

Globalisation

A risky business

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Globalisation has big benefits for businesses, but also exposes them to risks. Recent physical, economic and political disturbances have led some companies to re-assess the vulnerability and cost-effectiveness of their global production networks. This article will interest A-level and IBO diploma students keen to learn more about TNCs and global interactions

The idea of the **transnational corporation (TNC)** — 'a firm with operations in more than one country' — is not always good enough to describe the complex global interactions shaping world economic geography. In particular, an important distinction has arisen between two different types of 'operation':

- **Genuine overseas branch plant operations:** production or retailing facilities resulting from **foreign direct investment (FDI)** and owned by the parent company.
- **Business arrangements known as international out-sourcing.**

Large corporations, ranging from Dell to Tesco, have established thousands of subcontracting partnerships while building their global businesses. The term 'transnational corporation' cannot cover this. A better way of describing it is a **global production network (GPN)** (Figure 1). A TNC that orchestrates a GPN (rather like the captain of a sports team) can be described as a **hub company**.

Global production networks

As globalisation has accelerated, the size and density of global production networks has grown. They span food, manufacturing, retailing, technology and financial services. Food giant Kraft and electronics firm IBM both have 30,000 suppliers providing the ingredients they need (helping generate revenues of \$49 bn and \$100 bn respectively in 2010). The world's largest firms have multiplied the size of their **supply chains** many times over through corporate mergers and acquisitions (Kraft acquired Cadbury's GPN in 2010, adding it to its own).

There are two different kinds of global production network (Figure 2), with important

implications for risk management, the focus of this article:

- **Closed networks** are tightly integrated systems where the technologies used by suppliers have in part been developed by the TNC hub company. Examples include Apple and Nestlé (whose 'Nespresso' coffee maker is made from bespoke parts that fit no other type of drinks maker). Closed systems are more exposed to risks of disruption than open systems due to a lack of alternative sources for key parts.
- **Open networks** are loosely integrated systems composed of suppliers who provide

(a) Simple TNC spatial division of labour

A US-owned firm establishes one or two wholly-owned production bases overseas. (In the early decades of the twentieth century, large US car firms such as Ford developed 'clone' operations in countries with market potential, such as the UK, which became home to Ford's Dagenham plant in 1929)



(b) Global production network (GPN)

In addition to its own branch plants, this US-owned TNC is a hub company. It out-sources:

- some manufacturing to a South Korean company (which, in turn, has its own supply chain)
- some administrative functions, such as call centres, to another overseas (or 'offshore') sub-contractor

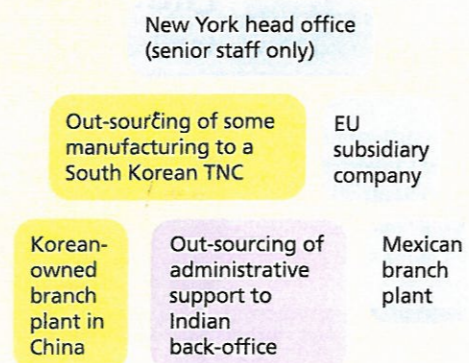


Figure 1 A simple TNC division of labour compared to a global production network



generic parts for many different hub companies. The technologies used may be 'open-source', meaning they are not copyright-protected. Open networks are associated with cheaper electronics, food processing and some out-sourced office work, including ticket sales. If one supplier fails to deliver, substitutes are easily found.

