4.1.3 Financial Risk Categories

Unit: Unit 1 – Treasury Strategy

Module: Module 4 – Financial risk

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Summary: Different ways of categorising risk, or taxonomies, are explained, including organisational and source and the business v financial approach is adopted. Major financial risks included foreign exchange, interest rate, commodity and pensions risk as well as liquidity or financing risk. Some financial risks are also business risks. Financial risk, especially financing risk, can also affect business risk as high leverage increases shareholder risk. Operational risk is an important part of treasury. There are several other useful ways to analyse risk.

Keywords: taxonomy, empowerment, business risk, financial risk, operational risk, crossover risks, market risk, liquidity risk, credit risk, pension risk, internal risk, external risk, continuity, committed, uncommitted, rewarded risk, unrewarded risk.

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Learning outcomes:

1. A risk taxonomy is a construction of risk categories.
2. Taxonomy encourages identification.
3. Taxonomy encourages risk aggregation.
4. Taxonomy allows consistent risk management.
5. Taxonomy allows stability o build in risk data architecture.
6. There are several possible approaches to taxonomy, including organisational and source.
7. An approach helpful to treasury is business v financial taxonomy.
8. A useful view of taxonomy is to investigate what investors expect.
9. Taxonomy encourages silo thinking which a treasurer must avoid, by being part of the business conversations.
10. Some risks, crossover risks, fall between business and financial.
11. Financial risk includes market, liquidity and credit risk.
12. Market risk, unusually, allows business to profit from market movements while also exposed to loss.
13. Liquidity risk can be regarded as the ultimate risk.
14. Operational risks have no upside and treasury is a key area of risk
15. Risks can also be analysed in several different ways:
    a) internal versus external
    b) continuity
    c) transferability
    d) committed versus uncommitted
    e) rewarded versus unrewarded
    f) time horizon
    g) group and subsidiary

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1 Introduction

This reading looks at some ways to categorise and hence start to analyse risk in the context of the firm. There is more than one way to do this and while no one way is right, as there are probably merits in considering different ways, we concentrate on the business v financial split as the major approach, while acknowledging the existence of operational risks.

This split is useful for treasurers because it follows the language of the financial sector and the broad approach to credit analysis that we understand. A key problem with categorisation, however, almost derives from its purpose. One of its benefits is to be able to allocate risks to the best qualified manager of those risks, so that financial risks tend to be left to the treasurer. However, risks often interact with each other, or financial risks are part of business risk, and so the treasurer must ensure that he is at the table when business risks are tackled and also point out the business influences on financial risk. Promoting effective discussion can be difficult as the natural inclination of managers is to delegate tasks, especially those that they do not understand, of which financial risks are usually top of the list.

Some risks will be difficult to categorise simply, possibly falling into more than one category. We will call these crossover risks and see some of the difficulties that they can cause.

There are many merits in categorisation but there are also other useful analyses of risks and we look at concepts such as rewarded and unrewarded risks, risks by time horizon, etc.

2 Risk classification (risk taxonomy)

A risk taxonomy is a comprehensive, common and stable set of risk categories that is used within an organisation.

- A comprehensive set of risk categories encourages those involved in risk identification to consider all types of risks that could affect the organisation's objectives.
- A common set of risk categories facilitates the aggregation of risks from across the organisation.
- A common set of risk categories also allows consistent treatment of similar groups of risk, including empowerment of risk taking in some areas and limiting risk taking in other areas.
- A stable set of risk categories facilitates comparative analysis of an organisation's risks over time.

Unidentified risks are inevitably unmanaged, and therefore potentially a threat to the firm. If *similar* risks are treated in *different* ways then unexpected effects can occur. Classifying risks allows the firm to manage them in the same way and with the same team.

Example 1: Different treatment of risks

Confused plc has two divisions, both of which are allowed to make their own risk policies. UK Bread Maker Ltd (UKBM) buys wheat for its production process and always buys wheat at the spot price for immediate delivery. US Bread Maker Inc (USBM) buys wheat for its production process and buys as far forward as possible, thus fixing the price long into the future. Both divisions price their retail product according to trends in the retail market and to compete with other brands and the aim is essentially to move prices higher slightly faster than inflation.

