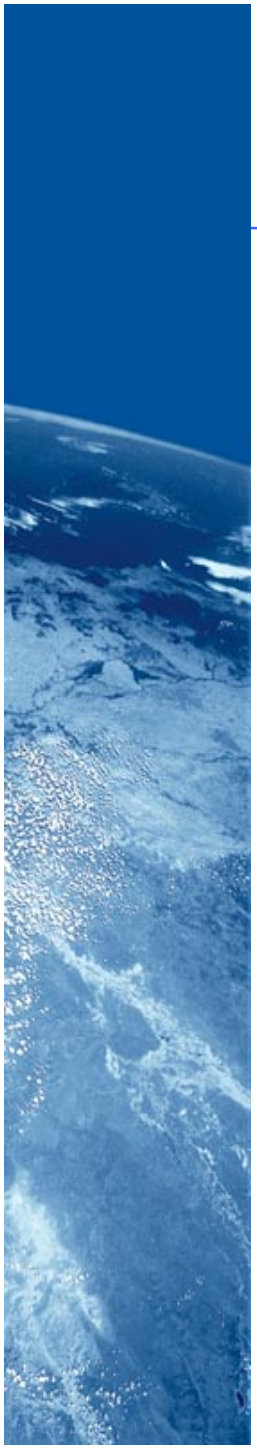


Long-term scenarios for the future of the global financial system

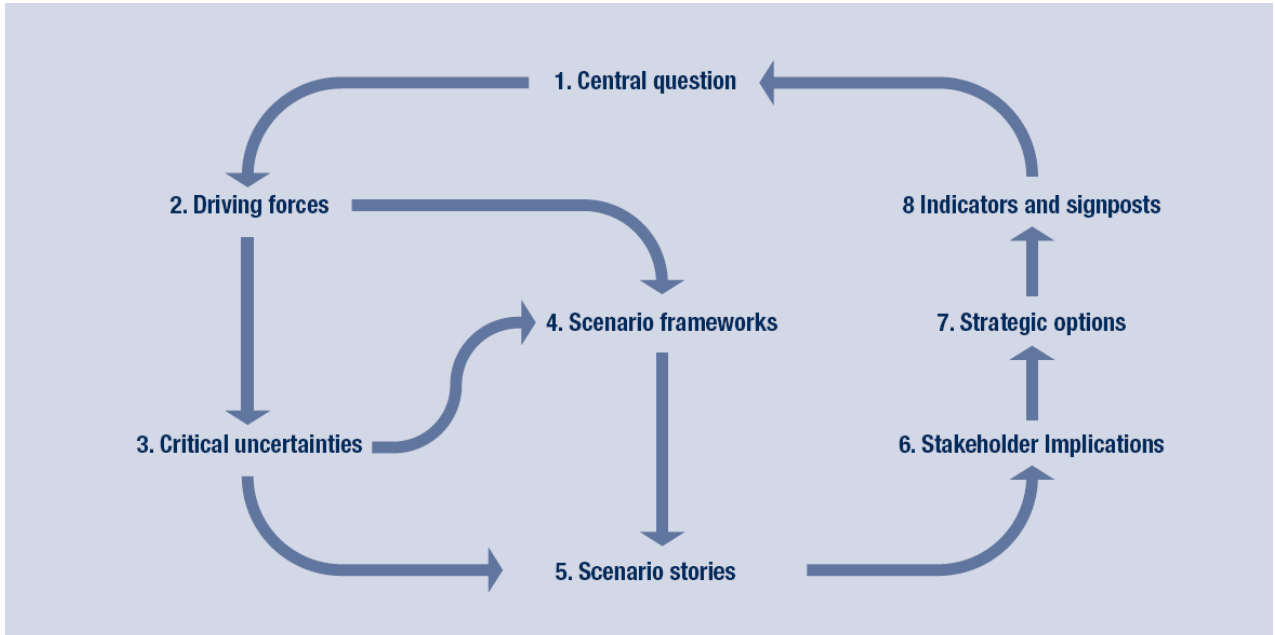
Key driving forces compendium

Introduction to driving forces

As described in Section 3 of *The Future of the Global Financial System: A Near-Term Outlook and Long-Term Scenarios*, the World Economic Forum's scenario methodology begins with a series of interviews, workshops and research efforts focused around identifying the "driving forces" that could impact the central question of interest.

This document serves as a reference to the definition and core characteristics of selected driving forces, in particular those that were judged to be critical uncertainties (i.e. having high impact on the outcome of the central question whilst also being highly uncertain in terms of the range of possible values the force variable could take).

Each force is described in terms of background data, relevance to the central question and the results of a prioritization survey that gathered participant views on impact, timing of impact and uncertainty of the forces.