Benefits and costs of GPNs for businesses

Tens of millions of components are shipped around the world every day following the 'just-in-time' model of production (many modern industries do not keep large stocks of parts on their premises). During the 1980s and 1990s, a growing number of companies began to scan the globe for least-cost supply sites and suppliers. Large hub companies have hundreds or even thousands of these — one for every product part they require — as a way of maximising profit. This has been enabled by:

- **tariff removal** between countries (notably within the EU) and in export-processing zones (e.g. Shenzhen and Jakarta)
- **container shipping** (some 200 million container movements are made annually)
- **ICT** that can track shipping movements and place orders on a just-in-time basis (some UK supermarkets send automated e-mails to

food suppliers requesting increased production whenever store tills register high sales for particular items)

■ **ICT** also enables firms to shed in-house labour and out-source 'back-office' functions such as call centres, advertising and accounting (the BBC's accounts are handled by Xansa in India)

All of this helps cut costs, but is not risk-free, as shown by a string of exceptional events during 2008–2011 (Table 1). Exposure to volatile market forces in an interconnected world is a big concern for hub companies. Other important supply chain risks are described on the following pages.

Key terms

Conflict minerals Natural resources that come from a conflict zone. Their production may be a contributing factor to the conflict.

Food miles A measure of how far agricultural produce has travelled (and thus a proxy measure for the food's carbon footprint).

Foreign direct investment (FDI) Money spent by a TNC on ownership of branch plants or other assets in a foreign country.

Global production network (GPN) Chain of connected suppliers of parts and materials that contribute to the manufacturing or assembly of consumer goods. The network serves the business needs of a hub company, such as Tesco or Dell.

Hub company A TNC at the core of a global supply chain network.

International out-sourcing A TNC subcontracting an 'overseas' company to produce goods or services on its behalf (thus avoiding the direct ownership costs associated with branch plants or back offices). It involves contracting a relationship with a supplier and sometimes supplying technology and technical assistance.

Overseas branch plant A factory built in a foreign country by a TNC headquartered elsewhere.

Resilience In economic geography, the capacity of a business (or place) to resume its growth path, or establish a new growth pattern, following some major economic disruption or disaster.

Supply chain The distribution channel of a product, from the initial sourcing of parts to the final delivery to the end consumer. It may include growing crops and acquiring raw materials and/or manufacturing or assembling products.

Transnational corporation (TNC) A business with operations in more than one country.

