environment. We will try to assess not only the direct impact they will have but also their wider consequences for the global economy.

In our view, governments and policymakers will need to consider the fragility of this interwoven economy. At a time when potential growth is low, the temptation to push through growth-boosting initiatives "at any cost" will be high. The threat such initiatives pose to long-run stability, however, is real.

A unifying "cost" of all of the developments discussed is the negative impact they could have on poverty and global cooperation. Policymakers must try to seek fair outcomes for society, while trying harder than ever to find a happy middle ground among competing objectives. It will be critical for "solutions" not to result in overregulation that cripples growth and innovation. We believe the focus should be on a regulatory framework that supports macroeconomic objectives. In each part, we offer potential policy remedies to the issues raised.

Transformation 1: Energy

US energy independence holds significant benefits for the United States of America, lowering the cost of energy and reducing the threat of supply disruptions.

But it could also lead to growing dollar-funding stress in emerging markets, and a reshaping of the geopolitical landscape.

If the global reserve currency becomes scarcer, the financial and economic outlook for emerging markets becomes more challenged.

The transformative impact of energy independence on US foreign policy incentives could also affect the rest of the world.

The quest for cheaper energy and a smaller deficit
The shale revolution has already produced a significant structural reduction in the US trade deficit. Thanks to a 3.6 million barrel a day increase in domestic production and greater vehicle efficiency, the US now imports 7.1 million fewer barrels of oil a day than it did in October 2008. At USD 60 a barrel, the savings amount to USD 428 million a day, or USD 156 billion a year. And the trend is expected to continue, with our commodity analysts expecting US output to rise a further 1.2 million barrels a day in 2015.

Aside from the direct effects of reducing the amount of oil that needs to be imported, the shale revolution has also dramatically trimmed energy costs for a variety of industries due to the greater supply of, and lower price of, natural gas. This has helped make American industry more competitive.

The chemical industry, one of America's largest exporters (it represents around 13% of merchandize exports), has benefited in particular. US natural gas – a major input in chemicals – is now half the price it is in Europe due to shale technologies, and one-third the price it is in Asia (based on a Henry Hub price of USD 4 per MMBtu), a huge competitive advantage for an energy-intensive industry.

Lower energy prices are also expected to lead to "on-shoring." While exports of energy-intensive products in areas like chemical production have not yet risen, despite the US's lower onshore energy costs, we expect such an increase to materialize in the years ahead. IHS estimates that lower natural gas and electricity prices will boost industrial production 3.9% by 2020, resulting in additional trade benefits of USD 180 billion a year by 2020 (relative to 2012).

Consequence #1: A shortage of dollars will affect developing nations
These trends have contributed to the US current account deficit narrowing from USD 806 billion in 2006, or around 6% of GDP, to USD 400 billion in 2013, or just over 2% of GDP. The smaller deficit in turn has mechanically reduced the supply of dollars churning through the rest of the global economy. Of course, the trade deficit is not the only source of dollars. But the shale revolution may also lessen the amount and value of dollars available elsewhere as well.

US investor exposure to emerging markets has risen sharply since 2008 – from USD 450 billion, or 2.5% of emerging-market (EM) GDP (which totals USD 27 trillion), to USD 1.3 trillion (5% of EM GDP), according to figures from the

Institute for International Finance. By making the US economy more competitive and increasing the relative attractiveness of US assets compared with EM ones, the shale revolution could contribute to a structural flow of portfolio capital back to the US. The 2013 "taper tantrum" may have provided a cyclical taste of a larger structural shift. In just one quarter, the exposure of US investors to these markets dropped by USD 100 billion.

The other main source of dollars is interest payments on US government debt. However, even this may result in fewer greenbacks being made available than previously expected. IHS predicts that by 2020 shale and tight oil activity will yield more than USD 125 billion a year in federal and state tax revenue, the equivalent of one-quarter of the roughly USD 500 billion deficit the White House is currently forecasting for that year. Perhaps more significantly, the US may also have more discretion to cut back on defense spending, which currently accounts for 19% of the US federal budget and 3.8% of GDP.

As long as the dollar remains the world's reserve currency, an expanding global economy will need it in ever greater amounts. One way of ensuring an increase is for the US to run a current account deficit. An obvious problem arises if the US runs a current account surplus, as was enunciated by Robert Triffin in the 1960s as part of his "Triffin Dilemma." If the US fails to run a deficit, the global supply of greenbacks – which helps fuel economic growth and trade, provide collateral and serves as reserves – becomes constricted.

Indeed, the aforementioned taper tantrum in May 2013 gave us a window on the impact that dollar shortages can have on the emerging world in general, and on countries that run "double" fiscal and trade deficits in particular. The tantrum was caused by a shift in cyclical views regarding the US Federal Reserve's interest rate policy. The shale revolution has the potential to contribute to a structural shift in the availability of dollars to the rest of the world over the medium to long term.

