INTERNATIONAL ASSOCIATION OF FINANCIAL EXECUTIVES INSTITUTES

The Premier Global Society of Financial Executives

IAFEI QUARTERLY

49th Issue – October 2020

Message from the Chairman

Dear IAFEI members,

I present to you the 49th issue of the IAFEI Quarterly.

It has been six months since most jurisdictions implemented community quarantine restrictions and lock downs due to the COVID-19 pandemic. As of today, some countries already opened their borders for travel but strict rules are being put in place.

Although most of us are getting back on our feet, it is still a long shot before we recover. Stimulus programs are being implemented, or being developed in some cases, to make sure that businesses, especially the small ones, will avert the negative effect of this pandemic.

The way we do business has shifted and the way we work has changed. We, as finance executives, must adapt to these changes.

In the coming months, some of our member-institutes will roll-out their respective virtual conferences. I hope that each one of us will support these initiatives.

In IAFEI, because of travel restrictions, we will also hold our annual world congress via online means. Our Technical Committee, headed by Piergiorgio Valente of ANDAF, is currently working on the program. The full details will be provided to you soon.

I would like to thank you for all the support. As I mentioned in my last message, “Together, we can win over this, STRONGER and BETTER.”

For any comments and suggestions, you may share it through the IAFEI Secretariat at mbvinluan.iafei@gmail.com and secretariat.iafei@gmail.com.

Thank you and all the best!

Sincerely,

Eduardo “Ed” V. Francisco
Chairman

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COVID – 19 Drives CFO optimism to all-time low

By **John Graham**, D Richard Mead Jr. Family Professor of Finance, The Fuqua School of Business, Duke University and
Philippe Dupuy, Associate Professor, Accounting, Law and Finance, Grenoble Ecole de Management

IAFEI AND A GROUP OF PARTNERS AMONG WHICH GRENOBLE EM SURVEY CFOs ACROSS THE WORLD. FOR THE SECOND QUARTER 2020, THE SURVEY WAS RUNNING FROM 25st JUNE TO 8th JULY 2020. THIS WRITE-UP INCLUDES COMPARISONS TO RESULTS FROM THE CFO SURVEY CONDUCTED BY DUKE UNIVERSITY AND THE FEDERAL RESERVE BANKS OF RICHMOND AND ATLANTA.

- CFO business optimism jump back from their all-time low in many countries thanks to government plans.
- Yet, optimism is not visible in forecasts

The CFO survey has been conducted for 97 consecutive quarters and spans the globe, making it the world's longest-running and most comprehensive research on senior finance executives.

Business Optimism Index

In Europe, the CFO optimism index jumped to 52 compared to 37 in the previous quarter. From a historical perspective, the confidence shock in Europe is greater than that caused by the collapse of Lehman Brothers in September 2008. But the rebound now observed is also historic in its strength.

The strongest rebound was in Germany, where we observe a confidence level of 65 compared to 39 in the previous quarter. Confidence levels also rebounded strongly in France from the low point reached in April. It now stands at 49.2 compared with 38.0 in the previous quarter on a scale of zero to one hundred. This level of confidence now indicates a stagnation of activity for the coming months rather than an anticipation of a marked recession of the economy. As a sign of the return of a certain level of confidence, the indicator of financial soundness of the company stands at 66 against 41 in the previous quarter on a scale of zero to one hundred. This indicator, supported by the government support Plan, returned in June to the levels observed before the crises. In the United States, the rapid spread of the pandemia is not affecting economic spheres: the business climate here has also rebounded strongly to reach 59.8 against 42 in the previous quarter.

CFO survey: Optimism index

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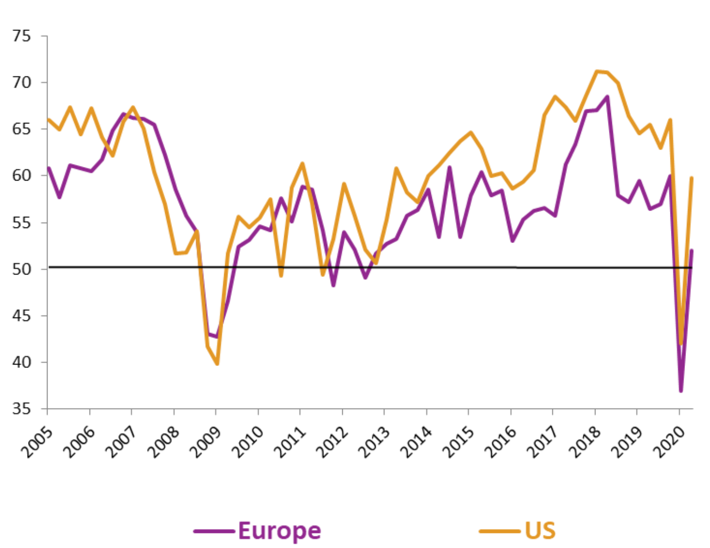
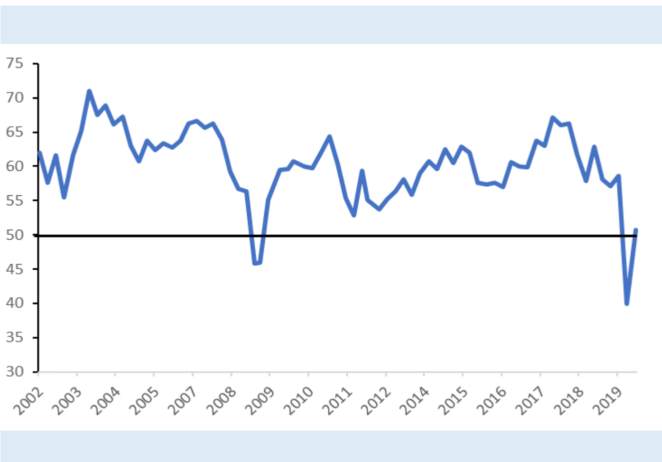


Global Optimism

Finally, at the global level, the confidence shock and rebound are also greater than in 2008-2009. However, they conceal significant disparities between, for example, the United States where confidence is high and Latin America where it is at its lowest. Despite the sometimes high confidence figures, we fear that no economic area will really be able to take over growth for several quarters.

Average global business outlook



GDP weighted Average Global Business Outlook (World Bank GDP constant prices in USD)

Concerns about customers and suppliers

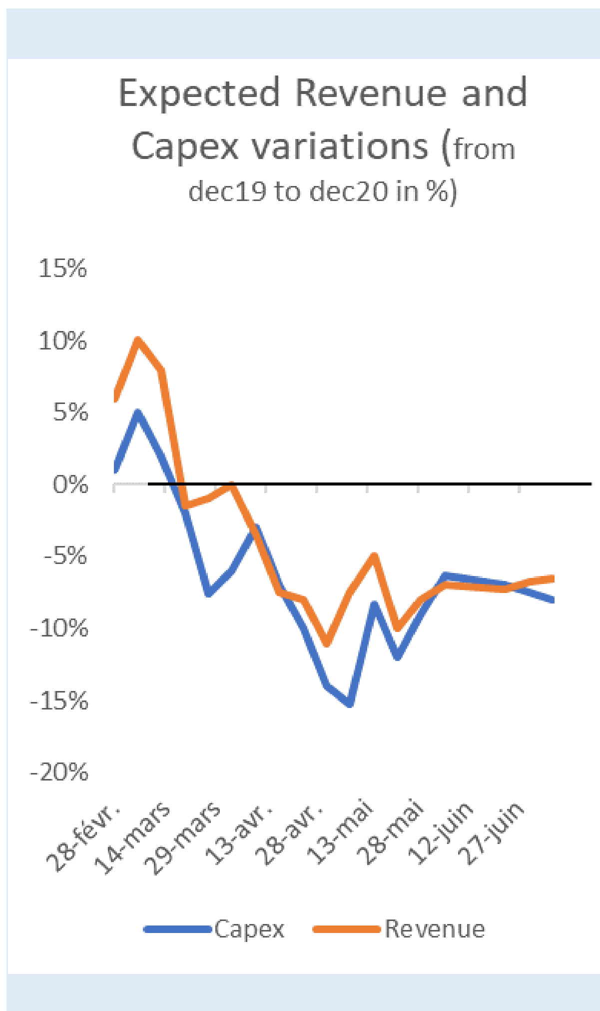
The CFO optimism index points to a rapid resumption of activity, which in the charts would take the form of a V shape. This scenario seems unlikely, however, as the economy is expected to take many months to revive. In particular, companies could wait a long time before starting new major projects with industrial partners whose financial soundness they will want to check first and foremost. The danger is not really the production gap we are currently experiencing, but rather its medium-term impact on business relationships. Banks shown reluctance to lend money to each other following the collapse of Lehman Brothers in 2008. Confidence suddenly disappeared. How could it be different today between firms suffering losses in turnover and cash flows?

When we ask companies, nearly 90% of them tell us that they are still worried today about the financial solidity of their partners (customers and suppliers). Similarly, in the United States, the rebound in confidence indices is accompanied by an increase in recession expectations. Today more than 60% of US financial managers are expecting a recession by the end of 2020 in the US.

The rebound is not visible in the forecasts.

The rebound in confidence indicators is not yet reflected in the forecasts. In France, for example, the outlook for revenue growth for the year 2020 remains on a downward trend at around -7% according to the central scenario. But in a pessimistic scenario, average turnover could fall by 14.5% compared to 2019. As a reminder, companies were still expecting revenues to grow by around 4% at the beginning of March 2020 before the crises. As a result, companies are forecasting a contraction in investment of around 8% and a fall in salaries of around 3% over the year 2020. Finally, companies now expect the number of employees to fall by around 2% over the year. At the global level, the anticipated shock remains greater in certain regions, with sales expected to fall by around 25% in the most pessimistic scenarios, particularly in Latin America.

Weekly change in 12-mont activity expectations



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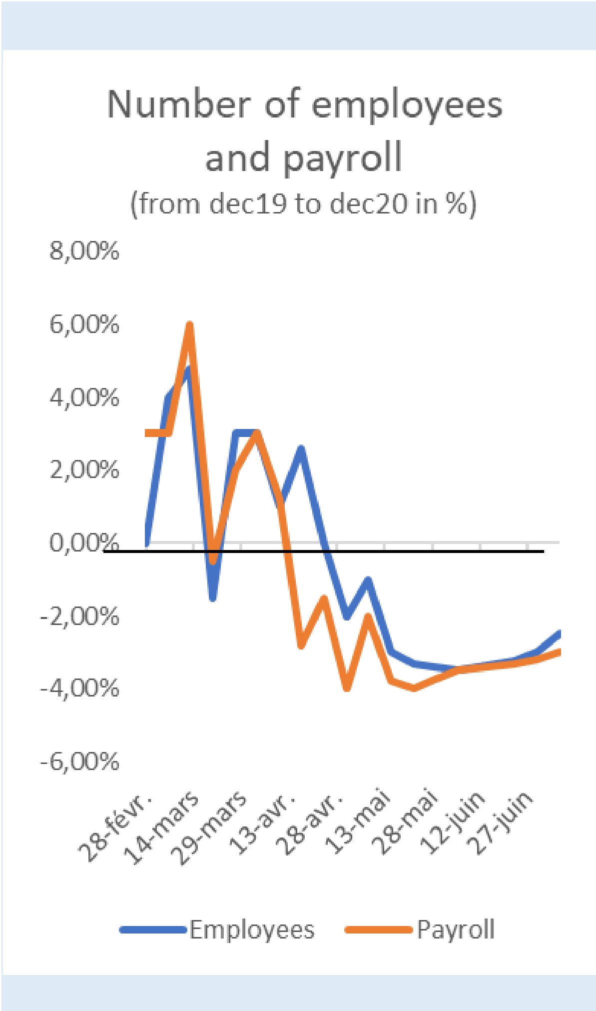
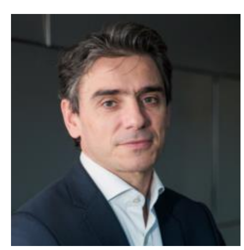


Percentage change in sales, investment, number of employees and payroll expected in 12 months in France

DUKE THE FUQUA SCHOOL OF BUSINESS CFO | DUKE CFO GLOBAL BUSINESS OUTLOOK GRENOBLE ECOLE DE MANAGEMENT

John Graham
D. Richard Mead Jr. Family Professor of Finance, The Fuqua School of Business, Duke University



Philippe Dupuy
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CFE tax advisers europe

OPINION STATEMENT

Opinion Statement TTC 1/2020 on Tax Administration Data Collection Practices & Digitalisation of Tax Administration Processes

Prepared by the CFE Tax Technology Committee
Submitted to the EU Institutions on 30 June 2020

This Opinion Statement discusses the implications of the digitalisation of tax administration processes, in particular with regard to the collection and protection of personal data by tax administrations.