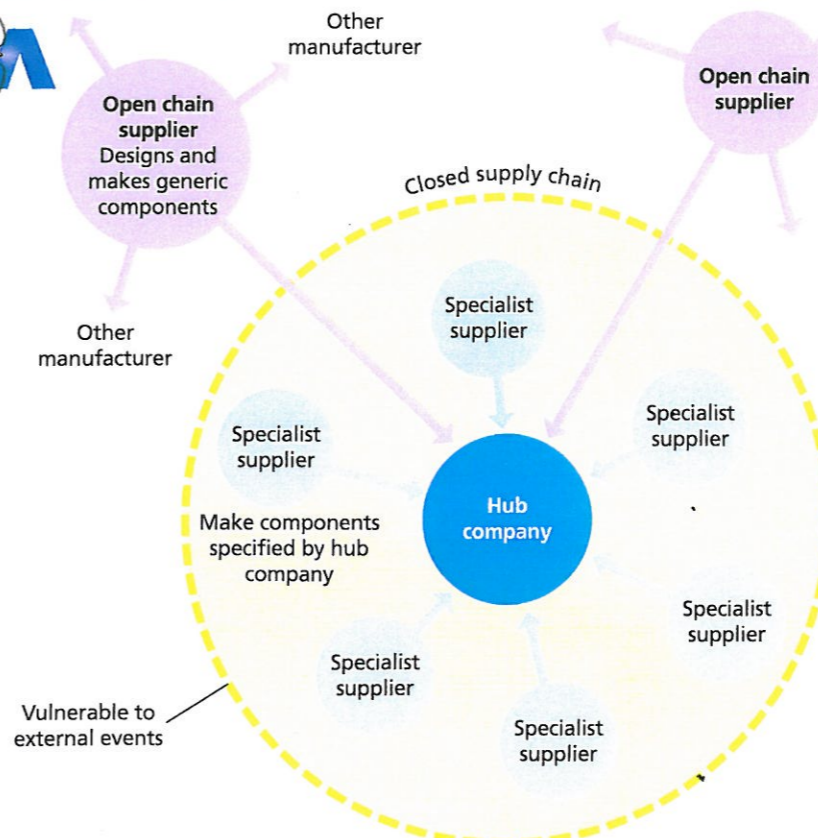


Figure 2 Open and closed global production networks

Inset 1

Why geography matters for global businesses

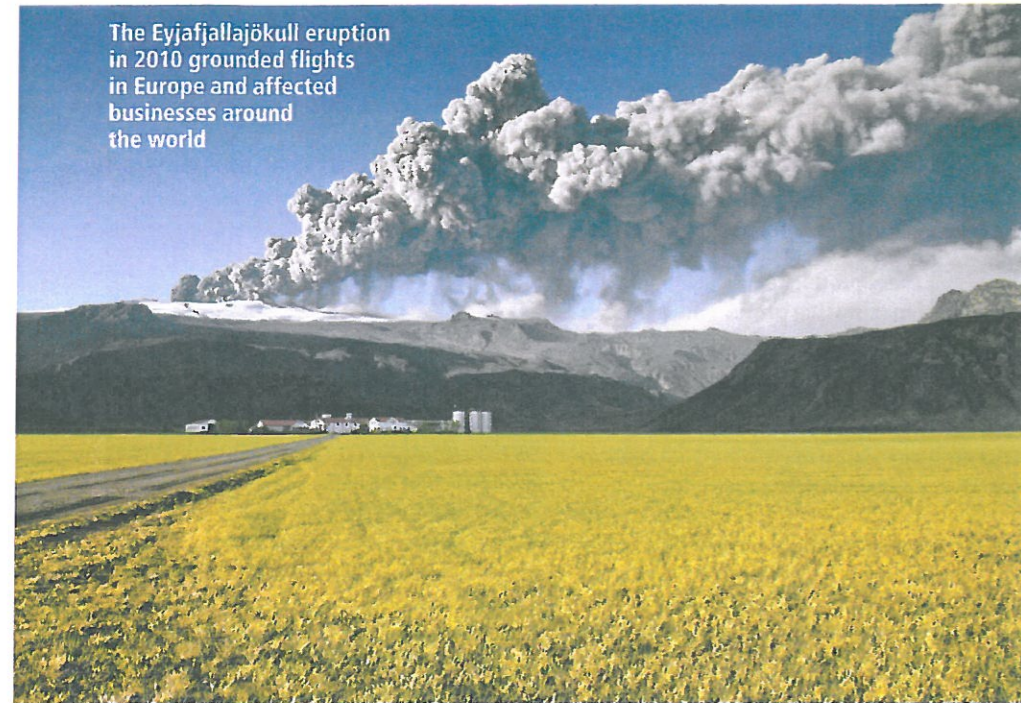
'Some companies had information technology services outsourcing in Egypt which was severely disrupted by its recent political collapse. This shows you need geographical spread in business.'

Axel Lehmann, chief risk officer, Zurich Financial Services

'What people are waking up to is the interconnectedness of global trade — a single missing chip from Japan can shut down an (American) Ford factory on the other side of the world.'

Richard Ward, chief executive, Lloyd's of London

The Eyjafjallajökull eruption in 2010 grounded flights in Europe and affected businesses around the world



Natural hazard risks

Japan's 2011 earthquake and tsunami highlighted the over-exposure of firms across the world to environmental supply chain risks (Inset 2).

■ Natural hazards affect commodity prices: Pakistan's 2010 floods pushed up global cotton prices, a key component for clothing manufacturers.

■ If climate change affects patterns of food and water availability there will be risks for supply chains of agricultural products and industrial products that use a lot of water.