Overall the firm's profitability has become hard to predict or manage because the effect of a changing wheat price is subject to two different and opposing policies.

However, each approach may be right for its own competitive position and market. It may be that Confused plc just has to live with these different approaches.

Given the inter-related nature of risk, any classification is inevitably an imprecise process. There are many choices for classification of risks. Some examples include:

Exhibit 1: John Adams approach (John Adams, 2001)

Directly discernible	These risks are those that we are culturally attuned to managing on a day to day basis. These are often basic risks, which might have quite literally life and death consequences, but which we cannot imagine not existing. We manage them automatically. Example – changing weather, ice and snow risks.
Visible through science	These risks are those that benefit from a significant amount of data which informs managers how they should be controlled. Typically there are professional disciplines that ensure that these risks are managed effectively, and the availability of the appropriate skill base may well determine the appetite of the organisation to engage with these risks. Example – predictions of global warming
Virtual	These risks are those for which there is comparatively little prior personal or institutional knowledge and where the range of outcomes is almost impossible to determine. As a consequence there is frequently little agreement as to how the risk should be managed. Example – consequences of global warming

This approach as seen in Exhibit 1 can be a useful approach to consider when determining the type of response required to monitor or manage a particular risk.

Exhibit 2: Organisational approach

Head office
Marketing
Sales
Production
Purchasing
Finance
Country A
Region B
Product C
Language D

This type of approach can facilitate the allocation of responsibilities to a particular risk but of course it might mean that similar risks are treated differently in one organisation.

Exhibit 3: Source approach (adapted from Treasury Board of Canada Secretariat)

Business processes	Threats and opportunities associated with business process design or implementation.
Capital infrastructure	Threats and opportunities associated with an organisation's capital infrastructure including hard assets (e.g. buildings, vessels, scientific equipment, fleet), but excluding IT.
Communications	Threats and opportunities associated with an organisation's approach and culture of communication, consultation, transparency and information-sharing, both within and outside the organisation.
Conflict of interest	Threats and opportunities associated with perceived or potential conflicts of interest between personal and organisation interests and between e.g. pension fund and organisation.
Financial management	Threats and opportunities associated with the structures and processes of an organisation to ensure sound management of financial resources and its compliance with financial management policies and standards.
Governance and strategic direction	Threats and opportunities associated with an organisation's approach to leadership, decision-making and management capacity.
Human resources management	Threats and opportunities associated with staff/management turnover; employment/work culture; recruitment, retention and staffing processes and practices; succession planning and talent management; and employee development, training and capacity building.
Information management	Threats and opportunities associated with an organisation's capacity and sustainability of information management procedures and practices.

Information technology	Threats and opportunities associated with an organisation's capacity and sustainability of information technology, both the infrastructure and utilisation of technological applications.
Knowledge management	Threats and opportunities associated with an organisation's collection and management of knowledge, including intellectual property, organisational or operational information and records, and scientific data.
Legal	Threats and opportunities associated with an organisation's management of its legislative, advisory and litigation activities, including the development and renewal of, and compliance with, laws, regulations, international treaties / agreements and policies.
Organisational transformation and change management	Threats and opportunities associated with significant structural or behavioural change within an organisation related to operating context, leadership and strategic direction.
Policy development and implementation	Threats and opportunities associated with an organisation's design, implementation and compliance with its own internal policies and procedures.
Privacy / Information stewardship	Threats and opportunities associated with an organisation's protection of intellectual property and personal information.
Program design and delivery	Threats and opportunities associated with an organisation's design and delivery of specific programs, which may impact the organisation's overall objectives.
Project management	Threats and opportunities associated with an organisation's process and practice of developing and managing major projects in support of its overall strategy, as well as risks associated with specific projects that may require ongoing management.
Political	Threats and opportunities associated with the political climate and operating context of an organisation.
Reputational	Threats and opportunities associated with an organisation's reputation and credibility with its partners, stakeholders and the public.
Resource management	Threats and opportunities associated with the availability and level of resources of an organisation to deliver its strategy, as well as the organisation's management of these resources.
Stakeholders and partnerships	Threats and opportunities associated with an organisation's partners and stakeholder demographics, characteristics and activities.
Values and ethics	Threats and opportunities associated with an organisation's culture and capacity to adhere to the spirit and intent of any relevant Ethics Code.