Consequence #2: A transformation of US foreign policy objectives will increase global instability

US energy independence also carries significant implications for the geopolitical landscape if it affords the US the luxury of moving from a "needs-based" to a "value-based" foreign policy.

The US remains the world's dominant military power: its military budget is estimated by the Stockholm International Peace Research Institute at USD 640 billion (2013), which represents 37% of global military spending. The US spends as much as the countries with the next nine largest military budgets combined (China, Russia, Saudi Arabia, France, Britain, Germany, Japan, India and South Korea).

Since 1945 the US has had a "security for oil" agreement with Saudi Arabia, under the terms of which the kingdom is given access to arms on terms comparable to those of NATO members. A desire to secure the flow of oil was also an important factor in the 1953 overthrow of Iranian leader Mohammad Mosaddegh; the US Navy's Fifth Fleet is based in Bahrain; the United States Central Command is based in Qatar; Kuwait's 100 billion barrels of oil reserves – about 6% of the world's total – added urgency to the US's overturning of Iraqi aggression against Kuwait in 1990.

In a sense, the Gulf Cooperative Council countries can be regarded the way Fannie Mae and Freddie Mac are – they have an implicit US government guarantee – and the Gulf Arab political order has depended on US involvement for its survival.

If the US no longer needs to maintain the energy supplies of foreign producers because it becomes self-sufficient, its foreign policy stance could shift from a "needs-based" to a "values-based" one, and allow it to reduce its military spending, which is attractive from a fiscal deficit and debt perspective. It would also enable the US to refocus its remaining spending on growing areas of concern and importance, such as combating cyber-attacks, which we discuss in the next section, and electronic surveillance.

If the US role in the Gulf indeed diminishes, instability will likely rise. China may ultimately have to play a larger role in the region, assuming part of the US burden, to meet its own energy needs. China to date has been reluctant to assume a broad role of "global policeman" in the manner of the US, though its recent intervention in South Sudan represents a potential first step toward adopting a more active foreign policy. Given the lack of precedent for greater Chinese involvement, there is a danger that, should China step in to take over the current US role in the Middle East, it will focus more on securing its own oil supply than on assuming any broader responsibilities.

This global environment is likely to be one of higher cross-border political instability and elevated volatility in every sense.

Recommendations

Reforms focusing on domestic demand-led growth and higher value-added change. Energy independence and the potential "re-industrialization" of the US would increase the need for many developing countries, especially those running large current account deficits or those focused on low-end energy-intensive manufacturing, to renew their structural reform efforts. In particular, it would likely necessitate them shifting from export-oriented to domestic demand-led growth and toward sophisticated, higher value-added production. We do not mean to trivialize how difficult and complex it is to effect such a shift. But a few countries have managed it. For example, Mexico's recent reforms are encouraging greater inbound investment. The implications of the shale revolution underline the importance of attempting this transformation and beginning to do so as quickly as possible.

Further incentives for renewable power in general and solar battery development in particular. The US cost advantage derived from the shale revolution will eventually fade as renewable sources supplant fossil fuels. By encouraging solar and, especially, battery technology, oil and gas-consuming nations can accelerate the process. BP estimates that renewables currently account for just 2–3% of global energy usage, with solar less than 10% of this small share. China is investing heavily in state-sponsored green technology in an attempt to improve both the environment and future economic growth prospects.

A wholesale move to solar, however, could help level the playing field, though it is only realistically achievable once the total cost of solar reaches parity with grid-based energy. While companies are devising innovative financing approaches to enable households to install solar panels at zero or no upfront cost (see Elon Musk's Solar City and Vivint, backed by Blackstone), battery costs remain a key stumbling block to achieving this objective. Only Malta and Cyprus are at grid parity in Europe, though if battery prices were to fall by half to Euro 7.5 cts/kWh, six more countries would reach it.

Increased focus on policies to reduce the reliance on oil in transportation. Biofuel accounts for less than 5% of the fuel used for road transport worldwide. Greater use of ethanol, ideally in its cellulosic form, which does not consume valuable agricultural land and push up food prices, would help offset the risk of greater oil supply disruptions posed by the shale revolution. Brazil is a potential role model in this regard. Flex-fuel cars, which can run on either gasoline or ethanol, today account for some 64% of cars in Brazil, and in 2008 – when oil prices hit USD 147 a barrel – 50% of motor fuel sold in Brazil was ethanol (this figure has recently dropped back to 30% due to falling oil prices). Sugar-based ethanol cuts greenhouse gas emissions by 61% compared to gasoline, according to the US Environmental Protection Agency, and the US Department of Energy has already identified 1.3 billion tons of biomass in the US alone that could theoretically provide one-third of the transportation fuel the US needs. The promise of biofuel is of particular relevance for policymakers in Europe. The EU consumes 14.5% of the world's oil but accounts for just 0.4% of its reserves.