Hub company (USA)

e.g. Apple, American-owned TNC

First-tier out-sourcing (Taiwan)

e.g. Taiwanese-owned Wintek – designs the touchscreens for Apple's mobile devices

Second-tier suppliers (China)

e.g. Lianjian Technology, the Chinese subsidiary of Wintek that manufactures touchscreens

Third-tier suppliers (various)

Suppliers of basic materials, such as plastics

Figure 3 Tiered supply chain production

Table 1 Global risk exposure for businesses, 2008–11

| Event | Date | Impact |
|---|----------------|---|
| Global credit crunch | September 2008 | A US crisis triggered by mortgage defaults spread globally: <ul style="list-style-type: none"> Financial assets worldwide shed more than \$50 trillion in value during 2008 Banks brought to the brink of collapse Other firms affected by falling value of assets and pension funds Fall-off in demand for luxury goods damaged sales for supply chains businesses globally |
| Eyjafjallajökull volcanic eruption, Iceland | April 2010 | Millions of cubic metres of volcanic material ejected over Iceland: <ul style="list-style-type: none"> Flights grounded for weeks owing to cloud of fine ash in airspace Kenyan farmers and flower suppliers went out of business because they couldn't get products to market in the UK (5,000 supply chain workers temporarily laid off) Car production in Europe ground to a halt, as firms could not get key parts |
| Deepwater Horizon oil spill, Gulf of Mexico | April 2010 | The world's worst oil spill occurred when the <i>Deepwater Horizon</i> oil rig exploded: <ul style="list-style-type: none"> The rig was owned by Transocean, carrying out work on behalf of BP, as an out-sourcing relationship. BP has a large global network of contractors, which helps it keep overall costs down BP has blamed Transocean for the disaster but critics say BP should do more to monitor the behaviour of its contractors |
| Arab uprising | January 2011 | A wave of uprisings across north Africa and the middle east: <ul style="list-style-type: none"> French companies such as France Télécom experienced service and supply chain disruption across French-speaking north Africa (work stopped at the Teleperformance call centre in Tunis, for instance) |
| Japan earthquake and tsunami | April 2011 | Devastating earthquake and tsunami in Sendai: <ul style="list-style-type: none"> Major damage to global supply chains in high-tech industries such as smartphones and flat-panel TV manufacturing Japan is the world leader in precision machinery parts. Technology companies throughout the world could no longer procure the parts they needed |

Reputational hazard risks

In highly-publicised 2010 court cases, European companies BP and Trafigura both tried to blame subcontractors for catastrophic environmental damage (in the Gulf of Mexico and Ivory Coast, respectively). But the damage done was to the reputations of the hub companies.

■ Reports of child labour or worker suicides (China, 2010) can do enormous damage to a company's reputation. A spate of fires in Dhaka during 2010 exposed clothing companies Gap and Hennes to brand association with poorly-monitored and unsafe factories owned by the sub-contracting firm Hameem

(in the worst case, 26 workers died when fire exits were blocked).

■ The complexity of GPNs means that hub companies may know little about their supply chain below 'first-tier' suppliers. Apple has audited 288 first-tier suppliers, but knows less about conditions in the factories that supply its suppliers. Chinese environmentalists criticised the company for failing to investigate the poisoning of workers at Lianjian Technology, a second-tier supplier (Figure 3).

■ Other reputational issues to consider are any association with excessive food miles or the use of conflict minerals.



Top: The *Deepwater Horizon* oil spill: what was the impact on the reputation of BP?

Above: Chinese migrants in San Francisco protesting about alleged conditions at the Foxconn factory in China — one of Apple's suppliers

Conflict and geopolitical hazard risks

War and conflict can result in a company losing assets or suffering supply chain disruption. Regime change may bring a TNC into conflict with new leadership (Figure 4).

■ Socialist president Hugo Chávez seized control of ExxonMobil and ConocoPhillips operations in Venezuela.

■ In 2009, Canada-based First Quantum was forced to hand over 65% ownership of a \$550 million copper mining project in Democratic Republic of Congo to the country's government.