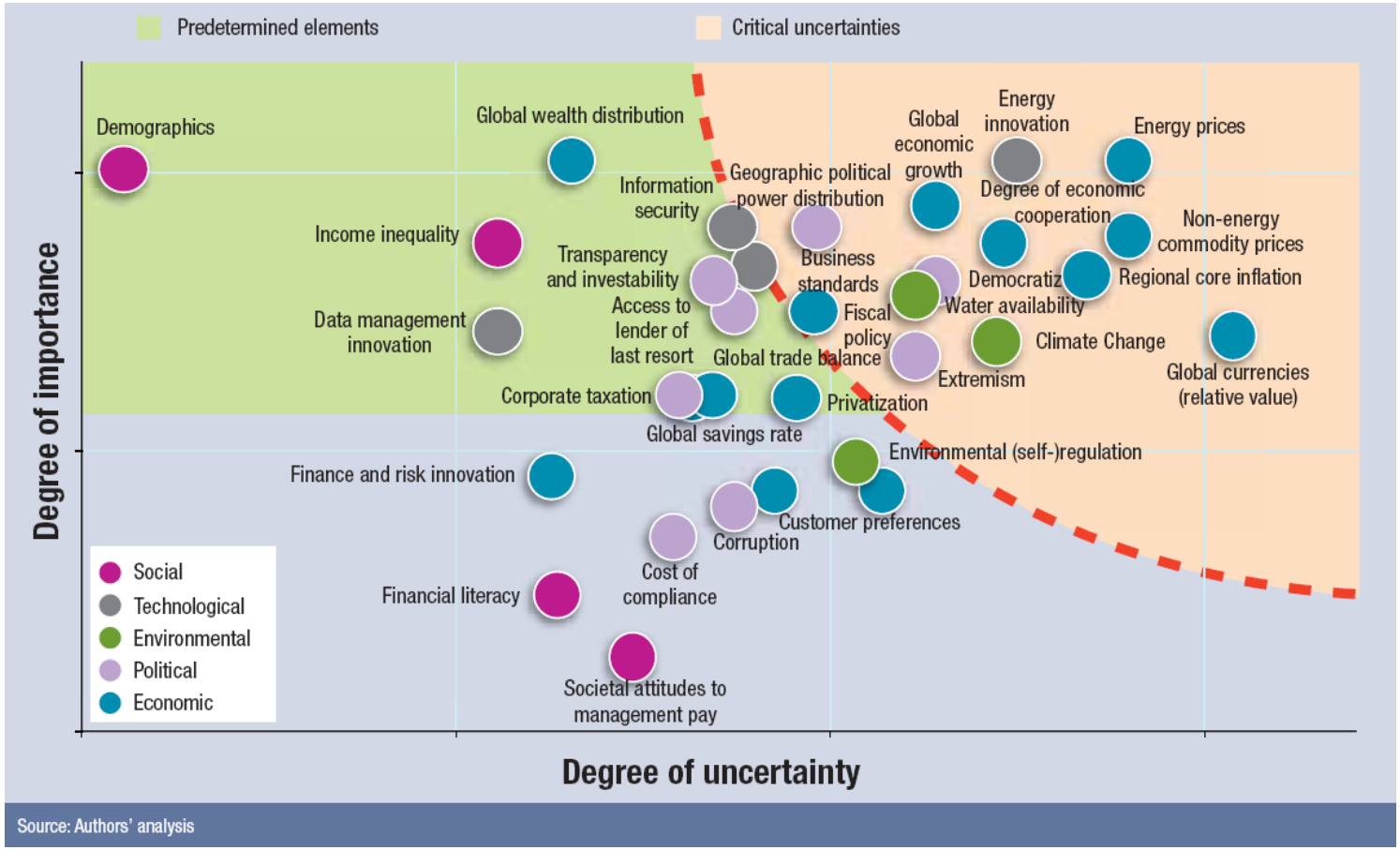


Driving forces framework

Social	
§ Demographics	Regional population sizes and dependency ratios
§ Financial literacy	Layman's ability to understand and apply financial and economic principles
§ Income inequality	Distribution of wealth among a country's population
§ Societal attitudes to management pay	Pressure for executive compensation reform
Technological	
§ Business standards harmonization	Degree of international convergence in business processes, platforms and IT specifications
§ Information security	Data protection and risk of data loss
§ Data management innovation	Advancements in data platforms including availability, speed of access and use
§ Energy innovation	Advancements in energy efficiency and alternative fuels
Environmental	
§ Climate change	Pace of improvement or deterioration in global climate conditions
§ Environmental (self) regulation	Degree to which public externalities are priced into private sector activities
§ Water availability	Shortage of drinking water or drought
Economic	
§ Finance and risk innovation	Academic advancements in financial and risk theory and application
§ Fiscal policy	Government budget surplus/deficit
§ Energy prices	Price level and volatility of oil and alternative fuels
§ Non-energy commodity prices	Price level and volatility of metals, agriculture and softs
§ Company valuations	Earnings multiples applied to industries/sectors
§ Global currencies relative value	Exchange rates and volatilities of existing and emerging major currencies
§ Degree of economic cooperation	Cooperation or protectionism in trade and global regulation
§ Global wealth distribution	Regional share of total global wealth
§ Global economic growth	Change in global real output
§ Regional core inflation	Change in consumer price levels (excluding food and energy)
§ Regional interest rates	Cost of borrowing money in existing and emerging economies
§ Global savings rates	Public and private investment as percentage of global output
§ Customer preferences	Shifts in demand for existing and new products/services
§ Global trade balance	Trade surplus/deficit between regions and major economic partners
Political	
§ Access to lender of last resort	Role of regulator providing capital to institutions in distress
§ Corruption	Regional variations in ethical government/business practices
§ Cost of compliance	Corporate investment/expense to comply with regulatory guidelines and rules
§ Extremism	Religious and ideological attitudes
§ Geographic political power distribution	Hegemony – Single versus multiple centers of gravity
§ Democratization	Degree of political free will and use of market–based mechanisms
§ Privatization	Degree of private sector involvement in public infrastructure investing
§ Transparency and investability	Global consistency and enforcement of accounting standards, external auditing and frequency of reporting
§ Corporate taxation	Regional variations in tax and trade tariff levels

Survey results: prioritization of key driving forces on the future of wholesale financial markets

Broadly speaking, those forces which fall into the category of “critical uncertainties” are varied within each scenario to ensure differentiation between possible futures, and to enhance the challenging nature of the scenario set as a whole. Those that fall into the category of “predetermined elements” tend to be more similar across all scenarios, as they are judged to be less uncertain in terms of the range of possible values they can take in the future. The following selected forces focus primarily on the “critical uncertainties” as prioritized by participants in the New Financial Architecture project.



Energy innovation

Advancements in energy efficiency and alternative fuels

Background, facts and projections

- In 2005, global energy consumption amounted to about 139.000 TWh; it has risen by 2 percent since 1980. Currently, 86.5% of this consumption is met by burning fossil fuels like coal, gas and oil
- Since the early 1990s, renewable energy capacity has been added at a large scale. In 2007, it accounted for roughly 8% of total production, most of it from hydroelectric power plants. Biomass, wind and solar accounted for 2% of the total
- Global investments in clean energy grew by 65% p.a. since 2004 and amounted to US$ 148 billion in 2007. Estimates are for investments of US$ 450 billion by 2012 and US$ 600 billion by 2020
- Investment in sustainable energy is still mostly in OECD countries, with the US and EU together accounting for more than 70% in 2006. However, investment in developing countries is growing quickly: 21% of the global total in 2006 occurred in developing countries, compared with 15% in 2004
- There have been major inroads in the efficiency of alternative energy production. The cost of producing electricity from wind power has dropped from 80 cents per kWh in 1980 to 5 to 7cents in 2007, making wind turbines commercially comparable to the other sources of electricity production but still high compared to nuclear production or compared to conventional power plants when oil price is below US$ 100
- At the same time, the energy efficiency of appliances has also been increased. E.g., refrigerators built in 2008 consume 50% less energy than the models built in 1990. Major inroads have also been made in housing insulation and engine efficiency as well as energy efficiency of IT infrastructure
- Predictions are that in the next decade, further inroads will be made in production costs and efficiency of wind and solar capacity. Completely new technology like fusion will take longer to come online