Transformation 2: Technology

Technological change is generally seen as a positive factor that increases productivity and wealth.

However, many areas of technological development carry a price tag in the shape of a potentially more polarized workforce, and heightened geopolitical and/or economic instability.

The possibility of a large share of the population becoming excluded from change could act as a brake on productivity.

Cyber security concerns are more pressing at a time of growing animosity among some of the world's largest countries.

The quest for greater efficiency and productivity
Last year's UBS White Paper for the World Economic Forum Annual Meeting was entitled "How trade, technology, and finance can help keep the recovery going". With global potential output growth slowing due to aging populations and ongoing deleveraging, the world will increasingly need to look to new technological advances to fuel future growth. Our simulations, mentioned in last year's paper, indicate that trend global growth could be 0.5 to 0.7 percentage points higher with improvements in areas such as mobile communications and additive manufacturing than without them.

The "internet of things" is enabling each point and each device in a supply chain to be monitored, which results in more efficient resource use. By the first half of next year, parts of the US oil and gas pipeline network will become "intelligent," feeding back vast quantities of data and making preventative maintenance possible. Smart meters are being installed in electricity networks around the world: by 2020, almost 72% of European consumers will have a smart meter to gauge their electricity consumption, according to European Commission estimates; 40% will have one for gas.

Cloud computing enables companies to outsource various IT tasks such as software installation and server maintenance, making them more flexible and better able to deploy capital to their core operating businesses rather than to internal infrastructure.

Consumers hold growing volumes of their monetary, purchased and created assets online. Virtual payment networks are gaining traction. In some countries, such as Sweden, more than four-fifths of transactions are already handled using credit and debit cards. NFC chip technology, long used in transport networks and migrating now to credit cards and even mobile phones with the launch of Apple Pay, could boost penetration to even greater levels.

While many of these technologies have yet to feed through to greater GDP growth, past technology shocks illustrate that the full benefit of breakthroughs can take several decades to unfold because changes in business organization are required. In short, the economy has to learn how to use the new technology before it can exploit its full potential.

Chad Syverson of the University of Chicago provides a fascinating example in Will History Repeat Itself? Comments on "Is the Information Technology Revolution Over?" He uses the example of electricity to show that, in terms of productivity growth, the 1970-to-present-day period of IT progress resembles the 1890–1940 era when the introduction of electricity boosted production. The analogy is that the benefits of electricity were taken full advantage of only when organizational changes were implemented. A study shows the same effect in IT: the companies whose productivity has been boosted most by IT advances are those that have also invested in business reorganization. Such reorganization takes time, which suggests that IT's productivity effect could persist longer than many think.

Consequence #1: Employment polarization

One key feature of technological shocks is how they affect employment. Typically, a technological shock benefits the part of the workforce able to capture the productivity gains, but harms other parts of the workforce as the organizational changes mentioned above make some positions and skills redundant.

This is exactly what has occurred in the US and the rest of the world since 1970. US productivity has increased by slightly more than 1.5% annually since 1975, and real GDP per capita by a cumulative 90%. Meanwhile, the average median income per capita, or the average real wage, has risen by only a few decimal points per year. Similarly, sectors such as finance, information and manufacturing that are positively exposed to technological shifts have delivered a large share of US economic growth without adding significant numbers of new jobs. Taking an extreme example of the value that technology can lead to accrue to a tiny number of workers, WhatsApp was recently purchased by Facebook for USD 19 billion despite employing only 55 workers, or USD 345 million of enterprise value per person.

This is not a US-only phenomenon. The pattern is very well documented in a recent Brookings study, "The Polarization of Job Opportunities in the U.S. Labor Market: Implications for Employment and Earnings". It notes that "while further analysis is required to understand in detail the relationship between occupational composition, wages, and technological changes across industrialized economies, these preliminary analyses unambiguously confirm that the phenomenon of employment polarization is not unique to the United States."

The excluded workforce, the part of the population left behind by change, is of critical importance. The creation of plutocracies leads to their members monopolizing access to higher education and the best jobs. Sizeable groups in many societies may be left behind and their potentially productive human capital excluded from growth. These groups may become not only dis-enfranchised, but potentially also prejudiced against others in society (based on ethnicity, nationality or religion, for example), which undermines productivity by wasting human capital. If prejudice becomes embedded in a society, the productivity critical to further technological change is severely compromised.