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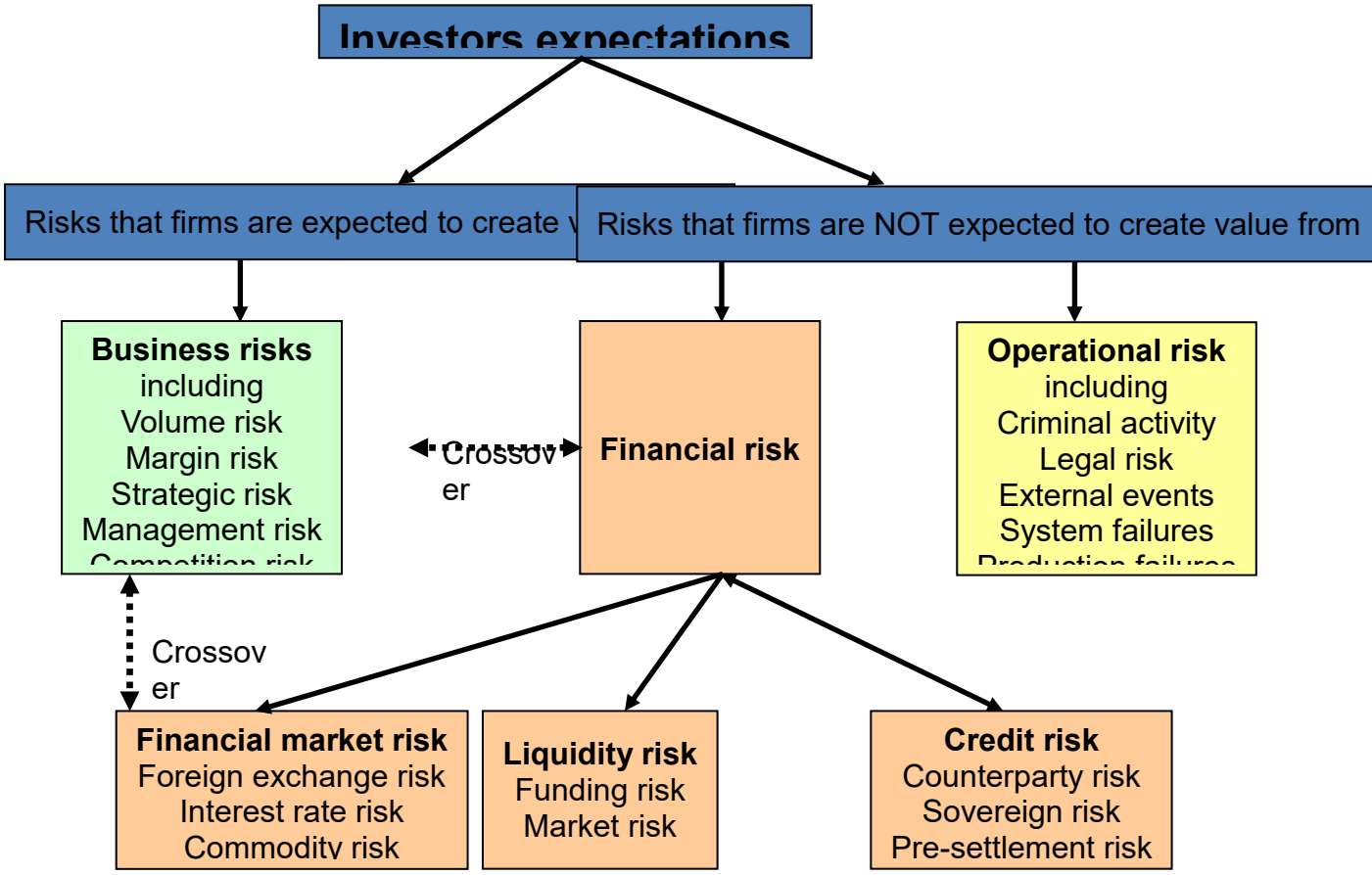
This is just one example of a source approach and is reminiscent of the boiler plate approach seen in modern annual accounts and prospectuses for the issuance of securities. It is adapted from a public service organisation but could easily be adapted to business use by the addition of some production and sales type categories. Such an approach is useful, however, to start conversations, and the 'threats / opportunities' labels encourage consideration of the upside as well as the downside.