1. Introduction

The CFE Tax Technology Committee was established in January 2018 in response to CFE's recognition of the importance of digitalisation in the administration of taxes and the performance of the tax profession. It was and is accepted that digital transformation is, and will henceforth be, at the heart of all fiscal activity.

The evolutionary processes of digitalisation are well underway. Revenue authorities are pursuing change in differing ways under the collective banner of Making Tax Digital. Unfortunately, there are no uniform standards and taxpayers and their advisers must operate eclectically depending on the authority to which they report.

We believe that the natural forces of globalisation will act as a positive agent in coalescing over time diverse systems and software. We see our role as primary participants with revenue administrations, software companies and tax advisers in driving this evolution since we accept the inevitability of the process. By our proactive, co-operative participation, we see our commitment as working for the continuous Improvement of the process and the retention of the rights and responsibilities of all parties.

2. Background

This, our first Opinion Statement, picks up on the OECD blogpost on Covid 19. The post emphasises that

"Fighting a pandemic while minimising the associated economic costs calls for appropriate digital infrastructure for the design and enforcement of containment measures, as well as to ensure access by the population and enterprises to critical government services."

The post underlines the importance of delivering public services and collecting revenue in achieving progress in the digitalisation process.

We agree with this statement.

CFE welcomes the opportunities for efficiency of tax administration that digitalisation provides.

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We are wholly focused on the role of tax professionals, managing the risks posed to taxpayer and administrator alike by the development of Artificial Intelligence, and exploiting the benefits direct interaction between taxpayer and revenue authority brings.

In particular, the Tax Technology Committee sees the following as vital issues to explore concerning information flow as part of digital transformation

- Maintaining the privacy of taxpayer data
- The storage of data
- Cybersecurity and the protection of personal data.
- Digitalisation development resources - the availability of personnel and capital funding sufficient both for tax administrations and taxpayers.
- Administrative and investigative powers of tax administration.
- Data analytics, especially when subcontracted to the private sector.

3. Privacy Concerns Surrounding the Digitalisation of Tax Administration

The benefits to tax administrations of digitalisation are clear: digitalisation should increase rates of compliance, streamline and improve efficiency of collection and refund processes, and ideally Improve taxpayer satisfaction in the process. It reduces risk of error by humans by reducing the number of instances of interaction. However, data protection rules often apply differently for revenue authorities and taxpayers, raising many issues concerning the privacy of data collection.

Digitalisation of tax processes highlights the importance of personal data protection and privacy as we progress in this digital age. It is now that taxpayer rights need to be transposed and embedded in the digital world.

The Tax Technology Committee is of the view that, in these early days of the Digital Age, we need a clear code governing the development process, the uses to which technology is put and how taxpayer' rights may be preserved in a digital environment.

4. Cross-Border Sharing of Data by Tax Administrations

Concerns arise from the collection of data by tax administrations. They are compounded by automatic and requested data sharing between national tax administrations. This sharing of data threatens the expectation of privacy of a taxpayer, and raises issues concerning whether there should be some limits and oversight on the sharing of data.

The Committee believes there is a need for a digital charter and a protocol for data protection in cross border exchange. Security is an inherent aspect of any digital development worth considering and, currently, most taxpayers make disclosures subject to the expectation of privacy. We accept there are some States where public disclosure of taxpayer revenue occurs, but, even in those countries, non-disclosed information is private, and all taxpayers are aware of the extent of public disclosure.

Allowing access to or requiring disclosure to third party administrations of private and, possibly privileged data without the consent of the owners of the data should only be possible if properly regulated.

We think it is of vital importance that, where there is cross border exchange of information, participating revenue administrations adhere to a multilateral agreement which guarantees levels of data security equal to those applying in the State of data provision.

5. Exchange of Data under the EU Directive of Administrative Cooperation

The tax transparency developments at EU legislative level have been welcomed by CFE. Council Directive EU/2018/822 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation in relation to reportable cross-border arrangements, commonly referred to as “DAC6”, poses significant questions as to security of cross-border data sharing, privacy and proportionality of use of taxpayers' data. The Directive enables Member States to address aggressive tax planning arrangements, to undertake adequate risk assessments and to triage scarce revenue administration resources by carrying out risk-based and targeted tax inspections. Such effective disincentives for engaging into aggressive tax planning and the deterrent effect are supplemented by establishing and EU-wide central directory of taxpayer data to ensure the effectiveness of the Directive.

This policy is explicitly allowed under European Union's General Data Protection Regulation (GDPR): the EU and Member states are allowed to restrict rights and data quality principles in order to safeguard important interests, such as taxation, which is explicitly listed as a justification for such restriction under Article 23 GDPR.

Considering the materially broad scope of reporting under DAC6 the issues of proportionality inevitably arise. The EU needs to ensure that the data is being used for legitimate, necessary and proportionate purposes by preventing 'fishing expeditions' of tax authorities. In reality, these standards and practices will differ among member states, which is a significant concern regarding protection of taxpayers rights.

In order to guarantee the proportionality of the use of taxpayer data, it is settled case-law of the Court of Justice of the European Union (ECJ) that transparency and privacy of data are of equal value in a Union based on rule of law.

The Court has explicitly stated as concerns the interpretation of EU law in this area that processing of personal data must be relevant and proportionate relative to the purpose for which it is stored (Schrems) and that the objective of achieving transparency does not routinely take precedence over the right to protection of personal data, even when important economic interests are at stake (Schecke).1

CFE calls on the European Union and Member states to carefully consider procedural guarantees when implementing the DAC6 Directive as a matter of national tax procedural law, as well as the retention period and robustness of data storage. Such mechanisms will ensure implementation in line with the proportionality principles elaborated by the Court of Justice concerning mass exchange, storage and access to data.

6. Storage of Data and Cybersecurity

The collection of data by tax administrations raises concern for the cybersecurity of the data, what are the best means of securing it, how and where it will be stored, who will have access to it and how confidentiality and privilege, both in respect of cross border exchange of data and encrypted data, can be preserved.

Digital security is a key element in the services provided by a tax professional. Advisers could not work without giving their clients assurance that all details of their financial and fiscal affairs are secure and protected from cyber-attack. Insurance and technological procedures provide additional assurance but, in the event of a breach, there will always be a question of negligent behaviour by the advisor and In Particular, that not sufficient attention has been given to data security. Tax advisers must continuously address, therefore, the issue of security for their clients' data, and have an active and important participating role in the process of digitising tax systems. In doing so, the exposure to cybercrime given by unregulated cross border disclosure of client data by revenue administrations is an area of risk which, whilst outside the advisers control, exposes all other controls for security to a risk of uncontrolled breach.

Blockchain is a shared ledger of transactions between parties in a network, specifically not controlled by a single central authority. We are of the view that a disclosure system fashioned around a blockchain network could go a long way in mitigating this risk to data security and provide an acceptable level of tax certainty.

We do though reiterate that, in order to safeguard the interest of taxpayers, it is important to have oversight regulation.

The Committee join with and support the Forum on Tax Administrations of the OECD and the European Blockchain Partnership, in their aims

''to develop a trusted, secure, and resilient European Blockchain Services Infrastructure (EBSI) meeting the highest standards in terms of privacy, cybersecurity, interoperability and energy efficiency, as well as fully compliant with EU law"

and that

"the ambition of the Partnership is to make this trusted infrastructure accessible to support digital services deployed by public and eventually in the future also private actors.''
The Committee intends that tax advisers will play a full and active role in the development of Blockchain systems and will strive to make those systems fit for purpose, and respectful of taxpayers' rights and needs.

The CFE's Tax Technology Committee publishes this paper not just as a further contribution to the debate around principles of taxation and use of data, but also as a declaration of our intent to support and lead the role of tax professionals in the exciting and ongoing digital transformation we are now experiencing.

PORTUGAL

Artificial Intelligence platforms for finance & accounting

PAFE Interviews:
Pascal Ballayer, Portugal CFOs Association President
Paula Adrião, CEO K1 Digital, Past Managing Director at Accenture

https://k-1-digital.com/

The prestigious Technology Innovators Magazine has just published the list of the Top 50 CEOs worldwide in the field of Artificial Intelligence. Paula, you are part of this list with your company K1 Digital, specialized in Artificial Intelligence and Machine Learning.

How is AI useful for Finance and Administration Executives?

Artificial intelligence (AI) is fuelling innovation across industries and have been making major steps in the fast-paced world of finance and accounting (F&A), helping CFOs and their finance teams optimizing their organizations with new "augmented" capabilities, sharper and timely insights, value data-backed decisions, and reduced business risk and costs.

How can **"Augmented Intelligent" platforms and products** help to address the top Finance and Accounting (F&A) issues and where do they present their greatest benefits?

I will develop 4 issues solved by our AI Platforms:

1. Uncovering patterns to produce predictions (EXFOR): Today, AI can review large data sets, uncover patterns not recognized before with traditional statistic models, predict with great efficiency, supported by new "augmented" intelligence products able to deliver real business results, competitive advantage, and customer satisfaction. With more accurate forecasts, F&A teams can better guide the business and reduce operational and capital expenditures, going far more than traditional financial reporting and adding critical value to the business.

Enabled with these AI assets, they can refocus their efforts on the analysis and alignment of finance functions like reporting, KPIs, goals and ongoing day-to-day executions with the overall business strategy and dedicate more of their time and resources on value added tasks. **AI-powered prescriptive EXFOR engine** can spot patterns and make predictions and recommendations allowing finance teams to address strategic business questions. With AI, CFOs support their companies accelerate and secure continued growth.

2. Semi-structured and unstructured data processing (EASYDATA): Performing document validations and exceptions processing in accounts payable (e.g. invoices): While simple automation can easily take care on documents reading and matching, it will not resolve exceptions. In these cases, you will need an intelligent, multi-dimensional matching platform. **EasyData** Platforms automatically process, collect data and reconcile a large volume of documents and exceptions, including claims (to recover revenues) or through the patterns identification and intelligence, help the team to get more effective in conducting contract negotiations with suppliers and third parties.

3. SMART REPORTING: Transforming the traditional financial close process: Instead of spending hours fighting to get the necessary reporting data at the end of each period, F&A teams can have access to real-time data for decision-making and period closing, getting critical time for analysis and problem-solving activities.

Smart Reporting allows finance teams and CFOs to solve more complex problems and uncover opportunities for their companies.

4. BRING F&A PROCESSES UP TO SPEED to support business growth: K1 Digital evaluated existing finance operations for a set of important players of several industries and looked for the best opportunities for significant improvements supported by technology and Lean methodology. From this analysis, near **20 automated solutions addressing reporting, order-to-cash, record-to-report, and procure-to-pay processes were built**, addressing the needs of high volume of data, rule-based activities and the elimination of manual work usually involved in the set of companies selected. K1 Digital combined optical character recognition and our pattern recognition platform (**EasyData**) to process semi-structured and unstructured data. With these intelligent solutions processing repetitive F&A tasks, organizations will also remove near 100% of errors caused by manual processing. The set of major benefits, are amongst others:

- ✓ A 45% boost in end-to-end productivity
- ✓ Forecast accuracy and savings (+30%)
- ✓ 24/7 F&A service availability with automated helpdesk (intelligent chatbot)
- ✓ Zero document duplication and backlogs clearing
- ✓ Invoice processing TMO reduction (+60%) and accuracy (+45%)
- ✓ Improving payment on-time with important financial benefits
- ✓ Accelerating supplier onboarding time by 80%
- ✓ Getting purchase orders approved 50% faster
- ✓ Improving PO matching (+60%)

Would you say that CFOs will deliver a faster response to emerging business needs and generate valuable foresight to improve decision-making?