Consequence #2: Global instability

Another factor we need to be conscious of is that the transition to the technological future will continue and perhaps accelerate the centuries-long trend of replacing physical labor with electric, electronic, and now digital functioning. Where once an engineer monitored the health of a pipeline and made the necessary adjustments to it, sensors now connect to and alert computerized networks to perform those tasks. Where once software or some other virtual asset was stored locally and transferred in the form of physical discs, it is now held virtually and delivered on the fly. And where once bank tellers and cashiers functioned as critical parts of a payment network, e-banking and contactless payments make them redundant. While these shifts increase efficiency, they come with costs, both human costs and the cost of data security.

With regard to the latter, consider one of the prime developments in the "internet of things": smart meters. It is estimated by the European Commission they will deliver energy savings to consumers of around 3%. But they come with a greater risk of hacking and associated outages than a physically controlled system.

Another example of the data security danger concerns the centrifuges operating in the Iranian nuclear plant at Natanz. In 2010, around one-fifth of them spun out of control and monitoring systems were distorted because, apparently, a malicious piece of software known as Stuxnet found its way into the Natanz network thanks to careless use of a portable storage device by a contractor. According to Symantec, the energy sector is now one of the top five most-targeted sectors for hackers globally, and in 2012 Saudi Aramco spent weeks repairing its computer systems after a virus attack. In 2013, parts of the Austrian and German power grids were threatened after an IT accident led to the network being flooded with data.

Meanwhile, cloud computing enables companies to better balance supply and demand, in this case for IT infrastructure. But from an economy-wide perspective, cloud computing and common encryption technology are developing replication and aggregation risks. If the IT infrastructure of a number of companies is being managed and distributed centrally by a single cloud-computing provider, the consequences of a successful hack on the latter could be enormous. Similarly, breaking a specific type of encryption could damage the wide variety of industries that depend on it. Meanwhile, replicating the same data in a number of locations worldwide increases the chances of it being accessed, even if each individual item is held securely.

And corporate infrastructure is not all that is at risk. A person in the developed world on average now "owns" close to 50GB in virtual data, much of it held within "clouds" behind simple password walls that can be compromised on a large scale. The recent so-called "Heartbleed" bug is an example of a single vulnerability that required (hundreds of?) companies to update their security protocols, and (millions of?) users to change their passwords. At the time the bug was discovered, around 17% of the internet's secure web servers were believed to be vulnerable. The flaw in the system wasn't particularly complex, but it can be hard to find simple flaws in complex systems.

These concerns become all the more worrying when we consider that they are rising at a time of growing animosity among some of the world's largest countries. The recent hacking of JP Morgan has been described in some press reports as retaliation against US firms for the sanctions imposed by the US government on Russian companies and the Russian state. Meanwhile, the "Stuxnet" virus that debilitated parts of the Iranian nuclear program has been attributed by various sources to the US or Israeli governments. More recently, internet security companies have recently claimed that the "Regin" spyware bug, which affected networks in Saudi Arabia and Russia, is the work of a state or government agency.

Already, US Department of Defense officials rate cyber-warfare as the greatest threat to national security, with former Secretary of Defense Leon Panetta likening "the collective result of these kinds of attacks to be a "cyber Pearl Harbor," an attack that would cause physical destruction and the loss of life…it would paralyze and shock the nation and create a new, profound sense of vulnerability."

Recommendations

Adequately preparing workforces for the technological future. As we identified in a previous White Paper, Furthering the fight against poverty, a large part of the world's workforce, as the 21st century unfolds, is not properly prepared to fit into the evolving global labor market. Business and government need to work more closely together to ensure that skills and requirements in a given economy are well aligned. In that previous White Paper we highlighted specific means for business to do so, e.g. by engaging in philanthropic partnerships with government organizations and focusing its corporate responsibility efforts on youth unemployment. We also suggested ways in which governments can encourage "impact-type" employment schemes through the use of franking credits in certain industries.

Rather than technology functioning as a threat to labor, it should be harnessed and presented as an opportunity. New technologies have the capacity to revolutionize education. They increase democratization of access, providing the scope for education and training to be more work-specific, and user-oriented. The rapid advancements in technology mean that continuous learning is required.

Better global management of cyberspace. As the threat of global instability rises due to the increasing number of cyber-attacks, international bodies need to clarify the legal definitions of various aspects of cyber-warfare and draw up a new Geneva Convention of sorts, particularly with respect to the threats that could disrupt civilian assets or infrastructure. That said, enforcing such rules could prove problematic given the difficulty in many cases of establishing the sources of attacks. Investing in technology to defend against, and trace the origin of, attacks remains critical.