The danger of any such taxonomy (and the more detailed it is, probably the greater the danger) is that it promotes a 'tick box' mentality. This means that simple recognition of the risk and disclosing it to investors is sufficient to get management off the hook. This, of course, is not a proper approach.

3 Taxonomy for the treasurer

We follow a classical approach to taxonomy which broadly follows a credit risk analysis of the major risks being business and financial.

Exhibit 4: Corporate risk classification



The taxonomy starts from the point of view that investors require firms to take risks in order to achieve returns above the risk free rate. We expect managers to have ideas, which carry risk, but expect that their skills will transform these ideas into profits and cash flow through a managed acceptance of the inherent risks. This is business risk.

However, investors don't expect the factory to burn down, for example, or for employees to run off with the money, so this sort of risk does not feature in the risks they wish to take. This creates the first split seen in Exhibit 4. We have included operational and financial risks in this category. No investor expects GE or BP or Exxon to run out of money; that risk is not in their calculations. Investors expect management either to avoid these risks outright, or to take some action to reduce the impact on the firm of any occurrence of these risks, either internally or by transferring the risk to others.

These risks include:

- Financial market risk: where movements in prices on markets such as interest rate or foreign exchange or commodity rates can affect the cash flows of the firm or its pension schemes.
- Other financial risks: including how heavily a firm is dependent on borrowed funds to finance its operations, and its ability to cope with events or credit risk where failure of a customer or bank could affect its cash flows.
- Operational risks: risks relating to the production facilities or anything connected with the routine operations of the firm.

However, as we know, splitting risks into categories can make them silos and can remove the effects of interaction between risks. This is certainly the case with the taxonomy adopted here.

This is most obvious with regard to leverage. Leverage is adopted predominantly to increase return on equity and when leverage rises, the risk to investors rises as well. This is entirely expected and the levered firm is expected to create value for shareholders from taking financial risk.

The important thing for the treasurer in these cases, for example within Private Equity or highly leveraged transactions, is to avoid being siloed and make sure that financial risk is not just the treasurer's problem.

The second obvious example of the taxonomy not accurately reflecting reality is where a market rate of one kind or another has a fundamental influence on the business model.

Example 2: Goldmines SA
Goldmines SA operates gold mines in Africa. The mining operations are at fixed costs and so profits and cash flows vary according to the market price of gold as well as other factors such as the quality of ore being extracted and the skills of management.

The gold price is fundamental to the business risk of Goldmines SA.

Again the treasurer must avoid being siloed. Conversations must be about how the financial risks interact with other business risks.

We call these risks 'crossover risks' which is where financial risk is a part of business risk.

4 Business risk

Business risk comprises the risks that investors expect the firm to take and are why they invest in the firm. They expect management to create value from these risks and they are therefore associated with the core competencies of the firm. Examples of business risks include the introduction of new products or the scrapping of old ones, entry into new or withdrawal from old markets, expenditure on research and development, volume of sales, exposure to competition in pricing and products, acquisitions and divestments and so on. The Board should decide which risks will be explicitly accepted by making *strategic business decisions*. The role of the treasurer is to support this process, for example, by analysing proposals or the execution of supporting financial transactions.