■ Political violence in the middle east and north Africa during 2011 provoked volatility

Inset 2

Japanese tsunami effects on supply chains and businesses

1 Worst hit were Japanese manufacturers:

- car makers Honda, Toyota and Nissan
- technology groups like Sony, Nintendo and Panasonic

Supply chain disruption for these domestic firms was severe.

2 Some foreign-owned manufacturing companies suffered production setbacks:

- US carmakers Ford and Chrysler slowed production on red and black vehicles because the Merck factory that was the sole supplier of the paint pigment lay in the tsunami zone
- another badly-affected US firm was Caterpillar

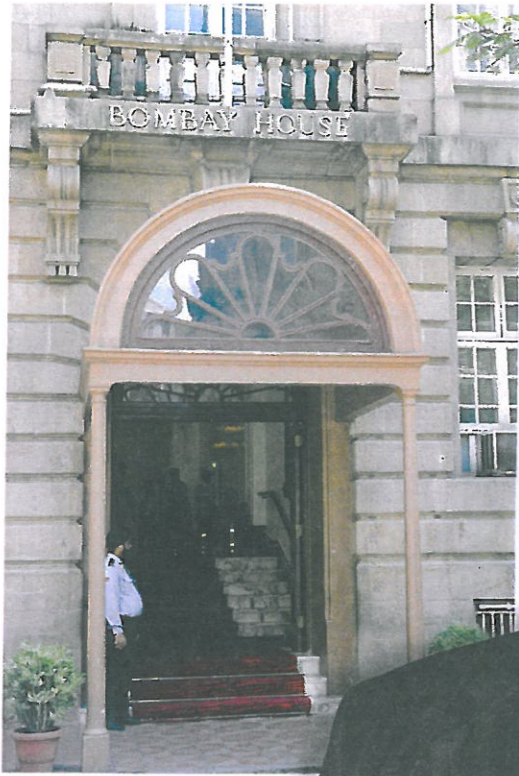
3 Japanese technology companies account for 40% of the world's information technology component supply, including:

- 30% of flash memory for smartphones and cameras
 - 72% of silicon wafers used in the manufacture of computer memory
- US firm Hewlett-Packard lost \$700m revenues due to supply chain disruption and falling demand in Japan

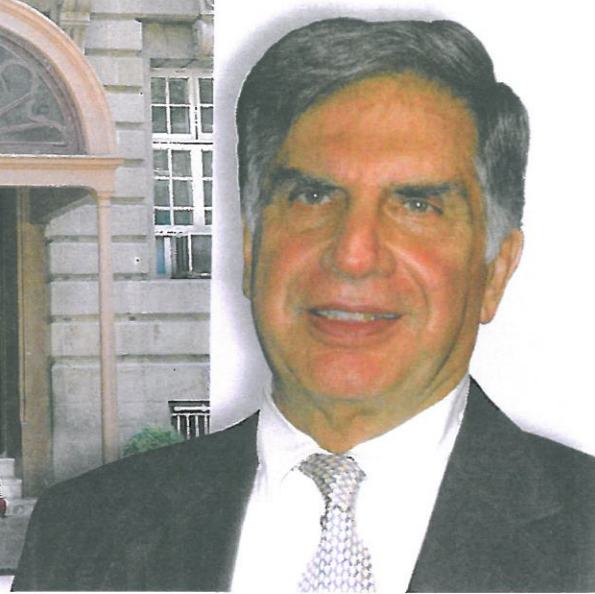
4 Mitsubishi Gas Chemical (MGC) stopped production of bismaleimide triazine resin (a key material used for smart-phones and tablet production). Japan supplies 90% of the world's specialist resins used in the semiconductor industry. Falling global production of smartphones was widely reported.

5 Taiwanese technology companies experienced falling sales of their components due to a global slowing of demand.

6 Korean Air suffered operating losses when flights in and out of Japan were cancelled. But the South Korean carmaker Hyundai saw a 37% rise in sales as it took advantage of its Japanese rivals' disrupted production.