Ability to disconnect the online digital world from the physical world. The cyber-attack on Natanz illustrates the problems that can arise when elements and equipment in the online digital world cannot be separated from the networks and processes that control key functions in the physical world. The design of new connected technologies, particularly with respect to critical infrastructure, needs to feature "disconnectivity," the ability to disengage such elements and equipment from their real-world functions, even if this means less efficient operation.

Transformation 3: Financial policy

The strong response to the crisis was critical to preventing the global economy from sliding into depression.

The consequences of years of accommodative policy have been multi-fold and include a rise in wealth inequality.

The effects of unwinding quantitative easing and normalizing monetary policy remain to be seen, and could be disruptive for emerging markets.

Policymakers will need to carefully utilize sophisticated macro-prudential instruments and forward guidance to ensure a steady shift in the monetary policy cycle.

Central banks' response to the great financial crisis
Since the global financial crisis of 2008, there has been a revival of central banks serving as a lender of last resort. The measures they adopted sharply boosted liquidity by expanding the monetary base in an effort to contain financial instability. The easing instruments included interest rates close to or even below zero, quantitative easing (QE) and short-term lending facilities. The boost to aggregated demand has helped the global economy avoid a depression.

First, the liquidity provisioning in the immediate aftermath of the crisis helped prevent markets from becoming dysfunctional for an extended period of time. Second, via QE and, later, forward guidance, central banks signaled their intention to keep rates low for an extended time, reducing borrowing costs across the yield curve. Finally, by increasing the asset prices of government bonds and mortgage-backed securities (the primary targets of QE), the portfolio substitution effect meant that yields were lowered across the capital structure for companies looking to raise financing and consumers seeking to repay debt.

Such central bank efforts stimulated economic growth in the US most, due likely to the early action the US Treasury took in recapitalizing the banking system, which enabled monetary policy shifts to transition more quickly and effectively into greater bank lending. Elsewhere, monetary policy did not translate as effectively into growth due to weaker capital positions and, in some cases, tighter regulation.

Consequence #1: Emerging-market vulnerability
The aforementioned portfolio substitution effect caused a significant global "search for yield," which steered capital flows into many emerging markets. As mentioned in the section on the US energy revolution, investor exposure to emerging markets from the US alone has soared since 2008, from USD 450 billion, or 2.5% of emerging market (EM) GDP (which totals USD 27 trillion), to USD 1.3 trillion, or 5% of EM GDP.

However, these flows have produced two undesirable effects. First, while emerging markets have become more stable overall by issuing a greater share of their debt in local currencies, a larger share of EM credit is now held by foreign investors (for instance, one-third of Indonesia's bond market is foreign-owned), which makes them vulnerable to capital flight in periods of stress. In the 2013 taper tantrum, as we noted, US investors pulled USD 100 billion out of emerging markets.

Second, with yields compressed and foreign investor flows boosting liquidity in the domestic banking sector of many emerging markets, reliance on credit has increased. In the lead-up to the taper tantrum, Brazil's annualized credit growth approached 20%. China has experienced a similar phenomenon, in part aided by the excess liquidity in its banking sector that stems from rising foreign exchange reserves. This has resulted in structural imbalances in both economies.

Consequence #2: Rising wealth inequality

The actions of central banks, by lowering the price of money, have implicitly raised the prices of all assets. The stark divergence between the performance of real assets and real output has progressed in a way that is arguably not sustainable. Whether intentional or not, central banks have made those who hold the most assets wealthier. The most recent research by Saez and Zucman shows that wealth inequality has skyrocketed in the past five years.

This creates the risk that there will be an increasing trend of "rent-seeking," as owners of capital seek to maximize rents rather than invest. There may be evidence of this in the high level of corporate share buybacks and dividends, relative to capital expenditure. A prolonged lack of real investment will likely reduce future growth potential.

What next?

For the first time since the financial crisis, major central banks have adopted diverging monetary stances. There is no longer a single interest rate cycle but three separate cycle categories into which the various central banks can be grouped.

The first group consists of the US Federal Reserve and the Bank of England (BoE), which adopted large-scale QE at an early stage of the economic downturn, helping their economies narrow their output gap. Consequently, this group is now on an upward path and expects to raise interest rates over the course of the next year. The second group comprises the Bank of Japan (BoJ) and the European Central Bank (ECB). This group is on the opposite track. Deflationary pressures, fragmented credit markets and weak growth numbers have forced the ECB to adopt unconventional measures to stimulate the economy. Likewise, the BoJ surprised markets at the end of October by announcing further stimulus. The third group, made up of the Reserve Bank of Australia and some EM central banks, is already in a normal interest rate environment with positive real rates.

Both the US and the UK economies have been growing steadily and are soon to embark on a path of normalization. We think the BoE is likely to be the first to raise rates in 2015 by adopting a "gradual and limited" normalization path.