Business risks are associated with the financial outcomes from the operations of the firm: for example, has profitability been higher or lower than expected for whatever reason? The risks relate to the success of the firm: is the firm operating as expected and therefore can it service debt and make any repayments due; can it make planned investments and so on.

The treasurer must understand the variability of their firm's performance and must assess risk in that context.

5 Crossover risks

Some risks may be hard to classify as either wholly business risks or wholly non-business (typically financial) risks. These can be termed crossover risks.

For instance, the method of financing chosen by a firm, hopefully with agreement from shareholders, can be either 'aggressive' or 'conservative'. Aggressive financing implies a heavy reliance on debt financing, and an increased risk of insolvency. Conservative financing implies less reliance on debt financing, and a lower risk of insolvency. Equity (and debt) in aggressively financed firms is more risky. Investors therefore seek a higher return on their investment to compensate for this higher risk.

Private equity investors explicitly seek higher equity returns by adopting aggressive financing techniques, i.e. the firm is expected to create shareholder value by accepting this financial risk. This risk may spill over into issues such as maintenance of capital expenditure, management of working capital, and relationships with customers and suppliers, who find themselves dealing with a risky counterparty. This may be construed as forming part of both business and financial risk.

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Example 3: Business and financing risk

Two utility firms share similar profitability records but are financed differently, one entirely by equity and one with large levels of debt. Their performance in year 1 can be summarised as follows:

	Utility A	**Utility B**
Profits	1,000	1,000
Interest	Nil	(600)
Tax at 35%	(350)	(140)
Profits for shareholders	650	260

In the second year, the profits fall by 25% and their performance can now be summarised as follows:

	Utility A	**Utility B**
Profits	750	750
Interest	Nil	(600)
Tax at 35%	(262.5)	(52.5)
Profits for shareholders	487.5	97.5
Fall in profits for shareholders	25%	62.5%

The firm financed by debt is seen to be a lot more risky than the firm financed entirely by equity. Thus, the riskiness of the equity is affected by the financial risk. This can be viewed as both business and financial risk.

The business of some firms is inextricably linked to a particular financial market or raw material price exposure and it is hard to categorise such risks into any one type of risk. Typical examples are firms where the manufacture of a product is in one country but the market for the product is in another or where a raw material is so important to the business that the raw material price affects demand for the product.

Example 4: Business and foreign exchange risks

Rolling Racers plc has a major cost base in GBP, having its manufacturing plants in the UK, but the market for its goods is predominantly in USD. It thus has to sell USD to meet its GBP costs and the foreign exchange exposure is such a fundamental part of the business that foreign exchange risk is a business risk, even though it is in the form of a financial risk. To compound this, the competitors of Rolling Racers have a USD cost base. Management will take action to minimise this risk by *strategic* decisions such as placing new manufacturing plants in locations with USD costs. The response to the risk is strategic and not financial.

Example 5: Business and commodity price risk
Flycheap SA is a low cost airline. Demand for air travel is dependent partly on the cost of tickets, so that increases in ticket price caused by fuel price rises will cause a reduction in sales if the fuel costs are passed on to customers. Thus the fuel price will influence strategic business decisions for Flycheap as there is no long term financial response.

If you are confused about the nature of crossover risks, then you are almost certainly not alone. This area is probably the most 'grey' area in financial risk management. Depending on the exact nature of the firm and its risks, they may be better described in terms of business risk in some firms but as financial risks in others. In Rolling Racers, management protect the short term FX risks to the business; but for long term investors, their holding in RR is at least in part a play on USD – from which they wish to profit.

6 Financial risk

Financial risk is the key area where treasurer's expertise is called for and where most treasury activity takes place. However, firms must address financial risk in the context of the business, and not for its own sake.

Financial risk can be divided into market risk, liquidity risk and credit risk. Although such categorisation is convenient, usage and definitions vary and boundaries between categories are blurred. For example liquidity risk magnifies other risks, such as market risk and credit risk, and cannot be divorced from them.