Relevance for wholesale financial markets

Impact on other driving forces

- Energy innovation would bring marginal generation costs down and therefore would affect energy prices and inflation
- In the very long run it is hoped that energy innovation can slow climate change

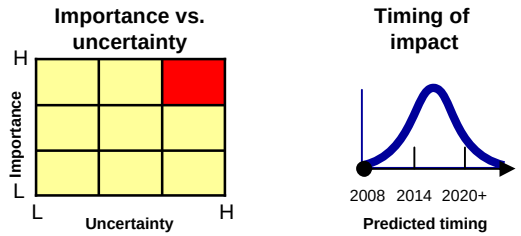
Impact on capital flows

- A major push towards alternative energy sources requires global extensive infrastructure investments that would probably have to be funded by private investors

Impact on wholesale markets participants

- Technological breakthroughs in new technology would require major R&D, having to be funded by venture capital
- Longer term, energy innovation could lead to wealth accumulation in countries with favourable conditions for alternative energy
- A massive switch to alternative fuels could also drive demand for intelligent weather related insurance incl. securitization

Results of driving forces prioritization survey



Source: US department of energy, BP 2006 statistical review, New energy finance, Ernst & Young, United Nations Environment Program, Energy Information Administration

Energy prices

Price level and volatility of oil and alternative fuels

Background, facts and projections

- Currently, 86.5% of global energy production come from burning fossil fuels like oil, natural gas and coal. Thus, the price for fossil fuel directly influences global energy prices
- In the last 30 years the nominal oil price in US$ has been up by 11% p.a. with accelerated growth of 23% p.a. since 2002 until mid-2008. Prices of gas and coal move with the oil price and are also up significantly. These trends have dramatically changed recently with oil prices from above US$ 140 mid-2008 to about US$ 40 end of 2008.
- Major reason for energy price increases have been the high demand of developing nations in South East Asia and also a lack of refinery capacity, esp. in the US. The global economic slowdown and advent of a recession are the main explanations for the recent drop of energy prices
- There are no serious oil price forecasts for 12 years out, but even short-term projections differ significantly ranging from below US$ 25 to US$ 80 for the oil price in 2009 (Nov/Dec 08 forecasts)
- Major factors for the further development are the global economic growth and the ongoing discussion about global warming that might lead to energy taxation and thus further increasing prices

Relevance for wholesale financial markets

Impact on other driving forces

- The cost of energy generation based on conventional methods is a key determinant of investment in energy innovation and efficiency gains
- With households' and businesses' demand for energy being relatively price inelastic in the short and medium term, energy prices affect savings rates, corporate earnings/valuations and inflation in its broader definition. Economic growth is also directly affected
- Energy prices affect global wealth distribution as funds are shifted from energy users to energy exporters

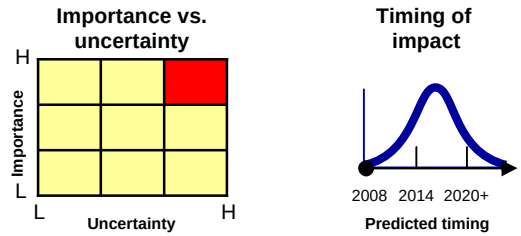
Impact on capital flows

- Energy prices drive capital inflow in fossil fuel producing countries to pay for the fuel and into further investments

Impact on wholesale markets participants

- Level of energy prices drives demand for hedging against further price increases and sustained high volatility
- The level of fuel prices determines the pace of capital accumulation of fuel exporting countries and their Sovereign Wealth Funds

Results of driving forces prioritization survey



Source: OPEC, US department of energy, Merril Lynch, International Energy Agency, FT

Regional core inflation

Change in consumer price levels (excluding food and energy)

Background, facts and projections

- Global inflation ran at double digit numbers in the 1980s until 1995, slowing down significantly since then. In the years since 2000 it came in between 3% and 4% per year to pick up again in 2008
- Lower inflation rates since the mid 90s have been mainly caused by cheap labour in Asian and Eastern European countries keeping wages low and, until recently, by favourable energy prices
- Inflation was lowest in developed countries (US and Western Europe between 2 and 3%, Japan even reported deflation) and running in higher single digits in developing nations
- Predictions for inflation of consumer prices [Q4->Q4] in emerging and developing countries until 2013 have decreased from 7.2% in 2008 to 5.9% in 2009 because of the fall of commodity prices. Predictions are for around 5% p.a. from 2010 until 2013. Developed nations are projected to report inflation rates of 2.9% in 2008 and 1.4% in 2009, followed by rates around 2% until 2013

Relevance for wholesale financial markets

Impact on other driving forces

- Inflation drives nominal interest rates. In high inflation environments savings rates tend downwards.
- P/E ratios and thus company valuations tend to be lower in high inflation environments

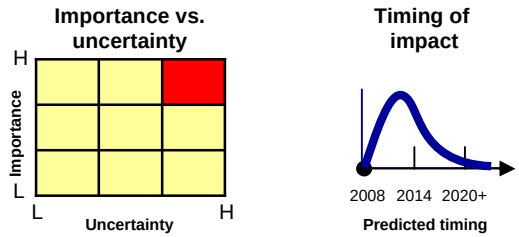
Impact on capital flows

- With rising inflation, demand for hedging instruments and alternative investments like inflation protected bonds or infrastructure increases
- With rising inflation, demand for financial assets decreases in favour of real assets

Impact on wholesale markets participants

- In high inflation environments willingness to give credit decreases hurting credit driven industries like Private Equity and Hedge Funds
- Governance: high inflation rates tend to trigger discussions about tradeoffs between monetary stability and unemployment rates