The Fed's upcoming hiking cycle is probably the most foreseen such cycle in history due to the forward guidance its members have been providing. But that doesn't mean the outcome of the cycle is predictable or promises an easy path.

We need to acknowledge the Fed's unprecedented balance sheet and the fact that its three phases of QE led to it becoming the buyer of last resort in the key fixed income markets; it purchased 60% of US Treasuries in its recent six-year easing/QE cycle, the longest in its history. The Fed has little experience dealing with such a long stretch of monetary accommodation and even less dealing with such a lengthy QE cycle. When Japan first used QE in 2001 in an effort to reflate its economy, it resulted in a risk sell-off.

There are two possible outcomes:

1. Positive scenario

Market participants assume the economy is in a good and self-sufficient state, since the Fed would not otherwise have called for monetary policy tightening. Topline growth supports earnings and a regime shift occurs in equity markets, which move steadily away from domination by monetary policy to a focus on profit-growth analysis. In addition, the absence of the Fed as a buyer in fixed income is offset by foreign players, which should keep rates low and drive the US dollar up.

2. Negative scenario

Global central banks lower and flatten the capital market line (CML) by flooding the market with liquidity. Once the Fed starts to tighten, the CML not only shifts up but also steepens. This change reduces risk/return ratios and the prices of risky assets relative to cash. Combine this with the new post-crisis capital requirements for banks and overlapping regulations that discourage or forbid investment banks from market-making by holding risky assets on their own books, and you get a perfectly toxic cocktail. Furthermore, the liquidity of high-yield bonds and emerging market debt is structurally lower than before the financial crisis.

Recommendations

Emerging market reform. As mentioned in the section on energy, some emerging markets will need to become less reliant on external financing. In particular, an emphasis on narrowing current account deficits by pushing through internal reforms and improving competitiveness is likely to differentiate various emerging markets.

Avoidance of high, inconsistent, and changing regulatory burdens. Public pressure has produced an overshoot in regulatory activity. In some cases, regulators and governments are not providing a sufficiently stable legal framework for healthy banking activity. Rather than an ongoing process of "reforming the reforms", we believe a consistent approach is required. Further, policymakers must ensure they do not overregulate to avoid liquidity bottlenecks. Higher capital requirements hamper the credit market, and uncertainty about future regulatory changes and intrusive actions by the authorities reduces banks' willingness to lend.

The key to a smooth and successful shift from QE to monetary tightening is dialogue and trust among all the economic players: governments, central banks, commercial banks, investors and borrowers. Borrowers must be able to trust banks to provide the credit needed for investment and consumption. Banks must be able to trust central banks to ensure adequate liquidity while controlling inflation. Central banks and commercial banks must be able to trust policymakers to provide continuity and stability to ensure that smooth monetary circulation continues.

Macro-prudential instruments. Central banks must make use of the new instruments at their disposal, particularly macro-prudential oversight, to ensure a sustainable recovery. This will win them the trust of the main players in the market and lead to a smooth shift toward tighter monetary policy without harming banking activity. But macro-prudential measures are unlikely to lead to optimal outcomes if the "macro" is inconsistent with the "prudential." Further, central banks will need to be clear and transparent about their policy frameworks, to assist and enable businesses operating within these frameworks in terms of their future investment plans.

Transformation 4: Environment

Greater economic complexity makes it harder to see the externalized costs of growth. This is particularly true for the environment.

The outcomes from the environmental credit crunch could be unequally distributed among countries and income groups, and could lead to political disruption.

Economic and environmental objectives continue to be misaligned.

A global and holistic framework for environmental decisions is necessary to ensure that environmental costs are reduced and not merely transferred.

The environmental credit crunch

We can consider our interaction with the environment as a type of "environmental credit." Typically, the concept of credit is framed in financial terms. But credit is a broader concept than cash alone. Fundamentally, it is an inter-temporal transfer of living standards. Borrowers seek to raise their living standard today while recognizing that they will have a lower living standard in the future than would otherwise be the case as they repay the credit borrowed.

This fundamental definition means that the concepts of credit, and credit crunch, can be applied to the environment as well as to the cash economy. Humanity is raising its current living standard by consuming environmental resources that it will be unable to consume in the future; today's standard of living is raised, tomorrow's standard of living is reduced. The attempt to raise current standards of living through the unsustainable consumption of environmental resources is running into inevitable constraints; the inter-temporal transfer is starting to become impaired.

The environmental credit crunch is more than the dwindling stocks of finite environmental resources. Just as with financial credit, a good environmental credit rating confers resilience and the ability to weather tough times. But if over-consumption today creates permanent damage to the environment (for example, over-farming leading to soil erosion, or increasing greenhouse gas concentrations leading to a greater incidence of extreme weather events) then the use of environmental credit is doubly damaging to future living standards.