6.1 Financial market risk

Financial markets risk is the risk that cash flows are affected by movements in financial market prices or rates such as those in the interest rate, foreign exchange or commodities markets. Financial market risk may result in a profit or loss, and is the risk that derivatives were designed to manage.

Foreign exchange risk arises in trading operations when there is a mismatch between selling and buying currencies somewhere in the supply chain. It can occur even if there is no physical exchange of currencies for any one member of that supply chain as the whole business dynamic can be affected by changes in the supply chain remote from the firm. This risk can arise on uncommitted, committed and future transactions. This type of risk falls broadly into our crossover risks and the treasurer cannot expect to help to manage this type of risk without having conversations with operating management.

Foreign exchange risk can also arise around expected cash flows from overseas investments or on the translation of assets, liabilities and profits for accounting purposes. This translation risk, is a risk arising from the 'ownership' of foreign assets, and can also affect credit ratios such as interest cover and net debt / EBITDA, which might be financial covenants in loan agreements.

Interest rate changes can also have favourable or adverse effects, both on the cost of borrowing and on the value of investments such as bonds. This is again, very much an 'ownership' type risk.

Commodity risk refers to the uncertainties of future market values and income, caused by the fluctuation in the prices of commodities. Commodities include grain, metals, fuel (coal, jet fuel, gas), electricity and so on. This type of risk is invariably a risk of trading and also viewed as a crossover risk.

Pension risk comprises many different types of market risk, from interest rates, inflation rates and asset prices (equities, commodities etc) as well as longevity.

6.2 Liquidity risk

Liquidity is access to cash, and liquidity risk revolves around fluctuations in the ability to access cash when it is needed. It is very difficult to find a universally accepted definition of liquidity risk, however, it is commonly accepted that liquidity risk comes in two forms - *funding* liquidity risk and *market* liquidity risk. Funding liquidity risk is defined as a firm's inability to obtain funds to meet cashflow obligations because of issues about itself, whereas market liquidity risk refers to the risk that market transactions will become impossible due to market disruptions or inadequate market depth. The two forms can combine however – for instance if commercial paper or bond markets dry up that is market risk, which will immediately become funding risk if the borrower has insufficient committed bank facilities to act as a stop gap.

Liquidity risk can occur if the liquidity obtained from either the asset or the liability side of the balance sheet is less than expected, income is not converted to cash or liquidity needs are more than anticipated. This suggests that liquidity risk may result from any or all of the other categories of risk. It is important for treasurers to recognise the overlap that exists between and among these different types of risk. It could be argued that all risks eventually cumulate in liquidity risk, and as we continue to point out, risks must be brought together for their management, and risks must not be managed in silos.

6.3 Credit risk

Many organisations extend trade credit, use derivatives and borrow, and credit risk is the risk that a counterparty fails to honour their side of the contract. In addition, the deterioration of a firm's credit quality is also a source of credit risk through the reduced ability to issue debt or borrow. Credit risk is something of an umbrella concept, and has a number of components.

Counterparty risk applies whenever the firm is exposed to non-performance by a counterparty. It therefore includes the credit risk of a customer failing to pay for goods or services. However, the term is more often applied to market counterparties; for instance a foreign currency counterparty failing to deliver the currency purchased after you have paid away your currency sold, or becoming insolvent prior to maturity.

Sovereign risk is important, because it (theoretically) indicates the maximum creditworthiness of a counterparty – no organisation can be more creditworthy than its home country's central

bank (although there are exceptions to this)[1]. Sovereign risk also includes concepts such as expropriation, war and civil unrest.

Pre-settlement risk is the risk that one party becomes insolvent before delivering its side of the contract. For treasurers it is vital that hedging counterparties remain solvent for the duration of the contract – otherwise the hedge evaporates. A similar risk occurs in commercial contracts. Customers may become insolvent before paying for goods, and supplier insolvency may threaten production schedules.

There is usually very little upside opportunity with regard to credit risk.