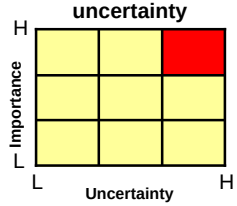
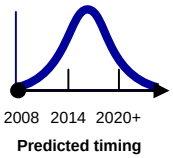
Results of driving forces prioritization survey



Source: IMF, OECD, Economist Intelligence Unit

Non-energy commodity prices

Price level and volatility of metals, agriculture and softs

Background, facts and projections	Relevance for wholesale financial markets
n Commodity prices excluding energy have been very stable over a time span from the 1960s until well into the 1990s with one major price shock at the beginning of the 70s. During that period, the Reuters Commodity index CCI, including livestock, grain, softs and metals, has increased by about 3 percent p.a., in line with long term inflation n However, within the last 10 years the index is up 11 percent p.a., well above inflation. The biggest increase came since 2004 with growth rates of 22 percent p.a. until mid-2008. The biggest rise came in the metals index with slower appreciation in the textile and livestock indices n Price appreciation has mainly been caused by increased demand for commodities by the growing Asian nations including China. The anticipated recession explains the decline of prices n Until the 1970s volatility of commodity prices was low to pick up in the first energy crisis. Since then the markets have remained volatile with extreme levels since 2004	**Impact on other driving forces** n Commodities serving as input for a variety of consumer goods, their prices directly impact inflation and growth n As commodity prices influence the generation of wealth within the export nations, they might influence social and political variables like democratization and distribution of wealth n Indirectly, political power distribution is affected as export nations gain influence **Impact on capital flows** n Commodity prices drive capital inflow into commodity exporting countries to pay for the deliveries and to invest further in production infrastructure **Impact on wholesale markets participants** n The level of commodity prices drives wealth accumulation in the export nations, increasing Sovereign Wealth Funds' potential for investments abroad n With high price levels and volatilities the demand for hedging instruments increases
	Results of driving forces prioritization survey **Importance vs. uncertainty**  **Timing of impact** 

Source: Reuters, Commodity Research Bureau CRB

Global currencies relative value

Exchange rates and volatilities of existing and emerging major currencies

Background, facts and projections

- Following World War II, the global currency policy was shaped by the Bretton Woods agreement which set a fixed exchange rate between local currencies and the US$, the US$ being the only currency directly convertible into gold. The seventies saw the end of Bretton Woods agreement with the adoption of floating rates and the abandon of the gold conversion
- The US$ has declined significantly from mid 2007- mid 2008 losing about 20 percent versus the Euro. Major reasons for this devaluation were the large US current account deficit, which reached 6.2 percent of GDP in 2006 and the widening interest rate differential between the US and other developed economies
- But from mid-2008 to Nov. 2008, the US$/Euro rate changed very rapidly with a 20% increase of US$ value despite still higher interest rates in the Euro Zone, then a reinforcement of the Euro compared to the US$. The most spectacular movement has been seen on the Yen value compared to the Euro with a 30% increase between August and November 08. That opens unsolved questions about the perspective of the currency values.
- In terms of purchasing power parities, the US$ seems still to be undervalued compared to the European currencies but fairly or overvalued compared to the major Asian currencies
- Several important trade partners (amongst them China and many gulf states) peg their currencies against the US$ thus reinforcing the US currency. These countries continue to hold large parts of their reserves in US$. There is uncertainties on what their policy will be going forward

Relevance for wholesale financial markets

Impact on other driving forces

- Via arbitrage, exchange rates impact interest rates and inflation. As long as fossil fuel is paid in US$, energy prices in the European and Asian countries are also affected by the exchange rate

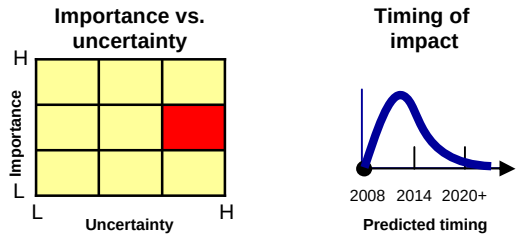
Impact on capital flows

- Consistently weak currencies will drive export and thus capital inflows
- As weak currencies usually go hand in hand with low interest rates, they may induce carry trades and thus capital outflows

Impact on wholesale markets participants

- High volatility of currencies relative value makes the very liquid underlying attractive for hedge funds
- Financial institutions with strong home currencies are favoured in M&A transactions and might drive consolidation processes

Results of driving forces prioritization survey



Source: Economist Intelligence Unit, Bloomberg, OECD, UN, CME

Democratization

Degree of political free will and use of market – based mechanisms

Background, facts and projections

- Democratization describes the transition of a country towards an open society adhering to vesting of power through free elections and use of economic market-based mechanisms. Countries may move in both directions, from democracies to authoritarian regimes and vice versa
- In the 20th century, there has been a surge of democratization beginning after the 1st and 2nd world war in Europe, in the 70s in the Iberian peninsula and Latin America and in the 90s reaching the Communist regimes in Europe and Asia
- In its 2008 report, Freedom House counts 90 democracies (up from 43 in 1977), 60 partly free societies and 43 authoritarian regimes that account for 36 percent of the world population
- In 2007, the number of countries that experienced negative changes in freedom outweighed those that underwent positive changes. The Polity IV project publishes a Fragility Index listing countries that might change status. Prominent on the list are polities in Africa, South East Asia and Latin America

Relevance for wholesale financial markets

Impact on other driving forces

- With a democratization process political variables should move towards openness and individualism. One would expect higher transparency, privatization and a retreat of corruption
- With ongoing democratization, the economic variables tend to move towards higher growth and wealth generation. Income inequality, however, will rather get larger

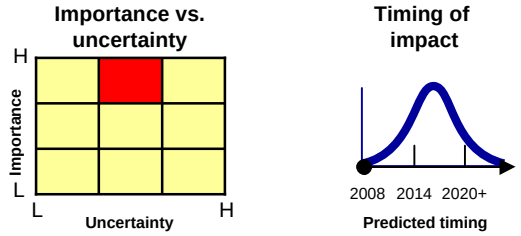
Impact on capital flows

- With greater market openness and higher growth rates, investment in countries moving towards democratization may go up significantly driven by investments in transport and communication infrastructure