The environmental credit crunch is playing out in practice in China, through constraints on the use of water. Unless China is able to overcome its water shortages, its trend rate of economic growth will fall dramatically. This is why it is pursuing major water infrastructure projects, albeit sometimes unsuccessfully. Constraints on current water use in China are simply incompatible with the 10% real economic growth rates of the past. Indeed, current water constraints in China are almost certainly not compatible with the circa 5.5% medium-term trend rate of growth that UBS projects for China, and our assumptions about Chinese growth have to include some attempt to overcome the water-related environmental credit crunch.

Consequence #1: Unequal outcomes among countries
An important issue to consider in both financial and environmental credit crunches is inequality among countries. As we discussed in section 3, just as the solutions to the financial credit crunch may have favored better-off individuals, solutions to the environmental credit crunch may favor wealthier countries. Specifically, access to nutrition, education and decent healthcare may be constrained by the adverse consequences of the two credit crunches, financial and environmental.

Also troubling is the risk of autarkic policies being adopted. Such policies are doubly problematic because they could simultaneously reduce the efficiency and resilience of, for example, food provisioning systems under stress from climate change. However, in market-driven societies potentially damaging protectionist reactions risk being an almost automatic response. They generally stem from a mix of emotion (the fear of not being able to afford food and public anger about inequality in the face of rising prices, sometimes directed at obvious but undeserving scapegoats such as minorities) and political expediency (the desire not to lose votes).

Consequence #2: Complex political outcomes
Not unrelatedly, attempts to create greater economic and environmental efficiency may generate strong political opposition.

The process of change will generally involve some form of "creative destruction"; destroying current infrastructure and employment patterns in order to better allocate resources in economic and environmental terms. The costs of the destruction are likely to be narrowly focused (geographically, say, or in certain sections of society), but they are likely to be felt deeply. Politically it is the depth of the pain rather than the long-term, shallow and possibly somewhat abstract gain that is likely to attract the most attention. There is a real risk of political reactions being shaped by the short-term, narrow costs of achieving a balance between resilience and efficiency in both economic and environmental terms.

The combination of a financial and an environmental credit crunch also generates political problems that make long-term environmental solutions more difficult to achieve.

The problem with recommendations
There is an increasing sense today that "growth at any cost" is no longer desirable. Environmental policies were, largely, not reversed in the aftermath of the global financial crisis. In the energy sector in Japan and Germany, new constraints have imposed a potential limit on economic growth; at the very least, energy constraints have led to a change in economic behavior in both economies (most visibly in Japan).

But, as we described in the introduction, a problem created by the complexity of the modern world is that it is exceptionally hard to see the environmental costs externalized by Western-style economies. If there is an attempt to control waste in one area of a complex supply chain, there is a very real risk that the policy will not reduce waste but simply transfer it. Reducing food waste by consumers might lead to increased food waste by food retailers or food producers, for example. Attempts at efficiency can quickly descend into an economic/environmental game of "Whack-a-Mole."

Another salient feature of the way we live now is time compression. Working and living patterns constrain the time available, so consumers look for simple solutions to life's problems, which ironically increases the complexity of products. This complexity makes environmental efficiency more difficult to achieve. Products may offer solutions that the consumer does not necessarily need, which is wasteful. Clothes may be washed with a detergent that contains chemicals for removing stains, when few or no stains are present. The inclusion of such chemicals is redundant – an economic and environmental waste.

The desire for simple solutions to complex problems spreads beyond the development of complex products. It may appear efficient to seek simplified solutions to environmental economic problems, but this may misdirect resources and potentially aggravate environmental issues. By concentrating on one single facet of a supply chain – food miles, for instance, or CO2 emissions – we may ignore other equally important environmental considerations that sit elsewhere in the complex product supply chain. Economic and political resources will be misallocated when specific environmental damage at one point in the supply chain is overweighted at the expense of containing the broader environmental damage of the supply chain as a whole.

Recommendations

Concentrate on global and holistic framework for environmental decisions. Sometimes the invisible hand can do the job more efficiently than politics. For instance, a grassroots revolution is under way in energy that enables consumers to enjoy carbon-free transport thanks to technological advances in electric vehicles and batteries, as mentioned in section 2. The commercial tipping point for green solutions has already been, or is about to be, realized in half a dozen island nations, according to the Carbon War Room. The distributed nature of grassroots systems and the higher resilience of distributed systems are a potentially important policy idea.