For sure, since 2017, K1 Digital invested more than 25.000 hours in R&D to create our proprietary ready-to-use-and-scale Artificial Intelligence Platforms that respond to strategic and operational challenges of organizations operating in the markets with the most weight in the World Economy. Adopting our AI platforms, especially essential in unstable market conditions, combining finance best practices with intelligent technologies – such as cloud-based platforms, artificial intelligence and automation – to make operations more flexible and agile, improving working capital, delivering accurate forecasts, and reducing operating costs. It also helps finance organizations to standardize and automate time-consuming, repetitive manual processes.

Thanks a lot for helping us to digitalize businesses and the financial function. I guess you are also looking for investors to boost your development.

Yes, upgrading infrastructures around digital and innovation is now urgent and critical for companies' continuity which makes our activity field extremely attractive for venture capital companies and, looking ahead, this will also foster our international expansion.

Managing cost in a downturn

by Mark Anderson and Dongning Yu, Haskayne School of Business, University of Calgary

Abstract

This paper studies several factors to consider in cost management in a downturn: Sticky Costs, agency costs, adjustment costs, and Future Expectations.

Keywords

Cost management; Sticky costs; Agency costs; Adjustment costs.

China's economy is "growing at its slowest pace since the financial crisis", according to CNN Business (October 19, 2018). The world's second biggest economy grew 6.5% in the third quarter of 2018, which marked the weakest quarterly growth since the first quarter of 2009 at the height of the global financial crisis and below economists' expectations of 6.6%. Chinese firms are getting concerned about the loss of growth momentum for the first time in the past 40 years.

Managing costs appropriately is critical for businesses to survive an economic or activity downturn. Managers must consider the potential effects of the downturn and make resource adjustment decisions accordingly to minimize the adverse effects and position the business to emerge strongly when conditions improve. The objective of this article is to highlight literature that analyzes cost behaviours across firms and to provide practical advice for managers of businesses in a downturn. This article may provide useful and timely suggestions for Chinese companies and managers to deal with and get prepared for business downturns.

It is important to recognize that costs result from deliberate resource commitment decisions by managers (Cooper and Kaplan 1992). "Managers choose resource levels subject to various constraints, incentives, and biases…", and "cost behaviour patterns arise from managers' decisions to commit resources subject to context-specific constraints" (Banker et al., 2017). Therefore, costs are consequences of decisions that managers make, and cost behaviours are essentially managers' behaviours.

Fixed and Variable costs

The traditional cost behaviour model described in accounting textbooks assumes that costs are either fixed or variable. In the short run, fixed costs are constant and variable costs change in proportion to changes in the related level of total activity or volume of the cost driver. Therefore, according to this model, total costs of a business are a linear function of the cost drivers and the two types of costs. Although Activity-Based Costing (ABC) has refined the traditional cost model by identifying individual activities as the fundamental cost objects, it still assumes a linear relation between activity levels and costs. Importantly, there is no active decision role for managers in the fixed and variable costs model.

The fact is that some cost changes are not strictly proportional to changes in activity because managers make deliberate decisions to adjust or retain resources. If the demand exceeds existing resource supply (resources are strained), then managers will increase the supply of resources to meet the increased demand. If, however, demand falls below the available resource supply (slack resources exist), unused resources will not be removed automatically. Managers must make decisions to adjust the resources accordingly. For example, as sales and production grow, additional employees are hired to handle the additional volume; however, if the volume declines, these employees may not be laid off immediately. Because managers are likely to respond differently to strain than to slack, costs may rise more with increases in activity volume than they fall with decreases in activity.

Sticky costs

This asymmetry in cost behaviour between activity increases and decreases, labeled as "cost stickiness" (Anderson, Banker, and Janakiraman, 2003), has been widely examined in the management accounting literature. Sticky costs occur because managers must make decisions to add or remove resources. When sales increase, resources must be added to accommodate the increase. When sales decrease, slack resources must be managed – they don't go away by themselves

When sales decline, managers need to recognize that slack exists and decide whether and when to remove the slack. Historically, cost management in downturns has been accomplished largely by removing excess resources through layoffs and cutbacks of discretionary spending (e.g. capital expenditures and research and development (R&D) costs). Firms try hard to lower head count and reduce operating costs in order to preserve cash. For instance, more than 100,000 oil patch employees in the Canadian oil and gas industry – roughly one in three – lost their jobs during the oil downturn after oil prices collapsed in mid-2014. The graph in Figure 1 shows the unemployment rate of the Canadian oil and gas industry and of all industries from 2000 to 2017. Similarly, in 2016, China planned to lay off 1.8 million workers in the coal and steel industries, as the country addressed issues stemming from slowing growth and industrial overcapacity – China reported its worst annual growth in 25 years. Around 1.3 million workers in the coal sector and 500,000 from the steel sector were likely to lose their jobs, amounting to about 15% of the total workforce in both of those sectors. Immediate labour cuts save money and may improve operating efficiency during a downturn. But, in spite of the fact that managers are cost conscious, and especially so in a downturn, there are reasons why managers may decide not to remove slack resources when activity drops.

Agency Costs

First, managers' personal incentives may drive cost management decisions. Managers may derive personal benefits from "empire building", which refers to managers' tendencies to grow the size and scope of their personal domains or to maintain unutilized resources with the purpose of deriving personal utility. Managers get pleasure from managing larger and more complex organizations because of the higher status, power, and compensation of such positions.

At the same time, most managers are builders – they are good at growing their organization to a larger size but are not as effective at downsizing or dismantling the organization. While managers reap benefits from growth, downsizing benefits shareholders rather than managers. As a result, managers may add resources quickly when sales go up but keep unneeded resources or decrease excess resources slowly when sales decline (Chen, Lu and Sougiannis, 2012).

Starbucks saw a rapid expansion from 1999 to 2008 : the company grew from approximately 2,500 stores to 16,000 stores. However, opening new stores and launching new products created only superficial growth. Managers focused on building and increasing the size of the company, and this strategy took managers' eyes off of improving same store sales year-on-year. The company was growing too fast and was criticized for failing to preserve its culture and values. In 2007, Starbucks' stock dropped by 42 percent. To keep adding resources without making appropriate adjustments in a downturn does not ultimately benefit shareholders or bolster the company's long-term viability and will likely reduce firm value and brand image through wasteful overspending by managers. Figure 2 shows how Starbucks' brand value changed over time – it hit an all-time low in 2009. As a consequence, Starbucks had to close 600 stores in January 2009 – or 7 percent of its global workforce, to save costs and slow down its expansion during an economic downturn.

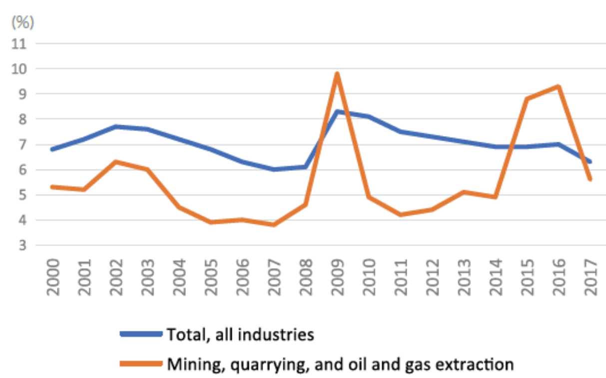

Figure 1: Canada's unemployment rate (2000 – 2017)
Mining, quarrying, and oil and gas extraction vs. All industries
Source: Statistic Canada.

Adjustment costs

Second, terminating employees and closing facilities is hard because managers may feel committed to their workers. Managers create and invest in a corporate environment in which a positive culture is built and promoted because part of effective productivity comes from the morale of employees

Employees at these companies appreciate managers' commitment to them, leading them to be more productive and efficient, resulting in lower costs. Although immediate layoffs may reduce costs quickly, they can make recovery harder, especially if hiring is more difficult than anticipated (Gulati, Nitin, and Wohlgezogen, 2010). Employee morale usually declines after layoffs and critical skills may be lost which can damage operations or customer relations.

Moreover, skilled employees with good training are investments that a company has made that will provide future returns to the company. Such employees will always be hard to find and retain. When there is a downturn, managers have to weigh the costs of keeping such employees against the costs of letting them go and then finding, rehiring, and training replacement workers in the future (i.e., labour adjustment costs). Companies may choose to retain skilled workers with firm-specific

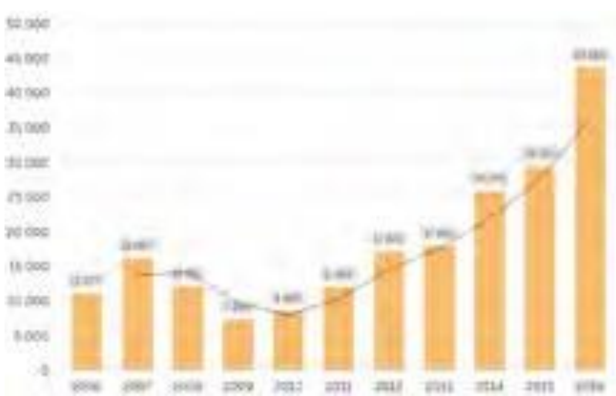

Figure 2: Starbucks brand value (2006 – 2016)
Source: Starbucks brand review. Retrieved from https://www.axiam.co.za/ starbucks-brand-review/.

Knowledge and have them use their slack time for training in order to improve their expertise in specialized areas. The firm may spend money to keep employees now but will gain in the future if the decline in demand is temporary. Therefore, there is an incentive for managers to not lay off employees with specific training and skills, considering the adjustment costs associated with such decisions

In addition, firing costs will affect the levels of slack labour carried by a firm when sales decline. China used to have some of the lowest mandated firing costs in Asia. This situation, combined with low enforcement of regulation and employment protection, introduced an incentive to use "informal" contracts and/ or outsource tasks to the informal sector, even for Large formal firms, giving rise to the phenomenon of informal employment in China. Informal sector workers, more flexible and cheaper, had significantly reduced the firing costs for many companies. As a result, it was not unusual for a firm to lay off more than half of its workforce in a short period of time with minimum costs to the firm. However, China implemented its first *Labour Contract Law* in 2008, which prescribes rules for labour contracting and dismissal of employees, such as the requirement for a formal written labor contract, restrictions on firing after some period of service, compensation to employees when employers terminate the contract before its expiration, and the length of notice required before dismissal. Acting as a protection of labour rights, the law imposes substantial firing costs on employers, thus increasing the adjustment costs.

Thus, adjustment costs include not only out-of-pocket costs such as severance pay, but also organizational costs such as loss of morale among remaining employees and higher turnover because of eroded employee loyalty as well as loss of firm-specific investments in valued employees (Anderson et al., 2003). In addition, the types of activities involved and firm strategy may affect adjustment costs. For instance, resources used in the core activities of a firm typically have larger adjustment costs due to resource scarcity and firms adopting a product differentiation strategy (or prospectors) have greater adjustment costs due to resource specialization. When the adjustment costs are larger, managers are more willing to retain slack resources during a downturn to avoid these costs. The concept of resource adjustment costs provides dynamics to the relation between activity and resources. Managers' decisions to adjust resource levels depend not only on current activity or demand, but also on the anticipated resource adjustment costs.

Southwest Airlines, the world's largest low- cost carrier, has been successful in managing costs by providing a limited selection of services and maintaining a standardized type of aircraft, which reduces resource adjustment costs. On the one hand, network management costs are lower as every Southwest aircraft can fly every Southwest route. On the other hand, labour costs such as pilot and flight crew costs are lower as every Southwest pilot and flight attendant can fly on every Southwest airplane. This results in more flexible operations. Thus, during a downturn, Southwest can easily cut out pieces of its operations without disrupting the rest of its business. Compared with full- service carriers whose strategy depends on combinations of resources to provide high levels of service, Southwest cares more about cost and resource

Flexibility. Figure 3 compares the operating margins of three US-based airlines—Southwest Airlines, Delta Airway, and US airways. US Airways has many different types of aircraft but has the lowest operating margin, while Southwest Airlines has only one type of aircraft and has the highest margins. More flexibility and lower resource adjustment costs give them an important competitive advantage, especially during downturns.