Impact on wholesale markets participants

- In early phases of democratization external funding needs are big leading to market opportunities for market participants like investment banks, private equity and hedge funds
- In later stages, a middle class will evolve that develops demand for products like asset management and insurance
- Governance: ongoing democratization in a country would probably trigger more open and “light touch” regulation

Results of driving forces prioritization survey



Source: Freedom House, Polity IV project, UNO

Water availability

Shortage of drinking water or drought

Background, facts and projections

- In 2004, 83 percent of the world population had access to safe water, up from 78 percent in 1990. Progress has been made in SE Asia as well as several African countries. Conditions have deteriorated in several countries with ongoing armed conflicts and/or rapidly growing populations
- By 2025, more than 2 billion people are expected to live in countries with difficulties to meet the water demands of agriculture, industry and households. Main drivers of this development are population growth, urbanization, development of manufacturing industries and extended draught periods
- In the US, desalination and water purification technologies are seen as crucial for having safe, affordable and sustainable water supply in the future
- There are about 13000 desalination plants in the world mostly in Middle East which produces about 52 million cubic meter of fresh water per day. The cost of desalinisation is around US$ 0.50 per cubic meter, down from around US$ 10 in the 1960s

Relevance for wholesale financial markets

Impact on other driving forces

- Ongoing water infrastructure programs might lead to massive privatization efforts
- Water availability is a prerequisite for peaceful development without social unrest and extremism rising

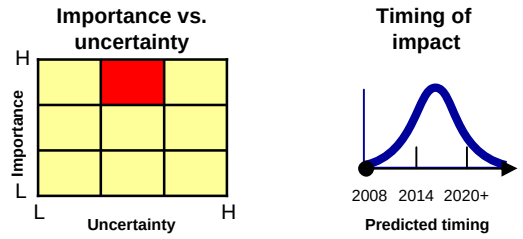
Impact on capital flows

- A major push towards water (purification) infrastructure could lead to capital inflows into countries with investment needs, e.g. in the Mid East

Impact on wholesale markets participants

- With increasing shortage financial products on the underlying water (futures, options, indices) might be developed with new business opportunities for hedge funds and insurance
- For asset managers this could be a new asset class with major investments in infrastructure

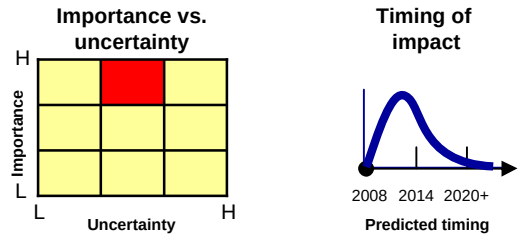
Results of driving forces prioritization survey



Source: UN, US Department of Interior/Bureau of Reclamation, Wall Street Journal, Forbes, Businessweek

Fiscal policy

Government budget surplus/deficit

Background, facts and projections	Relevance for wholesale financial markets
n OECD member countries have increased government debt by 3% p.a. on average between 1997 and 2007 n Double digit growth rates of total government debt were reported by transforming nations in Eastern Europe. Developed nations usually posted increases in government debt approx. in line with growth rates (3 – 5%). China runs at a budget deficit of 1% of GDP while most developing South East Asian nations run deficits below 3% n In 2007, some EU major countries are still above the Maastricht target of 60% debt-to-GDP, notably Germany and France with 65% and 64% respectively. Other countries stay well below that threshold, e.g. Spain (36%) and the UK (44%). Major exporting countries have benefited from the high commodity prices and post low debt levels (Russia 6%, UAE 21%, Algeria 18%). The major developing countries have grown recently without an excessive increase in public debt (China 18%, India 58%, Brazil 46%). The two major developed countries show very different figures with a 61% debt-to-GDP ratio for the US and a 170% debt to GDP ratio for Japan. The extreme Japanese ratio is the heritage of the "lost decade" and an aging population n In a long-term perspective, the ageing of the population is the main driver of the debt-to-GDP ratio. Due to recent reforms (2007 S&P calculations), projections for France and Germany are quite stable until 2020 and will increase thereafter with a German 90% debt-to-GDP ratio and a French 180% ratio in 2050. According to S&P 2004 calculations, the debt-to-GDP ratio in 2050 could be above 700% in Japan and above 200% in the US	**Impact on other driving forces** n Because of the high volume of government borrowing, fiscal policy directly influences economic drivers like interest rates, inflation and exchange rates. High budget deficits tend to lead to increased taxation later n With sustained high government deficits less funds for public investments would be available paving the way for privatization of infrastructure projects **Impact on capital flows** n Sustained high government lending in the developed countries would lead to further capital flows from South East Asia and Middle East lenders to Europe and the US **Impact on wholesale markets participants** n To attract new creditors, debtor governments might want to consider new financing techniques like inflation protection or foreign currency bonds as well as asset backed securities
	Results of driving forces prioritization survey
	

Source: OECD, S&P, CIA WorldFact Book

Global economic growth

Change in global real output

Background, facts and projections

- Global real economic growth was 3.4% p.a. since 1980 on average with variations between 0.9% and 5.0%. Highest growth rates were reported in developing Asia (7.6% p.a.). Lowest growth rates were in developed economies (2.4%)
- The last three decades have seen different protagonists driving global growth. The US has been established as the global economic leader with strong sustained growth, albeit with high leverage. Other important landmarks were the rise and then the stagnation of Japan, the construction of the European Union which faces modest growth performances, the fall of communism and after a difficult transition period the sharp increases of the Eastern economies, the emergence of SE Asia as a global economic powerhouse thanks to the Asian Tiger nations and since the 00ies the dynamic growth of India and China. But the depth of the current crisis raises doubts about current growth projections
- Due to the recent crisis medium term projections are very unsure, The IMF predicts a global growth slowdown from 5% in 2007 to 3.7% in 2008 and 2.2% in 2009. The developed nations would face a negative growth rate in 2009 at –0.3% and developing nations a growth rate of 5.1%
- On a global scale, medium term growth will strongly depend on the further economic development of the Asian nations, esp. China and India. These economies have been driven by exports in recent years which will likely slow down in short term