At the same time, the invisible hand may need the guidance of a global framework. In the example of carbon markets, policymakers must reach global agreement if any scheme is to be at all effective. Local schemes may simply lead to "carbon leakage" where the rising cost of carbon permits in one region simply leads to greater pollution elsewhere in the supply chain. Even if such a framework is worked out, there is still the problem that a myopic focus on CO2 emissions could lead to other problems elsewhere, for example, in the high environmental costs of producing low-emission cars. Similarly, Germany's plan to derive 80% of energy from clean sources by 2050 has meant that its nuclear phase-out is being facilitated by more coal-fired energy generation. Agreements will need to be both global and environmentally holistic. This is complex but not impossible.

Sponsor certain markets to ensure slack is maintained where appropriate. Sometimes the invisible hand will not do the job effectively. For example, "efficiency" can be deeply inefficient in both economic and environmental terms. Slack in the system is required in critical sectors (banking, energy, water, food) as a basis for a strong (and overall efficient) economy. As the financial credit crunch demonstrates, resilience, or the ability to bounce back after a crisis, ultimately matters far more than day-to-day efficiency. Exactly the same principle applies to the environment. The agricultural system known as crop rotation may appear to be a waste of resources but, without it, soil becomes degraded. Minimizing the total amount of energy generation capacity might look efficient until there is a peak-load blackout – at which point it becomes clear that having "too much" capacity is not actually a waste of money. Extremes of "cost-cutting" in the economy, or in protecting the environment, can lead to system failures unless something is done to inject compensating resilience elsewhere. Policymakers must help ensure that relevant systems have adequate slack.

Conclusions

Making economic efficiency gains will be critical in a world of relative labor scarcity and still-muted capital investment.

Yet the common themes of this White Paper are a potential rise in social inequality and/or a potential threat to global cooperation or stability that could come as a consequence.

The solutions will require inter-governmental and intra-governmental cooperation, notably in the areas of global security, environmental policy, central bank decision-making and emerging-market reform.

To achieve this, global policymakers will need to reverse recent trends of declining levels of cooperation.

Poverty
In each of the areas we have highlighted in this paper, there are reasons why, without the right action, poverty and unequal outcomes may increase in the years ahead.

In the section on energy, we discussed how a dollar shortage resulting from US energy independence could have an outsized impact on developing markets relative to developed markets. In technology, a major characteristic of the advances made has been polarized employment opportunities. A prevailing feature of loose monetary policy has been widening wealth inequality, which may not reverse as policy tightens. Furthermore, a threat to some developing markets could arise as policy tightens. And environmental policy often has the side-effect of favoring outcomes for richer nations over developing nations.

Declining global cooperation
The potential global foreign policy withdrawal of the US, in concert with a probable increase in instances of cyber-crime, could spark greater global geopolitical uncertainty and mistrust. Meanwhile, the aforementioned rise in inequalities could fuel a rise in internal political strife. And cooperation between emerging and developed markets will likely be tested with respect to the exit from loose monetary policy and in attempting to reach environmental agreements, both of which could have unintended, and unequal, consequences.

The solutions to all these issues will require more, not less, global cooperation. Global policymakers will be charged with trying to bridge the gap. However, it is not only inter-governmental cooperation that is needed, but intra-governmental cooperation too. Macro-prudential measures are unlikely to lead to optimal outcomes if the "macro" is inconsistent with the "prudential."

The temptation to solve problems through regulation will be great. But doing so can deliver mixed results.

In our own sector, we agree that regulatory reforms, together with banks' own efforts, have markedly reduced leverage and risks, increased capital and liquidity, enhanced disclosures, simplified legal structures and improved resolvability.

Yet a number of problems remain. Some involve adverse incentives such as the leverage ratio approach, which discourages banks from holding high-quality liquid assets such as government bonds in their liquidity buffers, as it

does not discriminate based on quality, and can lead to unintended and ill-advised forced deleveraging in a crisis. Other problems involve an approach uncoordinated with other objectives: for example, the desire for banks to hold more capital, but also for higher growth by making more credit available.

In line with the theme of declining global cooperation identified throughout this paper, larger differences are emerging between global and local regulatory frameworks. A new emphasis must be placed on such coordination and collaboration to maintain a level playing field for global banks and the efficient deployment of capital and liquidity by them. It is also crucial to preserving the benefits of a globalized financial system.

Recommendations

We are not pessimistic about the path the world is on.

However, as we convene at the World Economic Forum to discuss The New Global Context, the potential for elevated societal and political volatility highlighted in this paper shows that urgent action is required, particularly with respect to addressing local and global inequalities and building a strong, systems-based policy framework for global security that encompasses every dimension, whether geopolitical, financial, physical or digital.

Given the often mixed results and unintended consequences of regulation, the recommendations in this paper are incentive-based, including improving educational outcomes and using greener technology. The solutions will require inter-governmental and intra-governmental cooperation, notably in the areas of global security, environmental policy, central bank decision-making and emerging-market reform.

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