Future expectations

Third, managers' expectations about future demand also affect their cost management decisions. When managers are optimistic about future demand, they are more willing to retain unused resources during a downturn because they anticipate a higher level of future resource requirements when the demand rebounds. Retaining these resources allows them to reduce not only the current adjustment costs but also future adjustment costs that would be incurred when the demand returns. Conversely, when managers are pessimistic about future demand, they are likely to aggressively cut slack resources during a downturn because they anticipate lower future resource requirements and expect these resources to remain unused. Cutting these resources now allows them to reduce current operating costs and avoid future adjustment costs (Banker et al., 2014; Banker and Byzalov, 2014; Banker et al., 2017).

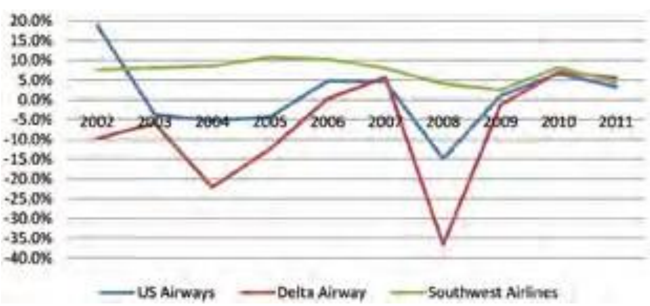

Figure 3: Comparison of operating margin (2002 – 2011)
Source: Is fleet structure the bogeyman for US airways? Retrieved from https://www.gurufocus.com/news/198929/is-fleet-structure-the-bogeyman-for-us-airways.

To summarize, there are three major determinants of cost management decisions: managerial incentives, resource adjustment costs, and mangers' expectations about future demand.

Cost Management strategies in a downturn

There are two main strategies for cost management during a downturn: cutting costs to survive today and making investments to grow tomorrow. Managers must learn to find a balance between the two in order to emerge strongly after the downturn.

Companies that focus simultaneously on increasing operating efficiency, developing new markets, and enlarging their asset bases show the strongest performance, on average, after a recession (Gulati et al., 2010). Cutting costs is necessary to survive a recession, and investment is equally essential to position the company for future success and spur growth.

According to a survey by *McKinsey Quarterly* in 2009, 79 percent of all companies had cut costs in response to the global economic crisis – but only 53 percent of executives thought that doing so had been helpful (Heywood, Layton, and Penttinen, 2009). Firms that cut costs faster and deeper than rivals don't necessarily flourish when times get better (Gulati et al., 2010). Cutting costs is necessary, but managers should start any cost-cutting initiatives by thinking through the processes and outcomes. Managers often find it difficult to sustain cost reductions because reduction programs don't address the true cost drivers or are simply too difficult to maintain (Agrawal, Nottebohm, and West, 2010). During a recession, managers look for easy ways to reduce costs, such as lowering head count, delaying critical investments, or even cutting costs in a way that directly undermines revenue generation, rather than taking a thorough examination of which costs should be cut.

Managers often focus on how much to cut, not on how to cut. Based on *McKinsey Global Survey* results in 2010, more than half of all 300 participating operations and senior executives said that cost-cutting programs undertaken by their companies since the start of the global economic crisis were targeted at labour (Dolan, Murray, and Duffin, 2010). Quick head count reductions save costs immediately, but they often come with consequences. Such cost reduction initiatives lose effectiveness over time because the benefits of such cost cuts are likely to be short-lived, and at times damaging to long-term value creation (Agrawal et al., 2010). Cost cutting should be achieved mainly by improving operating efficiency rather than general layoffs, because of the value of skilled employees and the potential benefits that these employees will bring to the company, especially employees in certain technological areas that are changing rapidly.

Sony announced its layoff of 80,000 employees accompanied by budget cuts in 2009, when Sony decided to lower its investments by $1.1 billion. Sony declared its intentions to lower investments in electronics by 30% of the projected investment rate and to cut down current production by 10%.

This strategy was similar to the approach it took during the 2000 recession, when Sony cut its labour force by 11 percent, reduced its capital expenditures by 23 percent and its R&D expenditures by 12 percent. The cuts helped Sony increase its profit margin from 8 percent in 1999 to 12 percent in 2002, but its growth in sales dropped dramatically from an average of 11 percent in the three years before the recession to 1 percent thereafter (Gulati et al., 2010). This example further illustrates that a strategy that focuses solely on cost cutting may cause severe problems.

To improve operating efficiency, managers should think through how they could restructure the business to save costs permanently and to take advantage of the current and anticipated market trends. They may utilize different programs or initiatives that help managers monitor, measure and report operating performance, and thus come up with ways to improve performance. They may re-examine different aspects of their business models – from how they are organized and structured to how their organizations and structures are operationalized – in order to permanently reduce their operating costs. When demand rebounds, the company will be able to grow faster than its competitors because its costs stay low.

During an industry downturn, companies may seize the opportunity to develop new markets and make investments. They may be able to use the downturn as an opportunity to get closer to customers that may be overlooked by competitors, take advantage of lower asset prices to make strategic investments in value-creating assets such as property, plant and equipment (PP&E) and R&D, especially if they are anticipating a future increase in demand. This saves current and future costs of purchasing resources and allows companies to respond more quickly than their competitors in the future in case of a demand rebound. Mangers may also invest in building the capabilities of the relatively weak functions in the company to improve its performance. In addition to investments in capital assets, managers may also invest in human resources. It is often found that the most valued employees and professionals leave first in difficult times as they can readily find new employment. Therefore, managers could provide more incentives to motivate these employees to stay and improve performance during a downturn.

On the other hand, the signing of the trade agreement "USMCA" between the United States, Canada, and Mexico will cause the exchange of inputs to be concentrated in this region, generating potential for additional openness.

For Mexico it is a great opportunity, however, currently 80% of exports are directed to the USA. If under the same concepts, exports of intermediate-use goods are reviewed to other countries with which Mexico has trade agreements, the export potential may be increased.
What products can be exported, agricultural products and other raw materials. Minerals, precious and industrial metals. Intermediate goods, such as IT services.

We have learned with the pandemic that Mexico with its professionals is capable of exporting knowledge in different areas, and finding in technology the means to transmit it.

There are different models for managing services remotely, such as financial services, consulting, control of computer systems and the creation of new content. E-commerce is an example where it has not been adopted in the local market at the same level as the international one. In other countries, there is already a widespread concept of online shopping and cashless transactions. The use of electronic money in our country and in many others is still a dream of the future.

However, in Mexico, technology is being developed so that the supply chain of different basic products is technified, traceability is obtained and, best of all, transactions are cashless. Various iniciatives, have already caught the attention of authorities in Mexico and Latin America. This model could be exported to a large part of countries where their supply chains are still poorly technical and become more expensive through intermediaries who, in some cases, do not add value.

During the 2008 recession, Home Depot gained by focusing on efficiency, not just by making temporary adjustments. The company renovated its rapid deployment system, which not only boosted sales but also helped it manage distribution and inventory more efficiently, reducing costs. Home Depot also started initiatives to improve the analytics it used to evaluate merchandise and display. By more effectively analyzing the kind and amount of product that goes into stores, the company was able to cut down on inventory close-outs and related discounts. In addition to cost-cutting initiatives, Home Depot made fundamental changes and investments to its business that would continue improving its performance when conditions got better.

Home Depot is a good example of a company that used the recession to boost efficiency in ways that helped the company outperform its competitors.

Planning for a downturn

Downturns are difficult times for managers because they face intense short-term pressures to preserve cash and meet commitments, making it difficult to look beyond the present survival concerns. Understanding the determinants of cost behaviours and formulating cost management strategies in advance help companies and managers navigate through downturns to achieve long- term success.

To avoid the extreme cash flow pressures that lead to excessive cuts in a downturn, managers should manage cash flows and debt appropriately in good times. Maintaining balance sheet flexibility before the downturn has been shown to be a helpful strategy for most post-recession leaders. These leaders had more cash on their balance sheets prior to the recession than their less successful competitors. What's more, the average net debt- to- equity (D/E) ratio prior to the recession, for companies that maintained leadership status after the recession, was only half of their peers (Dobbs, Karakolev and Raj, 2007).

Many companies that emerged strongly after a downturn also focused on maintaining operating flexibility before the downturn by keeping high productivity per employee and reducing costs without damaging the long-term health of the business. As a result, they would be able to quickly refocus and reduce spending during a downturn, without having to lay off many employees which may damage their ability to attract and retain talent in the future.

One way to mitigate the effect of the agency problem is to change a company's performance measurement and incentive system. Chinese home appliance manufacturer Haier successfully implemented an employee reward model to motivate its employees, breaking the gigantic company with 60,000 employees into more than 1,000 business units that act like customer-focused start- ups. "In the past, different departments like research and development, production, and sales worked in a linear relationship. But we have broken that structure, and created many small, nimble work units, which can better respond to consumers' demand," said Ruimin Zhang, Haier's chairman. Haier eliminated a middle management team of more than 12,000. Among other incentives, the company offers financial rewards for employees who pitch winning ideas for new products and services. The payments are determined by the market performance of the products.

In conclusion, here are some points to consider for managing costs in a downturn:

(1) Know what costs are sticky and why. Be wary of agency costs that result from retaining resources that are no longer needed due to personal incentives of managers. Motivate managers and employees by redesigning the reward model and incentive system.

(2) Take time to consider adjustment costs for removing and then reacquiring resources. These adjustment costs have both financial and non-financial dimensions. Make plans for retaining or removing slack resources in relation to future expectations for using those resources.

(3) When sales are strong, prepare for a downturn by building cash reserves and keeping debt ratios low. Balance the need for cash to meet short-term commitments with the possibility of taking advantage of investment opportunities available during the downturn.

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Germany CFO Interview: We must fight for the reputation of the financial centre Germany

The CFO of Siemens, Dr. Ralf Thomas, about the consequences of the Wirecard-scandal for Germany, the lessons from the pandemic and the stock exchange listing of the Siemens Energy Business, from Börsen-Zeitung, Frankfurt am Main, Germany, July 4, 2020, article provided by GEFIU, Association of Chief Financial Officers Germany, the German IAFEI Member Association, translator: Helmut Schnabel. The interview was made by Michael Flämig.

Dr. Thomas, how does it feel, to orchestrate the de-composition of the Siemens Group?

The listing of Siemens Energy, about which the shareholders shall vote coming Tuesday, will change the Group structurally. As to the dimension and the effect, this de-merger is unique in the history of Siemens Group. This induces respect. However, I do not feel myself to be an orchestrator, but a member of the team. Only a large and professional team can accompany such a process with high willingness for action and competency, so that it is successful.

Why Siemens at this point of time has decided for the de-merger?

The energy market has experienced in the last years an unprecedented change: Towards renewable energies, decentralised structures and regionally diversified production and distribution processes. This, one cannot ignore, because all business activities start at the demand of the customers.

Why can this task not be mastered with the present setup?

In the Siemens Group, to the portfolio would not have been given enough possibilities for deployment, because the energy business would always be in competition with other business units, as to capital allocation. With the new setup, the Siemens Energy can respond to the changed market situation in a more agile way and with a technologically successful competitive position. The de-merger is for all stakeholders the right decision.

What does it mean for the shareholders ?

We enlarge the free rooms for decision. Each one can decide oneself, how to allocate one´

s capital. This could contribute to reduce an eventual conglomerate discount. The analyst research opinions in recent weeks are developing in this direction.

Of banks, which participate in the stock exchange listing ?

Investment banks have a clear separation between Research and Investment Banking. It is certainly true, that the list of advisors reads like a Who´s Who of the finance industry. But with the size of our project, we need many Investment Banks, which take care of the different market segments. As well it is true: Transparency about the Siemens Energy Business naturally leads to that the research becomes more qualified.