Relevance for wholesale financial markets

Impact on other driving forces

- Economic growth drives demand and prices for energy and other commodities as well as interest rates and inflation. It also influences corporate earnings and thus company valuations
- In extended growth phases government deficits tend to shrink relative to GDP

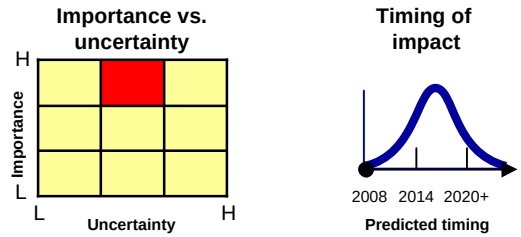
Impact on capital flows

- In growth environments, earnings and valuations usually go up driving the appetite for risk and equity investments

Impact on wholesale markets participants

- Growth leads to disproportional increases in demand for wholesale FS products thus facilitating business for all market participants
- Industry structure: Consolidation usually occurs in industries with low growth
- In high growth scenarios, export nations should gain above average

Results of driving forces prioritization survey



Source: OECD, Oliver Wyman, IMF, Economist Intelligence Unit

Global GDP and wealth distribution

Regional share of total global GDP/wealth

Background, facts and projections

- In 2007, the world nominal GDP reached US$ 54.6trillion with developed economies posting a share of 72%. In the advanced economies the nominal GDP per capita was almost US$ 40,000 , 14 times higher than in the emerging and developing countries
- According to recent projections, the developed nations' share in GDP will probably decline to about 62% until 2012. The ratio between the advanced and emerging economies' nominal GDP per capita will probably come down to a ratio of 10x
- In 2000, the US represented 6% of world population but 34% of household wealth [wealth = assets – liabilities]
- North America, Europe, rich Asia and Pacific owned almost 90% of total global wealth (2000 figures)
- Financial assets become more and more prevalent depending on the level of development of an economy
- Between countries, wealth is more unequally distributed than GDP as advanced economies have accumulated wealth in the past
- The major uncertainty is to predict Asian developing nations' average growth rate until 2020 taking the developing recession into account

Relevance for wholesale financial markets

Impact on other driving forces

- Global wealth distribution is one variable of geographic political power distribution
- It will also impact economic driving forces like exchanges rates in developing countries if it goes along with extended growth periods in these regions

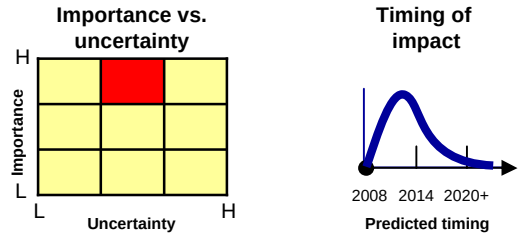
Impact on capital flows

- Capital inflows tend to increase the value of domestic assets and to fuel GDP growth

Impact on wholesale markets participants

- With wealth being built in developing regions demand for new insurance and asset management products (e.g. life insurance, retirement savings plans) might evolve
- Wealth increase in developing regions may favour the birth of new private banking actors
- Governance: developing nations might develop their own rule sets

Results of driving forces prioritization survey



Source: IMF/ WEO2008, UNO, Economist Intelligence Unit, UNU-WIDER

Climate change

Pace of improvement or deterioration in global climate conditions

Background, facts and projections

- Climate change is a long term average change of weather conditions in a certain region or on a global scale including temperature, precipitation and wind patterns. These changes have been caused by dynamic processes on the earth and its atmosphere
- More recently, they have been linked to human activities like CO_2 emissions which are caused by the burning of fossil fuels, increased cement manufacture and increase of livestock in agriculture
- Global surface temperatures have increased about 0.74 °C since the late 19th century and the linear trend for the past 50 years of 0.13 °C per decade is nearly twice that for the past 100 years
- The development of the global climate is too complex to be accurately predicted using computer models. Current predictions for temperature increases for example range from +1,4 degrees to +5,8 degrees until 2100. The IPPC predicts that by 2050 CO_2 emissions have to be cut by half if the global temperature increase is to be kept below 2-5 C° over the coming decades
- Climate change is predicted to lead to extreme weather events like heat waves, storms, flooding and extended drought

Relevance for wholesale financial markets

Impact on other driving forces

- Climate change has already started to drive environmental regulation and with it energy prices as CO_2 emissions start to be priced into generation costs
- If not acted upon, climate change could influence water availability and, if struggles over water began, in its wake political variables like extremism, democratization and power distribution

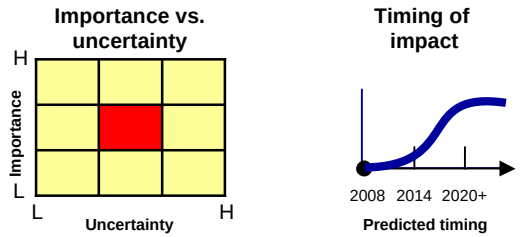
Impact on capital flows

- Long term climate change could lead to investments in countries favoured by climate change, probably those without large shorelines and in colder climate zones

Impact on wholesale markets participants

- Extreme weather events caused by climate change would bring insured damage and risk premiums up and could lead to insurers' demand for new risk models

Results of driving forces prioritization survey



Source: US department of commerce, Intergovernmental Panel on Climate Change (IPPC)

Environmental (self-) regulation

Degree to which public externalities are priced into private sector activities

Background, facts and projections

- The classic approach for environmental policy has focused on command and control based mechanisms setting emission caps for certain regions or industries. Within this approach the consumer does not directly pay for external effects
- The CO_2 cap and trade system established by the EU under the Kyoto protocol is the first large scale effort to regulate emissions using market based principles. Polluters can buy and sell pollution permits thus establishing a market price of avoiding emissions. EU-ETS is a landmark environmental policy, representing the world's first large-scale CO_2 trading program, covering approximately 12,000 installations in 25 countries and six major industrial sectors
- The European market for pollution rights has gained in liquidity, reached a volume of about US$ 60 billion in 2007 and is supposed to grow further until 2012
- The scope and structure of CO_2 trading after 2012 is yet unclear and will have to be set up following a new protocol replacing Kyoto. To be efficient in the long run, emissions trading would have to be extended to include other large nations like China and the USA