The chairman (Ratan N. Tata), and Mumbai HQ of India's Tata — a global player of growing importance



in commodity prices, especially oil. French TNCs that had built up out-sourcing business partnerships throughout the Maghreb region watched nervously.

Managing global risk

'Black swan' events are 'unthinkable' high-impact, hard-to-predict and rare occurrences

(a concept developed by Nassim Taleb). They bring disproportionate impacts and make the savings from out-sourcing look far less certain. Recent world events fitting this profile have prompted TNCs and hub companies to re-examine supply chain hazards and to contemplate adaption or mitigation strategies. Three broad resilience pathways exist:

- **De-globalise.** Following the Japanese tsunami, several US manufacturers announced a return to using domestic suppliers.
- **Re-globalise.** Extending GPNs to include alternative suppliers gives hub companies back-up sources for goods and services. For example, Western companies that outsourced to Asia are now also investing in northern and southern Africa.
- **'Business as usual.'** Supply chains are not changed but more rigorous agreements are made with suppliers to reduce reputational hazard risks.

Risk cannot be eliminated from global production networks but natural hazard distributions are well-documented, and political risks can sometimes be anticipated. Tools exist for companies to design 'risk roadmaps' identifying critical points of failure, such as a single component for which no alternative source exists. It makes good business sense to acquire greater knowledge of suppliers' suppliers across the entire chain. However, the reality is that engaging beyond first-tier suppliers remains a challenge for many companies.

Concluding remarks

The period 1980–2008 was a 'golden age' for globalisation. In contrast, world events of 2008–11 have required a re-assessment of the costs and benefits of global expansion, especially for the largest corporate players with exposure to multiple hazards. Hub corporations will always be vulnerable to natural hazards and supplier problems, but there is no shortage of geographical research large firms can consult to help them model their exposure to environmental, social and governance (ESG) risks.

Having suffered serious losses, some well-established hub companies are now seeking to lessen their exposure to global ESG risks. At the same time, we can expect to see new growth in global production networks with hub companies headquartered in emerging economies. Newer players such as India's Tata and China's SAIC aim to compete on an equal cost footing with longer-established American, European and Japanese companies. Out-sourcing and foreign investment strategies are already being applied by these rising stars. They may be less concerned about risks to their reputation than their Western competitors (Chinese industries appear to be unconcerned with such risks when doing business in Burma and North Korea, for example).

Questions for discussion

1 With reference to Figure 2, where do you think responsibility ends for a company like Apple? Should ethical businesses be expected

to audit the work conditions found in the factories of second- and third-tier suppliers?

2 How important are 'black swan' events to the study of geography?

3 In the case of conflict hazards, who, if anyone, could and should act to protect a TNC that has been the victim of 'resource nationalism'?

Further research

The website String shows how some firms are doing more to monitor supply chain ethics: www.stringtogether.com

The FTSE4good index is a starting point for investigating ethical investment: www.tinyurl.com/nlogw5

Further reading

Oakes, S. (2010) 'Guitar geographies', *GEOGRAPHY REVIEW* Vol. 24, No. 2, pp. 2–5. (Takes a look at Fender's GPN.)

Oakes, S. (2011) 'Everybody's talking about... Resilience', *GEOGRAPHY REVIEW* Vol. 25, No. 2, pp. 20–21. (Explains importance of 'resilience' for economic geography.)

Taleb, N. N. (2011) *The Black Swan: the Impact of the Highly Improbable*, Penguin.

See this issue of *GeographyReviewOnline* for a PowerPoint on globalisation and risk.