Why makes Siemens Group in the Annual Meeting not possible to the shareholders to have live-presence at the Web-Annual Shareholder Meeting?

The Annual Shareholder Meetrings of this season followed closely to the context which the federal government of Germany has set. As an example, the questions have to be filed beforehand. Therefore I see the glass more half full than half empty. Still, because of wise regulations of the legislator, Annual Shareholder Meetings can take place at all. Should the experiences made, lead to a continuation of the format of digital Annual Shareholder Meetings, then this will certainly be an important point of discussion whether one will support the Annual Shareholder Meeting–dialogue with technical possibilities.

Which changes do you expect in the set of shareholders of Siemens Energy?

Among the large investors there is a part, which is allowed to invest only in certain indices. These investors are thus forced, to divest the papers over time. Other investors have preferences for industries like for instance industrial automation. The magnitude of reallocations will be significant. It will help to dampen the volatilities by way of that at the beginning we shall give only 55 % in the free float. It would nevertheless be very surprising if less than a third of the free float would flow through the trading process in one way or another.

Which investors do you want to win for Siemens Energy ?

Some investors invest their money as per their ESG criteria in a targeted way in industries which protect the environment, and also especially for these investors Siemens Energy is offering interesting perspectives.

This also shows the very attractive development of Siemens Gamesa.

But they invest directly into Siemens Gamesa.

Some investors do not only want to invest in renewable energies, but they are looking for a combination of fossile energy production with energy distribution. The significance of energy distribution by way of electricity networks is by the way underestimated by many.

Would it be helpful, to have a second anchor investor?

This is not necessary at all, because as per my understanding some existing investors of Siemens AG will hold their package of Siemens Energy shares. Further large anchor investors, which hold like Siemens AG more than 25 %, will certainly at least at the beginning not exist.

Siemens Group will become smaller. Is the Grouop still big enough?

What is small, and what is big ? Tesla is small, Cisco is also small - but both are large as to market capitalisation. Small corporations in the sense of "not yet much sales"can represent since a decade great values, when they have excellent perspectives.

Where does Siemens Group stand?

In the automation technology we already belong to the very big ones. There the challenge is: Remain strong, always maintain contact to the ground, and always look into the rear mirror and into the side mirror - those who come from there or from behind are sometimes the real competitors. We have excellent chances to defend the very strong market position. The barriers for entry are very high, because we have the trust of the customers, and because the combination of products, software and digitalisation is decisive.

How do you evaluate the division Smart Infrastructure?

There, through the combination of existing assets, we have started in a promising way. The development position of the division Digital Industries will certainly be attained in some time only. But we have a very experienced management team, and we are on a good way.

Is the structure, which reminds of a mixed ware shop, really acceptable?

We have brought together portfolio elements from different directions - with a clear focus on infrastructure for buildings, networks, as well as storing technology and electro-mobility. It is now part of the management task, to improve the cost basis and to increase productivity. There we see a chance for consolidation and potential.

Siemens Group at a Glance

Group Numbers,

Sales Billion €	2018	83,0
	2019	86,8
Adapted*) Ebita-Margin, %	2018	11,1
	2019	10,9
Earnings per share*), in €	2018	7,12
	2019	6,41
Net debt*) Billion €, per Sep 30	2018	3,5
	2019	6,4
Rating		
Standard & Poor's	A+ / stable	
Moody's	A1 / stable	

*) Industrial Business

What means the Wirecard scandal for the finance centre Germany ?

We are all shaken. Wirecard is a shock for the financial centre. Then comes the question: How could it happen ? At this point, I restrain myself with caution, because first of all much work for clarification must be done. And I do hope intensely, that all involved parties will show to be extremely responsible. Because when clarification cannot be achieved, then it is very difficult, to do something against that something like this is not going to happen again.

Which consequences will have the scandal ?

We must fight for the reputation of the financial centre Germany. Here, all are asked, nobody is allowed to take it easy. The scandal is certainly also a great practical test for the stock exchange centre. Because, had you asked anybody two months ago, where there Is one of the safest financial markets and centres in the world, where something like this cannot happen, then not few would have pointed at Germany. But I also wish, that all will act with a calm hand and first of all clarify the facts, before a systemic solution will be searched for.

The Supervisor is regarded to be a weak spot.

But this is not yet a solution, but only a description of the problem, if it was this way. One should include the relevant stakeholders into the discussion, before one praises supposedly trivial solutions as a panacea. I am convinced, that this can be achieved. But I am also convinced, that this is not possible just over the weekend.

You are alluding to that the German federal government wants to cancel the contract with the German Financial Reporting Enforcement Panel, DPR – FREP

For insiders it is not at all a surprise, that at the German Financial Reporting Enforcement Panel, DPR – FREP, only one person was mandated with examining Wirecard - the number of employees, as is known, is very limited. And the way of working is also, that on a case by case basis, external experts are mandated.

This Financial Statements Control, organised under private law, could be taken over by the German Federal Financial Supervisory Agency, BaFin.

With a federal eagle on the letter head one looks more powerful. But it is not always alone the supposed power, which leads to the right results. We have seen in other jurisdictions like the USA, that also in one level systems - the supervisory agency SEC is effectively quasi a combination of BaFin and DPR-FREP - there has been no immunisation against large financial statements manipulations.

When one assumes fraud: Which lesson would be thinkable, other than an intensified supervision ?

If it would be like this, and I emphasise that this is an assumption, so again if it would be like this, that criminal actions in the money transfer area would be the cause, then it would certainly be logical to think about, how forensic methods could be included in the day to day work, and this already in the corporations.

Siemens Group has learned it the hard way, how important it is, to have at every point of time full transparency over the own financial cash flows. Our internal audit uses, where it appears necessary, also forensic methods. It would not bother me at all, if my external auditors or the DPR-FREP would also proceed in a forensic way, if it then helps.

The external auditors are on the defensive.

External auditors are to a great extent depending, on what the management is presenting to them. Naturally, they must for instance examine documents but this is not so easy any more in an increasingly digital world. We probably have to get adapted to that the same algorithms, with which a blockchain gets produced, have to be opened in reverse for tracking. These are naturally also big steps from a legal point of view.

Is your relationship to EY, as external auditor of Siemens Group, changing ?

First of all applies to all the presumption of innocence. For me it is not recognisable, that the EY team which has done a good job at Siemens Group since many years, could have deficits of any form.

Siemens Group

Operating Earnings, Industrial Business 2018 / 2019

		million €
Total		8986
of which		
	Siemens Healthineers	2461
	Digital Industrial	2880
	Siemens Gamesa	482
	Gas and Power	679
	Mobility	983
	Smart Infrastructure	1500
Market Capitalisation Siemens Group		
As of August 29, 2020		98,3 Billion €

Source: Corporation, Refinitiv

The objective of a capital return of 15 to 20 % is missed by Siemens Group since years. Are you annoyed by this?

It would be more beautiful, if we would always be within the target range. But to be annoyed in the sense: Have we done everything wrong ? This I do not see. We have always presented in a transparent way, which influence acquisitions would have on the capital return. When we give an outlook for the next business year, we shall name a reasonable target range.

How is the Corona pandemic influencing the doing of business ?

We have to think in a new way, for instance when it comes to planning. The only one forecast, which prioritises a single development, is at least presently over. Instead, we are thinking in scenarios and thus in alternatives of action. With this, flexibility and agility are becoming even more important. It was right and important to invest already years ago in the responsiveness of the corporation. Our businesses are used, to have a plan B. Its being able to be called up at the touch of a button will increasingly play a great role.

What is your main scenario for the development of the business ?

It is just about the characteristic of several scenarios, that one does not have a main scenario. Wishful would be, when thinking in models, naturally a V- shaped recovery. But this nobody is expecting any more. Therefore one must position oneself to something, which is between a less clear V and an U.

For which region does this apply ?

We expect different forms of development in the market segments and in the geographies. Some countries are still more advanced in coping with Covid-19. Economic regions or even nations will develop in more different ways than formerly. In addition, even before Covid-19, some state leaders for quite different reasons are striving for a reinforcement of national value added chains. In addition there is the endeavour for autonomy in certain key industries like for instance the production of vaccines.

So there will be a stronger Localisation?

Also when this deglobalisation is not wishful as a norm: We must support for our customers the fragmentation of so far well functioning value added chains in a way, that their competitive ability nevertheless remains high. When one is distributing three factories which are

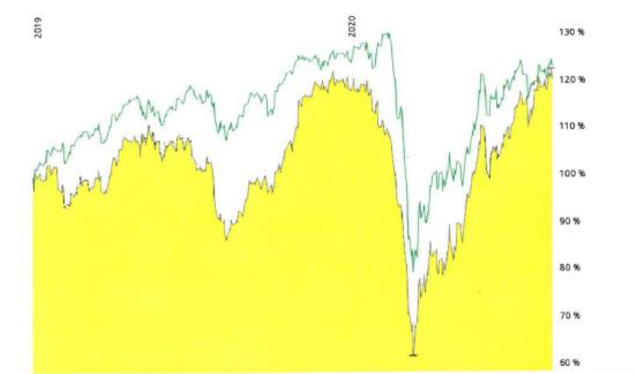
Working for the world market, on to ten countries, then this is at first a cost disadvantage. So therefore one must fetch productivity. We can help the customer, through automisation of production and through digitalisation, to operate all ten factories worldwide intelligently and to lift them to the same performance level.

Siemens AG, 115,66 € Share Price as of August 31, 2020,
German Stock Exchange Xetra

Index Chart, Index-base as of January 2, 2019 = 100

-Yellow Line: Siemens AG Share

-Green Line: Dax German 30 Companies Large Cap Stock Performance Index



How went the past quarter?

I had already said several times, that the third quarter of our business year because of the full effect of the pandemic will be a big challenge for us, as also for most of the other market participants. It is, though, in no case a free fall. We are seeing in the short-cyclical businesses a percentage minus in the business volume of 10 to 20 %

What is the medium term perspective?

We shall certainly not in the year 2021 come back in all businesses and geographies to the level of 2019. On the other hand, and in the times of paradigm changes, we must utilise for us the situation. The best chance to find out, whether one really has a competitive advantage, is when the customer can only distribute a smaller budget. Then the customer will come to those, who can help him most.

This can be a painful moment.

There is this danger. But we have in the industrial business in the cyclical recovery after the Lehman-bancruptcy won market shares. I expect from our proven top team, that this will be achievable again this time.

Does Siemens Group have to cut back capacities at some locations?

It would not be with integrity to say, that one can always master everything without pain. The important question is though: How strongly will costs be lowered?

Because one cannot predict the development, one has to quasi remain in braking standby, and therefore one will meet the optimum only in the most rare cases; this one anyhow knows only afterwards. This letting go from the theoretical optimum is difficult for the perfectionists. This is like at the formula 1 race: The drivers are used, to take the braking point to the maximum, then rain is coming, and already all of them are sitting in the Green. This we also have already gone through, and we try to learn from this.

How?

There are three control levers: You need the best motor - this we construct! You need the best driver. This one we have! And then you also need an experienced team in the box lane, which gives timely advice, in which curve there will eventually be more water than in another one. The combination of the three success factors makes the success. I am convinced: This we shall achieve.

But one does not know, where the water will be. Is one therefore braking more everywhere?

It will be like with the Corona strategy of politics. One will have to let blame oneself afterwards, because the optimum was not attained. On the other hand is true: When one is landing in the Green, how can one be so naïve, to drive full speed into this curve ? Therefore one has to step on the brake a bit earlier. This perhaps does not look so spectacular, but then it means first of all , to survive this round and to somehow continue to be part of the race. Then one raises the eyes in order to see: Where is the target point ? The target point is not the next curve, but the flag, when the race is over after many rounds. Only who then is ahead, does win the race.

About the person.

Financial Statements Pope

mic – Siemens Group has developed into a germ cell for corporation groups. That giants like Siemens Healthineers and now Siemens Energy can now enter into the world without complications, is the merit of Ralf Thomas (59). The CFO is the true father of the Siemens Group de-composition, because without his process knowledge and professional knowledge the de- mergers could have ended badly. Thomas is an extraordinary connoisseur of ramified sets of numbers, he has excellent hold of the Siemens Group financial statements.