Relevance for wholesale financial markets

Impact on other driving forces

- Prices for public externalities would directly influence energy prices and might therefore indirectly enhance energy innovation

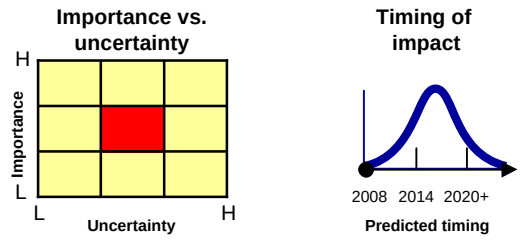
Impact on capital flows

- A major push towards selling pollution rights could channel funds from energy producers to public institutions auctioning the rights

Impact on wholesale markets participants

- Emission permits are a new tradable asset class that could lead to new markets for exchanges, brokers and hedge funds
- Emission trading adds a new source of volatility for energy producers and consumers. Hedging instruments would have to be conceived and implemented

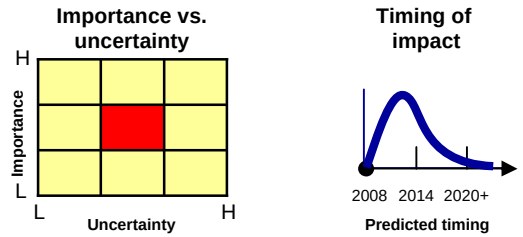
Results of driving forces prioritization survey



Source: United Nations Framework Convention on Climate Change (UNFCCC) , German emissions trading agency

Company valuations

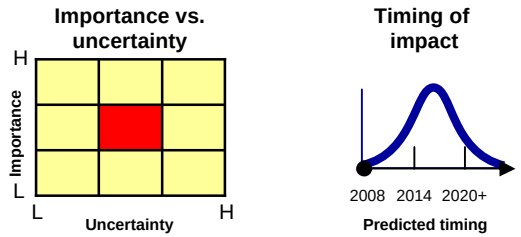
Earnings multiples applied to industries/sectors

Background, facts and projections	Relevance for wholesale financial markets
n P/E multiples in the major stock markets are moving over time with periods of high inflation and high interest rates leading – all other things being equal - to lower valuations. The other important driver is the projected growth rate for corporate earnings n Until the recent crisis average valuations of the major equity indices have increased over time, consistent with lower interest rates and above average earnings growth in the last decade n Within the developed markets Japan has consistently experienced the highest valuations with P/E valuations for the TOPIX 500 with 46x as 87-07 average ratio n The valuation of companies included in the S&P 500 has been fluctuating significantly over time. Between 1936 and 2008 the quarterly average PE Ratio was as high as 46.5 in Q4 2001 and as low as 5.9 in Q2 1949. The average valuation multiple has increased over time from 15.8x (70 year average, 9/1939 – 6/2008) to 25.2x (10 year average, 9/1998 – 6/2008). End of December '08, the S&P 500 PE ratio was 19.6 n The valuation of the Europe Datastream Market Index has increased from an average P/E of 15x for 88-97 period to an average P/E of 17.4 for the 98-07 period	**Impact on other driving forces** n Company valuations go hand in hand with shifts in interest rates and growth perceptions **Impact on capital flows** n Regional differences in company's valuations might result in increased buyouts in countries with lower valuations **Impact on wholesale markets participants** n Lower valuations render equity funding and financing of M&A activities more difficult. This might lead to slow business in emissions and M&A consulting n Dried out equity markets could also increase demand for other financing opportunities. Corporate debts or the use of hybrids like convertibles might increase **Results of driving forces prioritization survey** 

Source: S&P, Datastream, Morgan Stanley

Extremism

Religious and ideological attitudes

Background, facts and projections	Relevance for wholesale financial markets
n Extremism is defined as a political theory favouring immoderate uncompromising policies leading to actions or ideologies outside the perceived political centre of a society, often using violence and terrorism as a means of promoting beliefs. Extremists usually represent religious, nationalistic, racial or ideological ideas n The EIU has the worldwide threat of terrorist actions at medium levels. The greatest risks are seen for the Middle East, countries with uprising minorities like Spain, Turkey and Russia or engaged in armed combat abroad like the US and UK n Until 2013, the EIU predicts a minor increase in terrorist threat	**Impact on other driving forces** n Extremism within a country could lead to political developments towards lower openness, transparency and democracy n Extended phases with threat of unrest or violence will affect free trade leading to lower growth and wealth generation **Impact on capital flows** n Further capital outflow from countries with high levels of violence and unrest seems likely n Extended phases of violence may reduce international trade and with it international capital flows **Impact on wholesale markets participants** n Extremism in a region increases risk of investments thus escalating risk premiums in insurance and investing n As foreign investors are less likely to invest in regions affected by extremism sources of capital become more and more local
	Results of driving forces prioritization survey
	

Source: Economist Intelligence Unit

Income inequality

Distribution of income/wealth among a country's population

Background, facts and projections

- In the US the income inequality has increased sharply during the period 1979-2004. The real average after-tax income of the bottom fifth rose by 6% while income of the first fifth rose by 64%. The top 1% even face an increase of 176%
- Africa and South America tend to report the highest income inequality. The highest income equality is reported by Japan, North European and Eastern European countries
- In the OECD countries, the gap between rich and poor has increased by more than 75% during the last 20 years
- Social mobility is generally higher in countries where income inequality is relatively low. In countries with high income inequality mobility tends to be lower
- Based on 2000 data, the richest 2% of the world's population own more than 50% of the global household wealth. At the same time, 50% of the world owns only 1% of the global household wealth

Relevance for wholesale financial markets

Impact on other driving forces

- High income concentration may create social strains and a rise of extremism
- In developed countries, governments try to mitigate income inequality through social spending and taxation policy with effects on fiscal policy