7 Operational risks

Operational risks, such as failure of production facilities, staff failures, criminal activities, litigation, external events, processing and system failures as well as failures in compliance, fall into the category where investors expect firms to minimise their impact. There is usually no upside with operational risk; things can only go wrong. Operational risks often arise from procedural and internal control related issues, and are often unrewarded risks, i.e. risks which investors expect to be controlled and for which there is no reward for taking. The treasurer can act as an internal consultant for the business, either looking at commercial procedures and promoting best practice, or advising on insurance or sharing of operational risks. In addition, the treasurer has a responsibility to minimise operational risks for their own department and processes.

8 Other ways of viewing risk

It can be useful to view risks along different dimensions so that they can be better categorised, aiding management in how to take a view of the particular risk.

8.1 Internal and external risks

Most risks have either an internal or external source. An ill-conceived acquisition is an example of an internal risk, while a change in legislation is an external one. However, the division of risk into internal processes and external environmental risks is somewhat arbitrary, and strong interdependency is almost inevitable between them.

8.2 Continuity of risks

Risks can also be continuous or event led. Continuous risk is caused by a source that can change continuously, for example foreign exchange rates. Event risk is caused by something specific, for example a fire.

[1] In the Eurozone, the central bank is supra-national and so governments can be less credit-worthy than corporations. As at September 2011, in the US, four corporations have AAA status, stronger than the US government: Microsoft, Exxon Mobil, Johnson & Johnson and Automatic Data Processing. Some banks retain AAA ratings, e.g. BNY Mellon has Aaa from Moody's.

8.3 Transferability of risks

Risk can also be defined as transferable and non-transferable.

Transferable risks are those which can be transferred to someone else, e.g. hedged with risk management products, or passed to an insurer. In this way you can export transferable risks out of your firm (for a price). An example of a transferable risk is a foreign exchange exposure. A firm can eliminate this risk by entering into a foreign exchange transaction with a bank, thus fixing the rate; what was the firm's risk now becomes the bank's risk.

Non-transferable risks are risks which must be borne by your firm. Non-transferable risks might be avoided or accepted and retained or reduced as appropriate. In the case of non-transferable business risks (which by definition are not avoided) it is important that your firm has a distinctive competence in the relevant areas. For example, a pharmaceutical company's non-transferable risks would include the risk that failure to gain approval for use of a new drug means that the research and development costs have been wasted.

8.4 Committed and uncommitted risks

Risks can be further split between those risks which are committed and those which are uncommitted.

Committed risks are those to which your firm is irrevocably committed. These will include firmly negotiated sales and purchase contracts, rental or lease payments, pensions to prior employees and could also include commitment to new products, such as a new car model. They also include committed financial flows such as loan principal and interest payments, dividend payments and tax payments.

Uncommitted risks can be defined as those potential transactions which can be anticipated as part of your firm's business. Your firm might not be committed to such transactions but it is very likely that they will occur. Such risks may include the next renegotiation with regard to raw material purchases (e.g. aircraft fuel), even if some way in the future, the next product launch, such as new car model in 5 to 7 years time. It also includes anticipated future currency inflows from sales, or currency outflows for raw material purchases and anticipated financial flows such as interest payments, dividends and tax payments. One off transactions such as an acquisition could also be considered and future capital expenditure should be included as all firms need to invest for the future.

The identification of such uncommitted risks requires a detailed analysis of your business and an understanding of its future growth and development plans. These risks can be viewed as strategic or economic in that they affect the future profitability and perhaps viability of a firm.

Example 6: Foreign exchange risk

Your firm is based in Australia. It imports substantial quantities of goods from Germany, paying EUR for them. It sells them in Australia for Australian Dollars (AUD). Firm orders are made for these goods 3 months in advance.

The profitability of the firm compared to its competitors and peers will depend partly on the extent to which they also import from Germany and sell in AUD, and partly on your firm's ability

to pass on adverse price fluctuations to customers. Overall sector profitability will be similarly affected.

The risk is continuous; its existence is not dependent on a particular event, so the risk is always present and needs continual management. (If the risk were dependent, then measures should be taken now to minimise the possibility of the event taking place, to give warning of increased probability of it taking place, and to mitigate the effects of it having taken place.)