Prof. Dr. rer. pol. Thomas, who got a doctorate in the area of financial statements tax law, acted from 2008 to 2013 as CFO of the Siemens segment Industry, and was then selected by chairman Joe Kaeser as Group CFO. Among others he is also acting as Chairman of the Administrative Council of the German Accounting Standards Committee.

Impairment of assets – Impact of COVID-19

***by José García**, partner at Kreston BSG, S.C. México, member of the audit committee at the firm and Member of the Group Puebla of the Mexican Institute of Finance Executives (IMEF). And **by Juan Espinosa**, partner at Kreston BSG, S.C. México, member of the control quality group of Kreston International Ltd. and VP of the National Technical Board of the Mexican Institute of Finance Executives (IMEF).*

The COVID-19 outbreak has developed rapidly and worse than expected in 2020. Measures taken to contain the spread of the virus, including travel bans, quarantines, social distancing, and closures of non-essential services have triggered significant disruptions to businesses worldwide, resulting in an economic slowdown. Global stock markets have also experienced great volatility and a significant weakening. Governments and central banks have responded with monetary and fiscal interventions to stabilize economic conditions and it is unknown what the long-term impact on the business may be but for sure it will not be positive for most of the economic participants. If society and, as a consequence, businesses are exposed to COVID-19 for a longer period of time, it may result in prolonged negative results, pressure on the liquidity overall, jeopardizing of going-concern assumption and finally, in impairment of long-live assets as defined by the International Financial Reporting Standards (IFRS), specifically *IAS 36 Impairment of Assets*. The latter is addressed in this article.

Impairment basics and indicators

IAS 36 requires tangible and intangible assets (with certain defined exceptions) to be carried at no more than their recoverable amount. To this end, the entities should test long-live assets for potential impairment when indicators of impairment exist or, at least, annually for goodwill and intangible assets with indefinite useful lives. The recoverable amount (RA) is defined as the higher of fair value less costs to sell (FV) And Value in use (VU). The basic principle of impairment test is to compare the carrying amount (CA) with the RA; if the latter is lower that the CA, an impairment loss should be recognized in the books.

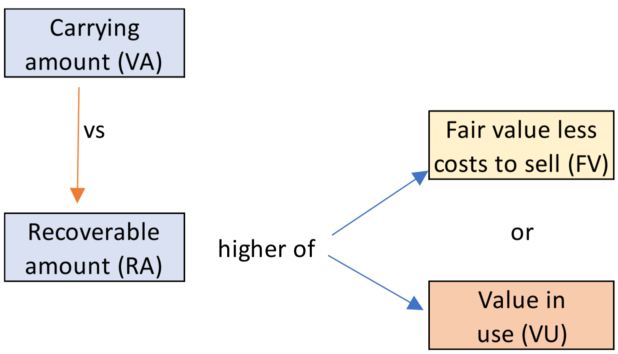
Indicators of impairment

As mentioned, if impairment indicators are observed, it is likely that the CA of the assets may be impaired. Impairment indicators comprises both external and internal information, such as:

- Change in market interest rates;
- significant adverse changes in the technological, market, economic or legal environment in which the entity operates;
- cash flows disruption or observed negative trend;
- material loss of clients and business segments volume;
- loss of purchase acquisition power from the markets in which the entity operates;
- disruption of commercial and production activities, including key suppliers;
- market capitalization being lower than net assets, for public entities;
- internal restructurings;
- evidence of obsolescence;
- physical damage to the asset;
- governmental adverse measures slowing the participation of economic parties.

As it can be observed, most of the aforementioned impairment indicators are nowadays observed and will prevail in the forthcoming months and/or years, depending the market, region, country and of course, industry; therefore, the question if impairment indicators exist is no longer under discussions and the entities should focus in determining the RA of long-live assets in view of the forthcoming 2020 year-end closing.

Recoverable amount



Fair value less costs to sell - Definition

Fair value less costs to sell (FV) is the amount obtainable from the sale of the asset in an arm's length transaction between knowledgeable and willing parties, less the costs of disposal. The best evidence of the FV is a price in a binding sale agreement in an arm's length transaction or the market price of the asset less the costs of disposal. If a market price is not available, FV can be determined using a discounted cash flow approach (DCF), always taking into consideration future events, market conditions, risks related thereto and other pertaining data.

Value in use - Principal premises for its determination

Value in use represents the present value of the future expected cash flows to be generated from an asset or a Cash generating unit (CGU) and comprises two basic elements:

a) **Cash flow projections** - estimation of the future cash flows that the entity expects from the normal utilization of the long-live assets and expectations on possible variations in the amount or timing of those future cash flows and Should considerer the following, but not limited to:

i. Based on reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the remaining useful life of the asset;

ii. based on the most recent financial budgets/forecasts approved by management — without including cash inflows or outflows from future restructurings to which the entity is not yet committed to;

iii. not consider borrowing costs, income tax receipts or payments and capital expenditures that improve or enhance the asset's performance;

iv. include overheads directly attributed or that can be allocated on a reasonable and consistent basis to the assets;

v. consider the amount of transaction costs if disposal is expected at the end of the asset's useful life; and

vi. for periods beyond the periods covered by the most recent budgets/forecasts, the projections should be based on extrapolations using a steady or declining growth rate unless an increasing rate can be justified

Some examples of key assumptions used by the companies in determining the cash flow projection are summarized as follows:

Key Assumption	Basis for Determining Values Assigned to Key Assumption
Budgeted revenue growth	Revenue growth rate achieved in the most recent fiscal year, adjusted for an expected increase in entity's revenues; expected growth in the volume of clients based on a conservative approach. Therefore, values assigned reflect past experience and expectations regarding an increase in the addressable clients / markets.
Budgeted operating margin	Operating margin budgeted for a given budget period equals the operating margin achieved in the most recent fiscal year, increased by expected efficiency gains on a conservative approach. Values assigned reflect past experience, except for efficiency gains.

Discount rates	Estimated cash flow projections are discounted to present value using discount pre-tax rates based on the weighted-average cost of capital (WACC) approach.
Terminal growth rate	Estimated cash flow projections for periods beyond the business plan are extrapolated using terminal growth rates of the entity, which do not exceed the long-term average growth rates for the industry in which it operates.

Discount rate (time value of money) – represented by

a. A pre-tax discount rate reflecting current market assessments of the time value of money and risks specific to the asset and entity;
b. the price for bearing the uncertainty inherent in the asset which can be reflected in either the cash flow estimation or the discount rate;
c. estimation of WACC; and
d. other factors, such as non-liquidity that market participants would reflect in pricing the future cash flows the entity expects to obtain from the related asset.

The determination of an appropriate discount rate reflecting current market assessments, risks of the entity and other external factors, turns out to be very complex and will require undoubtedly judgment and assumptions from top executive and financial management. Furthermore, the professional assistance from valuation experts should not be undervalued.

Impairment loss – recognition

As already mentioned, an impairment loss should be recognized in the financial statements to the extent the CA of the asset exceeds its RA. If assets are kept at historical cost, impairment losses are recognized as an expense immediately in integral result of the year. If the impaired asset is maintained at revalued cost, the impairment loss will decrease the revaluation and recognized directly in other comprehensive income, reducing the related revaluation surplus. If the impairment loss exceeds the revaluation surplus, the remaining loss is charged to the integral result of the year.

If external factors and circumstances indicate or provide significant input on positive changes in the asset's value and market conditions, as compared to those in place when the impairment loss was recognized, the impairment loss previously recognized can be reversed. If this is the case, the adjusted CA of the asset cannot exceed the CA of the asset that would have been determined had no impairment loss been previously recognized. Lastly but not least, the asset's remaining useful life, the depreciation method or the residual value needs to be reviewed and adjusted if there is an indication that impairment may no longer exist, even if no impairment loss is reversed.

Conclusions

COVID-19 effects on worldwide economy will prevail, at least, in the medium-term, especially in developing countries/economies. As the impairment of assets is one of the core management estimation and judgement processes within the financial reporting, which analysis, determination and assessing are with no doubt complex and time consuming, it is absolutely necessary to establish deadlines for planning, inventory and allocation of resources, whether internal or external as for a proper and timely determination of business planning, forecasting, discount rates and related key elements and premises to obtain a reasonable VU.

Likewise, it is important to mention that the top level of entities' management should at any time be involved to provide experience, data input, consideration of risks, opinions, different point of views and of course, a consented conclusion if an impairment loss should be accounted for and properly disclosed to the final user of the financial statements.

References:

- *International Accounting Standards Board (2019). International Accounting Standard 36, Impairment of Assets (IFRS.org).*

Research on the application of "Dazhi Yiyun" Technology in Chinese Enterprises

Questionnaire Analysis Based on Financial Staff of Chinese Enterprises*

By Kouging Li, Tie Qiu and Jian Zhao, *Shanghai National Accounting Institute*

Abstract

The technology of "Dazhi Yiyun" not only profoundly affects people's lives, but also promotes a new round of industrial transformation. Through the analysis of the questionnaires of Chinese corporate financial personnel, this article finds that companies have gaps in the understanding and application of the technology of "Dazhi Yiyun". We hope to find out the related obstacles that enterprises have in the application of "Dazhi Yiyun" through the research and analysis of the questionnaire, and provide corresponding suggestions on how to carry out the application of technology and the transformation of the work of financial personnel.

Keyword
Dazhi Yiyun; Technology; Application

Introduction

"Dazhi Yiyun" refers to the integration of big data, cloud computing, Internet of Things and other information technologies, plus artificial intelligence and mobile Internet as supplement, to form a new era of interconnection of information technology industry. In the times of "Dazhi Yiyun", the use of the Internet has continuously expanded into new areas, bringing us technical transparency and progress in management. Topics such as "Dazhi Yiyun" industrial development, traditional industrial transformation and upgrading, and technological innovation have also emerged. The development of information technology is entering a brand-new stage, which will have a huge impact on the financial workflow, organization, information system and the overall operation mode of finance in the future, and may completely overturn the existing mode of finance.

Alvin Toffler, a well- known American futurist and the author of The Third Wave, said in an interview that the "Fourth Wave" will come in the foreseeable future. The wave of new technology revolutions has swept across all industries, and the accounting industry is inevitably impacted. There are countless forums, conferences, and papers discussing the impact of these technologies on financial personnel. But on **the** other hand, a survey by the UK200 Group Association shows that, 65% of SMEs do not use software to manage their accounts. A study by Deloitte in Australia shows that less than 10% of SMEs in the country have fully utilized digital tools and technologies[2]. What about the actual application of technologies such as "Dazhi Yiyun" in Chinese enterprises? What role did it play in the operation and management of enterprises, and what measures the enterprises take in the "Dazhi Yiyun" era? Have they made sufficient preparations? How familiar are the financial personnel in these enterprises with these technologies? How will these technologies affect financial jobs in the short and long term? The Accounting Information Survey Center of Shanghai National Accounting Institute and the Global Association of Chartered Management Accountants (CGMA) jointly conducted a special survey and research, hoping to find answers to these questions. Analysis and research on these issues can not only provide certain guidance for enterprises to carry out technology applications in the future, but also provide suggestions for financial personnel's job transformation.

The survey process and the background of the people who filled out the questionnaire

1. Surveyprocess

This survey was conducted by a special team composed of the Accounting Information Survey

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Center of Shanghai National Accounting Institute, and was conducted using a questionnaire survey. In order to ensure that the questionnaire design is more in line with the actual situation of the company, the team members consulted experts in related fields and corporate financial leaders through communication methods during the design of the questionnaire to make the questionnaire design scientific and reasonable.

The questionnaire was published on the platform of the Accounting Information Survey Center of Shanghai National Accounting Institute and CGMA official WeChat. The survey time began from May 17 to June 27, 2018, and a total of 517 questionnaires were recovered. To ensure the validity of the survey data, we screened the sample data, excluding 14 invalid questionnaires, and finally screened out 503 valid questionnaires.