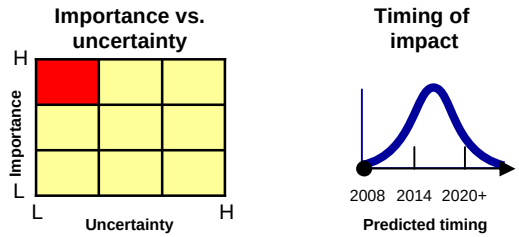
Impact on capital flows

- A high income/ wealth concentration in a country might favour capital outflows as domestic investment opportunities and the liquidity of the domestic capital market remain limited

Impact on wholesale markets participants

- A higher income/wealth concentration on a limited population would favor private banking actors with products like asset management and insurance

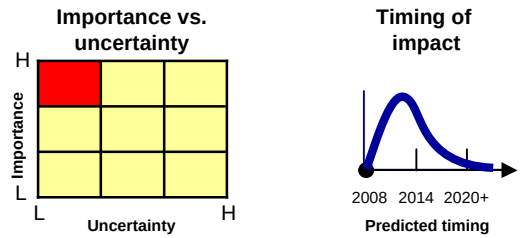
Results of driving forces prioritization survey



Source: UNO, UNU-WIDER, CBO, World Bank, OECD

Access to Lender of Last Resort and to financial support from governments

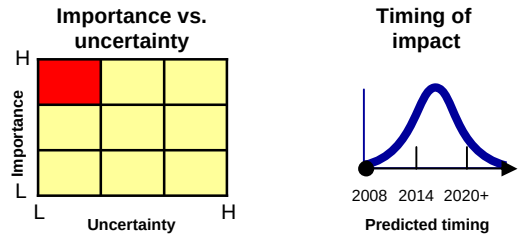
Background, facts and projections	Relevance for wholesale financial markets
n A lender of last resort is an institution willing to extend credit when no one else will. The role is usually assumed by a country's central bank or government while IMF and World Bank have taken the role of international lender to governments or central banks Relevance of the lender of last resort during the 2008 credit crisis: n Bailouts of financial institutions have tended to be national issues with a certain degree of international coordination n The major components of the rescue plans are part-nationalising banks, loans, buyout of illiquid assets, guarantee of inter-bank loans n The rescue plans from the government have come in addition to the liquidity support on a worldwide scale given by the central banks n As of Jan. 09, the bail-out for banks from governments amounts to US$ 358 billion in the US, US$ 96.5 billion in the UK and US$ 134 billon in the EU n After the Lehman Brother collapse, the official position of state governments has been to never let a large bank fail, there was an implicit public guaranty for bank's liabilities	**Impact on other driving forces** n Rescue plans may be seen as gift to the bankers by the population increasing social strains n Fiscal policy is affected as governments incur new debt to finance the rescue packages **Impact on capital flows** n A country able to give access to a lender of last resort and to financial support from the government improves the confidence of the investors on the stability and attractiveness of the financial center **Impact on wholesale markets participants** n A closer supervision of banks will probably go hand in hand with voluminous bail outs n Financial institutions covered by government guarantees benefit from a lower cost of capital than institutions having no public support **Results of driving forces prioritization survey**



Source: FT, Wikipedia

Demographics

Regional population sizes

Background, facts and projections	Relevance for wholesale financial markets
n The world population as of Oct. 08 is estimated at 6.7 billion with 1.2 billion in developed countries, 4.2 billion in the less developed countries excluding China and 1.3 billion in China n The current +65-year-old population represents around 7.5% of the global population. In the more developed countries this ratio is around 15.5%, 6% in the less developed countries excluding China and 8% in China n The 2020 projection for the world population gives a range between 7.4 billion and 8 billion equal to a 0.8-1.3% annual growth rate. The more developed countries will hardly grow at all, the less developed countries excluding China will grow to 4.8-5.2 billion and China to 1.4 -1.5 billion n In 2020, the +65-year-old population will represent 9.0-9.8% of the global population. In the developed countries this quota will be much higher around 19%, with 6.0-6.5% in the less developed countries excluding China and 11.5-12.4% in China n The labour force in high income countries will peak in 2010 and then begin to shrink n Demographics in the next 13 years are well predictable. Only extreme events like pandemics, heat waves and breakthrough life extension innovations can influence the population figures significantly during the next decade	**Impact on other driving forces** n The labor force growth is a powerful driver of GDP growth **Impact on capital flows** n Countries with an elderly population would have to attract capital from abroad to maintain GDP growth n Countries with high population growth would have to attract capital from abroad to finance infrastructure needs **Impact on wholesale market participants** n An ageing of the population creates opportunities for dedicated products like pension products and inflation-related derivatives
	Results of driving forces prioritization survey
	

Source: UN/ESA, Word Bank

Business standards harmonization

Degree of international convergence in business processes, platforms and IT specifications

Background, facts and projections

- ISO (International Organization for Standardization) is the world's largest developer and publisher of International Standards. It is a consortium from 157 countries
- ISO has developed more than 17,000 standards with 1,100 new ones being published each year
- ISO published standards on many subjects as diversified as information technology, steel, cinematography, food products, graphical symbols, and quality management
- One of the major areas of convergence of business standards in the last decade has been accounting rules. Fair value accounting has been widely adopted around the world for drawing up consolidated accounts and the International Financial Reporting Standards (IFRS) is accepted in more than 100 countries. In 2008, the US Security Exchange Commission has published a roadmap for the use of IFRS by US issuers by 2014

Relevance for wholesale financial markets

Impact on other driving forces

- Business standards harmonization is part of economic cooperation and coordination

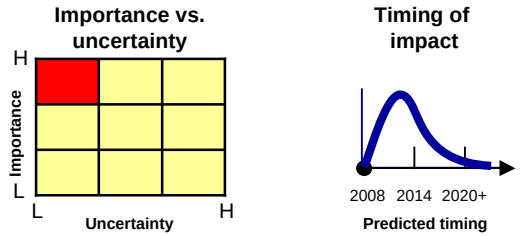
Impact on capital flows

- Applying international business standards may diminish investor's transaction cost and the risk premium and therefore favors capital inflows

Impact on wholesale markets participants

- Business standards harmonization influences the organization of financial institutions. For instance, the practices of the US Investment banks have remodeled the way of European investment banks doing business

Results of driving forces prioritization survey



Source: ISO, FT, IASB, SEC