The risk is transferable; the rolling 3 month forward orders are committed risks (and form an exposure), and the remainder of the relevant planning period is an uncommitted or strategic exposure. As time passes and orders are issued, the uncommitted risk converts into a committed risk.

8.5 Rewarded versus unrewarded risks

This can be a very useful way to analyse risks, as it can indicate whether a particular risk is a legitimate business risk (and therefore consistent with the business strategy) or not. A classic example of a rewarded risk is a business investment decision, such as an acquisition or the purchase of a new machine, launch of a new product and so on. Such an investment will be made because there is a reasonable expectation of a return, and hence ultimately an expectation of an increase in shareholder wealth. Classic examples of unrewarded risk are operational risks such as the risks of systems failure, fire or theft, all of which may be costly to manage, and for which there is no return for taking.

Clearly risk which is unrewarded is best avoided where there is no cost to doing so. However, many unrewarded risks, such as fire and theft, are inevitable in business, and must be managed as cost-effectively as possible. The cost of managing unrewarded risks must be covered by (and thus erodes) the returns earned from rewarded risks.

8.6 Time horizon

The optimum time horizon for risk management varies between markets and firms.

If future cost changes can be passed on to the customer then input price risk may be predominantly of a committed nature, and may only require management over a short time horizon. This may be the case if contracts are negotiated on a one-off basis, or if the customer relationship supports the ability to pass on price changes.

Example 7: Short time horizons for risk

A manufacturer of industrial heat exchangers makes a product that includes a rare metal which is volatile in price. It is market practice to make quotes for the products on the basis of a variable price for that particular component. When a customer makes an order the metal is in turn ordered and the price achieved on that order is incorporated into the sales price of the heat exchanger. The manufacturer has a very short term horizon for input price risk.

By contrast, firms in a highly competitive environment may find input price increases fundamentally erode their business margins. They need to take a much longer perspective on the management of risks such as interest and exchange rate exposure, and manage

strategic exposures in additional to transactional ones. This is particularly important if the firm has a long product manufacture, delivery, sales and payment cycle.

Example 8: Long time horizons for risk
A manufacturer of confectionery manages its pricing of chocolate bars on a long term basis, managing prices at significant levels such as 39 pence or 49 cents to set down its place in the market against its competition. It cannot easily change these except over long periods, perhaps by changing the bar sizes. It therefore carries raw material risk until it can pass on those costs in the long term.

8.7 Group versus subsidiary

Within a group there is also the issue of overall group performance versus the individual performance of a subsidiary. From a group perspective it is sensible to consider only "grouped" exposures, in other words it may be that several subsidiaries buy goods in currency A and other subsidiaries sell goods in currency A. So long as exposures share the same economic effect then it would appear sensible to only consider the net exposure as a risk to the group. But individual subsidiaries monitor their individual exposure to protect their performance and each will be subject to competition, thus possibly threatening this model. Here subsidiary management performance measures may be in conflict with group shareholder value enhancement.

Example 9: Subsidiary v Subsidiary
Moulded Holdings plc has subsidiaries in the US and Europe and each has a niche market in the alternative continent, i.e. Europe exports to the US and the US exports to Europe. A fall in the Euro makes the US exporter less competitive and at the same time makes the European exporter more competitive. Moulded Holdings plc decides to cross subsidise the units and maintains prices for the US exporter. However, competition for the European exporter forces it to reduce prices in turn, making the cross subsidy unworkable.

Example 10: Group v Subsidiary
Worldwide Flogger Inc is a US quoted group with subsidiaries all over the world. It reports in USD and is measured by analysts on that basis, and its management accounts are calculated in USD. Its UK subsidiary trades almost exclusively in GBP and submitted its plans in GBP which were then translated into a USD profit target. The UK subsidiary beat its budget in GBP terms but a falling GBP meant that it failed to meet its budget in USD terms, causing bonuses and future investment to be put at risk.