2. Background of people who filled in the questionnaire

Enterprise ownership structure

The nature of enterprise ownership in the questionnaire includes wholly state- owned or state-owned holding enterprises, private or collective enterprises, European and American foreign-invested enterprises, other foreign-invested enterprises, and other kinds of enterprises. Through the analysis of the questionnaire, we see that the proportion of the ownership nature of the respondents' work enterprises is relatively concentrated, of which 40.16% are solely state-owned or state- owned holding enterprises, 40.56% are private or collective enterprises, and foreign-funded enterprises (including European and American foreign-invested enterprises and other foreign- invested enterprises) accounted for only 7.16%, and other enterprises accounted for 12.12%.

Whether the enterprise is a high-tech enterprise

In order to understand whether the application of technology in traditional enterprises and high-tech enterprises is different, the questionnaire specifically divides traditional enterprises and high- tech enterprises. Among them, traditional enterprises account for 49.11% and high-tech enterprises account for 50.89%.

The scale of enterprises' revenue

The scale of business revenue in the questionnaire is divided into five grades, among Which, 50.84% of the enterprises have a revenue of 100 million US dollars or less, 25.14% of the enterprises have a revenue of more than 100 million US dollars but less than 1 billion US dollars, 11.17% of the enterprises have a revenue of more than 1 billion US dollars but less than 5 billion US dollars, 3.07% of the enterprises have a revenue of more than 5 billion US dollars but less than 10 billion US dollars, and 9.78% of the enterprises have a revenue of more than 10 billion US dollars.

Position level

In order to understand the understanding of technology of different responsibilities and different levels of financial personnel in the enterprise, the questionnaire divides the level of the person filling out the questionnaire into two categories, four levels, of which the first category is management personnel, including senior, middle and basic levels management staff, another category is ordinary staff. Senior management staff accounts for 17.1%, middle management staff accounts for 34.59%, basic management staff accounts for 19.48%, and ordinary staff accounts for 28.83%. From the perspective of the distribution of job levels, the ratio of the middle to high-level and ordinary level is relatively balanced.

Work content

In order to understand the views of financial personnel working in different financial positions on technology, in the design of the questionnaire, the content of the work performed by financial personnel is specially and appropriately divided. Specifically, it includes comprehensive management, accounting, financial analysis, auditing, taxation, investment and financing, asset evaluation, accounting teachers and other financial work. Among them, comprehensive management accounted for 20.28%, accounting

Survey

Table 1: Whether "Dazhi Yiyun" technology is applied

	Already applied	Intended to apply and prepared	Intend to apply but don't understand	Not applied and not intended to apply
Big Data	18.49%	24.45%	37.18%	19.88%
Artificial Intelligence	8.15%	20.87%	39.36%	31.61%
Mobile Internet	50.50%	17.89%	21.07%	10.54%
Cloud Computing	16.70%	23.46%	38.37%	21.47%

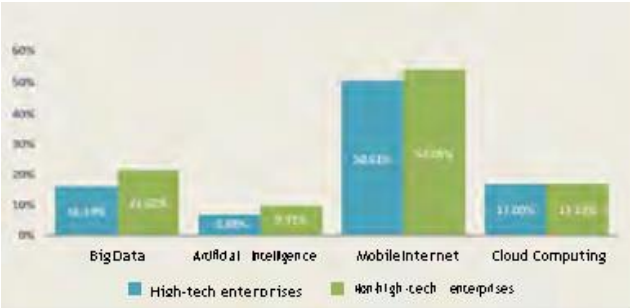

Figure 1: Technology application of high-tech enterprises and non-high-tech enterprises

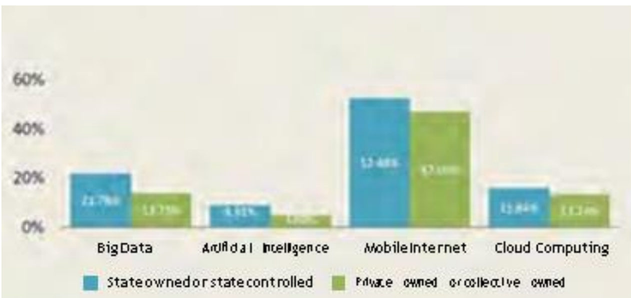

Figure 2: Technology application of different ownership enterprises

Figure 2: Fluctuation of oil prices and the performance of the oil industry

Source: Bertrand M. and Mullainathan S., Are CEOS Rewarded for Luck? The Ones without Principals Are, *The Quarterly Journal of Economics*, 2001, 116(3): 901-932.

accounted for 35.79%, financial analysis accounted for 13.72%, audit accounted for13.52%, tax accounted for 5.96%, investment and financing accounted for 3.98%, asset evaluation accounted for 0.98% and others accounted for 5.77%.

Investigation findings and enlightenment

1. The application of technology in enterprises is not as popular as expected

(1) The application of "Dazhi Yiyun" technology by enterprises is not as popular as imagined, and the difference in application degree between different technologies is also quite large. From the survey results, the most familiar technology to public, "mobile Internet" applications have the highest degree Of application, the "big data" and "cloud computing" technology applications have little difference, and the "artificial intelligence" technology has the lowest application level(see Table 1).

(2) The application of various technologies in high-tech enterprises is higher than that of traditional enterprises. The application of high- tech enterprises in the field of big data and artificial intelligence is significantly higher than that of traditional enterprises, respectively 34% and 44% higher, while the application in the field of mobile Internet and cloud computing is higher than that of traditional enterprises, but the difference is not significant (see Figure 1).

(3) The ownership of the enterprise will also affect the degree of technology application. Wholly state-owned and state-owned enterprises have a high degree of application of the "Dazhi Yiyun" technology, and private or collective enterprises have the least level of application. However, the difference between mobile Internet and cloud computing field is relatively small (see Figure 2).

The scale of the company's revenue affects the company's application of technology. Before the survey, we expected that the larger the scale of income, the higher the degree of technology application, but the survey results show that enterprises with a business income of US $ 5-9.9 billion, have the highest degree of application of "mobile Internet", "big data" and "cloud computing" technology, while "artificial intelligence" technology has the highest degree of application in enterprises with a revenue of more than 10 billion US dollars. "Artificial intelligence" is the technology with the biggest difference in opinion of voters with different income scales on technology application. The coefficient of variation is 0.522. The technology with the smallest difference in opinion is "mobile Internet", and the coefficient of variation is 0.230 (see Figure 3).

2. *The application of technology does not mean familiarity withtechnology*

Although the "Dazhi Yiyun" technologies are generally not widely used in enterprises, the familiarity of these technologies among those who have applied these technologies should be relatively high. The survey data also verified this. The familiarity of the person who filled out the questionnaire with the technology is roughly synchronized with whether the company applies this technology. However, on the other hand, we also found that the application does not surely lead to understanding. Among the enterprises that applied the technology, a certain percentage of the respondents of the questionnaire said that they were “completely ignorant” of the technology.

(1) Familiarity with “Dazhi Yiyun” technology.

The respondents of the questionnaire are not familiar with the technologies of “Dazhi Yiyun”. Even the most familiar “Mobile Internet Technology” has a familiarity index of only 3.25, which is just over “3-know” and far from Go to “4-understand”. The familiarity.

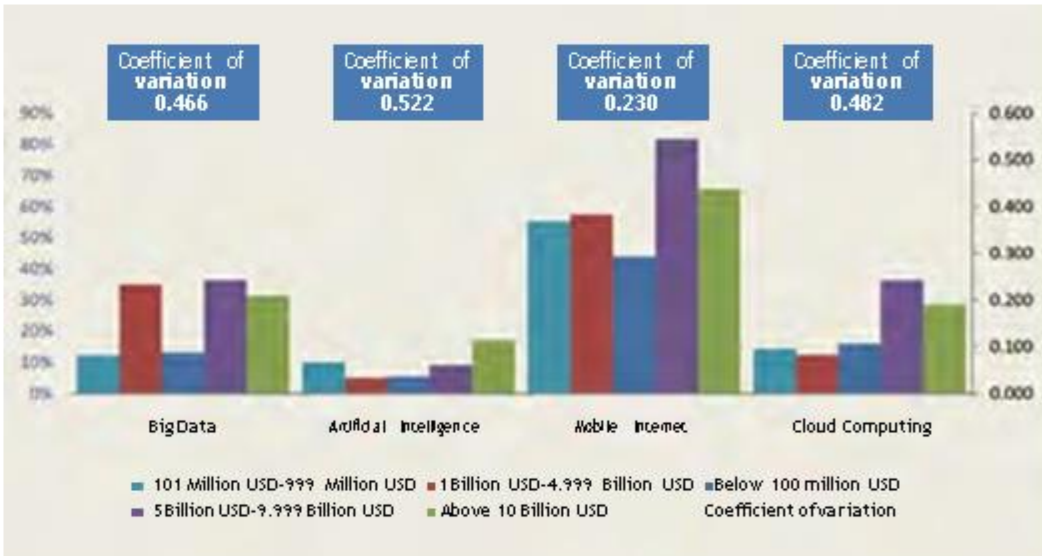

Figure 3: Technology application of enterprises with different income scales
Note: Coefficient of variation C·V = (standard deviation SD / mean) × 100%]

Survey

Table 2: Familiarity with "Dazhi Yiyun" technology

	1-don't know at all	2-know little	3-know	4-Understand	5-Understand very well	Index
Big Data	5.17%	26.04%	42.15%	23.86%	2.78%	2.93%
Artificial Intelligence	4.97%	29.42%	44.53%	19.09%	1.99%	2.84%
Mobile Internet	2.58%	16.30%	39.96%	35.79%	5.37%	3.25%
Cloud Computing	6.56%	27.24%	45.33%	18.49%	2.39%	2.83%

Note: Calculation method of familiarity index: score based on the survey of familiarity 5-Understand very well 4-understand 3-Know 2-Know little 1-Don't know at all Familiarity Index = Understand very well percentag e × 5 +understand percentage × 4 +Know percentage × 3 + Know little percentage × 2 + Don't know at all percentage × 1.

Index of other technologies can not reach “3-know”. But even this data can't represent the true cognition of the questionaire to various technologies. We found that some questionaire would regard simple office intelligence, “financial robot”, “face recognition”, “image recognition”, customer service system, process automation, etc. as the category of artificial intelligence, which is actually a misunderstanding of the concept of “artificial intelligence” . There is a similar perception of other technologies (see Table 2).

The people who filled out the questionnaire were the most familiar with mobile Internet, followed by big data. For artificial intelligence and cloud computing, only about 21% of the voters indicated that they understood or knew very well.

Employees not being recognized and inefficient employees not being eliminated. Year after year, the productivity and quality of employees and the overall strength of the enterprise will decline.

To avoid the above problems, we suggest the following when designing an appraisal system of an absolute performance measurement: Effective objective metrics and clearly defined rules and procedures of appraisal are the key. The main set of KPIs must be objective 'hard' measures as this could significantly remove the room for managers' manipulation. 'Quantify' all soft measures (qualitative) by providing detailed definition of the measures and to ensure the true objectivity of the rating process. Finally, ensure the transparency of the appraisal process and thus minimize the personal cost of the supervisors.

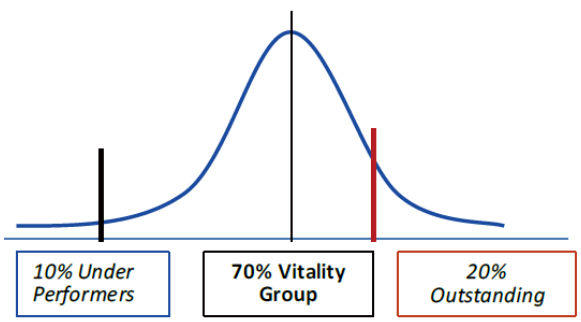

Figure 5: GE's vitality curve

Relative Performance Evaluation (RPE) and Forced Rating/Ranking

In order to cope with the ineffective attrition of underperform employees caused bythe uniform rating of an absolute evaluation, firms have over the past decade adopted relative performance evaluation (RPE) systems or have more aggressively used the forced ranking and the 'ranked-and-fired' for attrition.