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Key points

- There is an important distinction between a TNC and a global production network (GPN). A GPN consists of a TNC acting as a hub company that has adopted international out-sourcing in addition to the FDI-led building of branch plants.
- Developing a GPN can boost profits, as each part that is sourced bears the lowest possible production cost. Out-sourcing reduces overhead costs and 'headaches' too.
- However, spreading production and out-sourcing across many off-shore locations increases exposure to a range of risks, including tectonic hazards and association with unethical suppliers.
- Some hub companies are re-examining the costs and benefits and may 're-shore' operations.
- Despite the risks, global production networks will continue to grow as more businesses from emerging economies become major players.

Articles

Adams, K. *Hip hop: a culture and globalisation case study*, 2, 2–5

Alcock, D. *Soufrière Hills, Montserrat: Part 1 Recent volcanic activity*, 3, 2–5

Alcock, D. *Soufrière Hills, Montserrat: Part 2 Impacts of volcanic activity*, 4, 16–19

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Butler, J. *Soil degradation in the UK*, 3, 22–25

Dunn, C. *Japan earthquake: a synoptic view*, 1, 20–21

Dunn, C. *Japan earthquake: the economic costs*, 1, 36–37

Dunn, C. *The Arab uprising*, 3, 39–41

Inness, P. and Knight, S. *Tracking a depression: a case study*, 4, 10–13

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Jones, P., Comfort, D. and Hillier, D. *Eat local?* 2, 36–38

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Morris, R. and Speake, J. *Liverpool: rebranding beyond the city centre*, 3, 9–13

Oakes, S. *Japan earthquake: the nuclear disaster*, 1, 9–11

Oakes, S. *Globalisation: a risky business*, 4, 36–41

Petley, D. *Japan earthquake: what caused the earthquake and tsunami?* 1, 2–5

Rawlings Smith, E. *Abu Dhabi goes green?* 4, 2–5

Turner, S. *Rebranding Croyde*, 1, 12–15

Watson, J. *Coastal erosion at Slapton: case study of a conflict*, 2, 8–12

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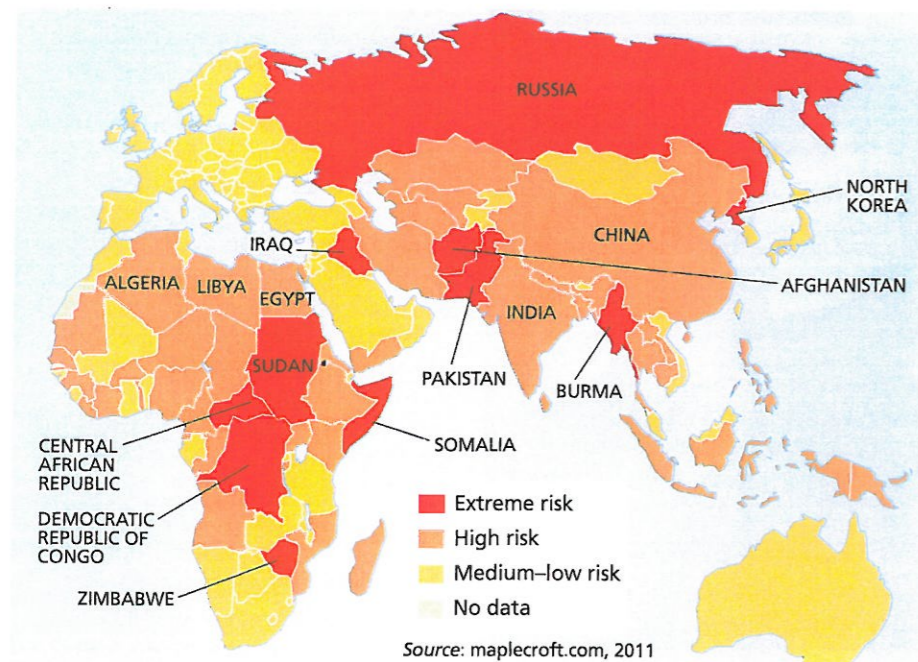


Figure 4 Political risk map for Africa, Europe and Asia. Risk is measured according to the accountability of government, the risk of political violence, and the stability of the business environment