Forced rating/ranking requires department supervisors to group employees' performance into several levels based on predetermined performance indicators (performance categories usually designed as 3 to 5 levels). The proportion of employees at different performance levels is set in advance. When an employees is rated at the lowest level of performance, he/she is often put on probation. Employees who fail to significantly improve their performance within a certain period of time (say six months) will be dismissed. Therefore forced rating/ranking is called Ranked-and-Fired system. The best-known example is GE's 'vitality curve' (see Figure 5).

GE's forced rating/ranking system requires managers to identify the bottom 10% of employees. As expected, managers often have included the weak, departing or even dead employees into the bottom 10%.

Many well-known companies in China have implemented the RPE system for years. As an example, Haier Group puts its employees into three categories based on their performance: Excellent, Qualified and Probationary. Employees' work performance will be evaluated on a regular basis, and individuals who failed to meet the performance standards will be included in the Probationary group. These individuals are then encouraged to re-enter into Haier's internal labor market for additional training and later compete for the new internally available positions. In 2009, six senior vice presidents of Haier group were fired for not meeting their performance targets set at the beginning of the year. In addition, Huawei's ranked-and-fired system is another model of using relative performance evaluation (RPE). Of course, there are also many unsuccessful applications among well-known firms. Under the reign of Steve Ballmer, Microsoft developed a 'Stack Ranking' system for its performance management. It requires that each business unit must rank employees into different performance groups. The performance management system, in which employees beat their peers to get promotions, bonuses or keep their jobs, reduced Microsoft's ability to innovate and grow, and even to the extent of being a contributor to its 'lost decade.' Our empirical study found that more than 35% of enterprises in the United States use relative performance (see Table 1).

Panel B. Use of RPE and length of performance period

	N	Use of RPE: Yes	No
2006–08	435	162 (37.2%)	273 (62.8%)
2009–13	1007	422 (41.9%)	585 (58.1%)
2006–13	1442	584 (40.5%)	858 (59.5%)

Source: Contractual features of CEO performance-vested equity compensation, by Zhan Gao, Yuhchang Hwang, Wan-Ting Wu. *Journal of Contemporary Accounting & Economics*, 2017(13): 282–303.

Potential Problems with Forced Rating/Ranking

Let's take a look at the potential problems of the forced rating/ranking system and the reason.

(2) Familiarity with "Dazhi Yiyun" in applied enterprises.

The familiarity of the voters with the technology is roughly synchronized with whether the enterprise applies the technology, but among the enterprises that applied the technology, a certain percentage of voters still said that they were "completely ignorant" of the technology, especially for the "artificial intelligence" technology. 7.32% of the voters who indicated that their company has implemented the "artificial intelligence" technology and said that they "completely do not understand" (see Table 3, Figure 4).

(3) The job level is positively related to the familiarity with technology.

As can be seen from Figure 5, the higher the level of the position, the higher the level of familiarity with the technology. The level of the voter's position is positively related to his familiarity with the "Dazhi Yiyun" technology, and each technology shows the same positive Related trends. Voters of different positions at different levels of familiarity with the "Dazhi Yiyun" technology have the biggest difference in the technology of "big data" with a coefficient of variation of 0.094. The smallest difference in opinion is the "mobile Internet" technology with a coefficient of variation of 0.036.

(4) Different ownership companies have different levels of familiarity with technology.

Voters of state-owned or state-controlled enterprises are more familiar with various technologies than private or collective enterprises. Voters of different ownership enterprises have the biggest difference in the degree of familiarity with "Dazhi Yiyun" technology, and the coefficient of variation is 0.067. The smallest difference in opinion is the "mobile Internet" technology, and the coefficient of variation is 0.043 (see Figure 6).

(5) High-tech are more familiar with various technologies than traditional enterprises.

(Voters of high-tech enterprises are more familiar with various technologies than those of traditional enterprises. Voters of high-tech enterprises and traditional enterprises have the most different opinions on the familiarity of "Dazhi Yiyun" technology, the coefficient of variation is 0.064; The smallest difference in opinion is the "mobile Internet" technology, and the coefficient of variation is 0.041 (see Figure 7).

3. Have a clear awareness of the impact of technology

For information technology topics such as "big data, Artificial intelligence, mobile internet, cloud computing", as financial personnel, they will inevitably be "bombarded" by various forums, conferences, papers and other information Even if they don't understand, they will inevitably be exposed to these topics more or less. Most financial personnel are conscious of the impact of aggressive technology on their jobs. The more people know about a certain technology, the stronger they will feel that technology may bring shock to their jobs. For a technology that is not well understood by them, the feeling that the shock is coming is not very strong. The prediction of technological impact is also related to the maturity of the technology itself.

(1) The degree of impact of "Dazhi Yiyub" technology on accounting positions in 1-2 years.

Most financial personnel are conscious of the impact of aggressive technology on their jobs. For the degree of impact of the "Dazhi Yiyun" technology on accounting jobs within 1-2 years, the impact degree index is between 3.39-3.43, the overall difference is not big (see Table 4).

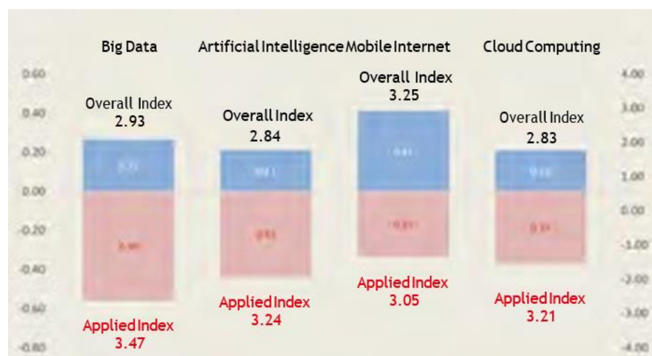

Figure 4: Comparison of the familiarity of technology of the overall and application companies Note: Calculation method of familiarity index: score based on the survey of familiarity 5-Understand very well 4-understand 3-Know 2-Know little 1-Don't know at all Familiarity Index = Understand very well percentag e × 5 +understand percentage × 4 +Know percentage × 3 + Know little percentage × 2 + Don't know at all percentage × 1.

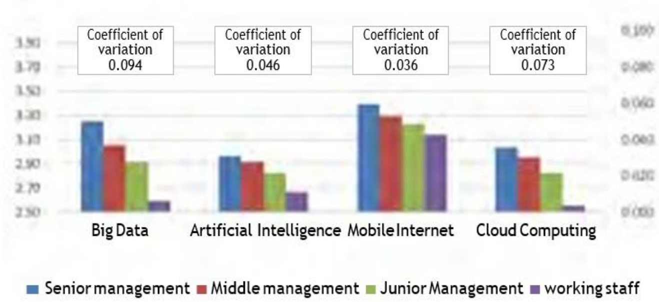

Figure 5: Voters' familiarity with "Dazhi Yiyun" at different job levels

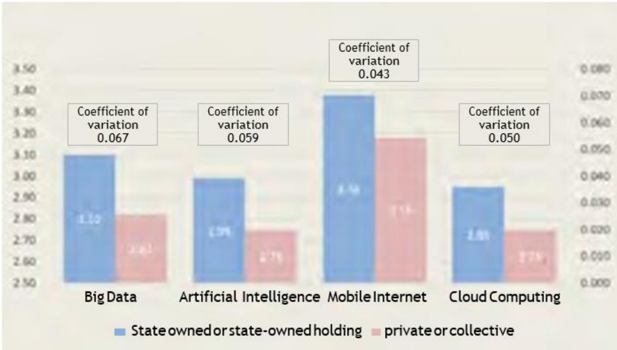

Figure 6: The familiarity of "Dazhi Yiyun" with voters of enterprises with different ownerships

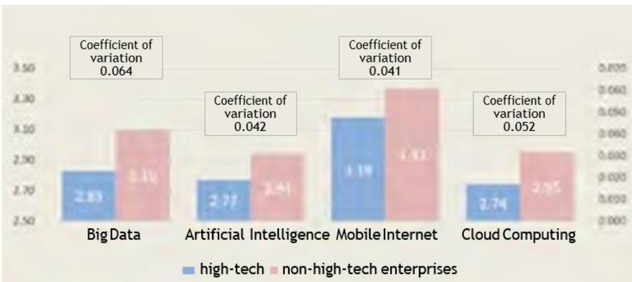

Figure 7: The familiarity of "Dazhi Yiyun" with voters of high-tech enterprises and non-high-tech enterprises

(2) The degree of impact of "Dazhi Yiyun" technology on accounting within 3-5 years.

More people have a strong hunch that the "Dazhi Yiyun" technology will impact the jobs of financial staff in 3-5 years. For each technology, less than 5% of voters believe that they have "essentially no impact" or "no impact at all" within 3-5 years. For the degree of impact of "Dazhi Yiyun" technology on accounting jobs in 3-5 years, the impact degree index is between 3.85 and 3.88 (see Table 5).

(3) Comparison of short-term and medium and long-term growth of technological impact.

In the mid- to long-term dimension of 3-5 years, the impact of each technology on the job has increased, with an increase of 0.42-0.49. But the degree of increase in the impact of different technologies is slightly different. Compared with the current highly familiar mobile Internet and big data technologies, artificial intelligence and cloud computing technologies with relatively low familiarity to people have a higher impact on financial job growth within 3-5 years (see Figure 8).

(4) The position level has an impact on the degree of impact of accounting jobs.

The middle-level managers who participated in the survey believed that the impact of various Technologies on jobs within 1-2 years was higher than those of other positions, and ordinary staff had the lowest prediction of the impact of various technologies. With the time dimension of 3-5 years, first of all, the impact of each voter level on the impact of each technology on the job position is improved. Among them, except artificial intelligence technology, ordinary staff

Table 4: Impact degree of relevant technologies on accounting personnel's work in 1-2 years

	1. No impact at all (%)	2. Basically no impact (%)	3. Have impact (%)	4. Big impact (%)	5 . Huge impact (%)	Index
Big Data	0.80	10.74	45.33	31.21	11.93	3.43
Artificial Intelligence	1.79	13.52	43.34	27.04	14.31	3.39
Mobile Internet	1.99	11.13	42.94	28.83	15.11	3.44
Cloud Computing	1.39	11.93	45.53	27.44	13.72	3.40

Note: Calculation method of the impact degree index: scored according to the survey on familiarity 5- a great impact 4- a large impact 3-There is impact 2-basically no impact 1-no impact at all. Impact degree index = huge influence percentage × 5 + biginfluence percentage × 4 + have influence percentage × 3 + basically no influence percentage × 2 + no influence at all percentage × 1.

Table 5: The degree of impact of related technologies on the jobs of accountants in 3-5 years

	1. No impact at all (%)	2. Basically no impact (%)	3. Have impact (%)	4. Big impact (%)	5 . Huge impact (%)	Index
Big Data	1.39	3.18	29.42	41.35	24.65	3.85
Artificial Intelligence	0.99	4.17	29.62	36.38	28.83	3.88
Mobile Internet	0.99	4.77	29.82	35.59	28.83	3.86
Cloud Computing	0.99	4.17	30.82	37.18	26.84	3.85

predict that the impact of various technologies on accounting positions increase the most. Senior management predicts that the impact of artificial intelligence technology will increase more than other technologies, and also higher than other job-level voters' predictions to this technology. It can be seen that senior management does not think that the impact of artificial intelligence technology on accounting jobs is small, but that the technology will not reach maturity in 1-2 years, and the feasibility of the technology should be considered in a longer time dimension. As we mentioned earlier, the higher the job level, the higher the level of familiarity with the "Dazhi Yiyun" technology. The judgment of senior management on the impact of technology is based on a higher degree of familiarity with the technology. Why do ordinary staff judge the degree of impact of technology on jobs in 1-2 years low but increase greatly in the dimension of 3-5 years? The possible reason is that the ordinary staff has less access to technology at their actual working level than managers, and lacks the understanding of the impact of technology than those managers. Nevertheless, they still realize that these technologies will bring incalculable shock to work positions someday in the predictable future (see Figure9).

(5) Compared with traditional enterprises, high-tech enterprises are more sensitive to the impact of technology.

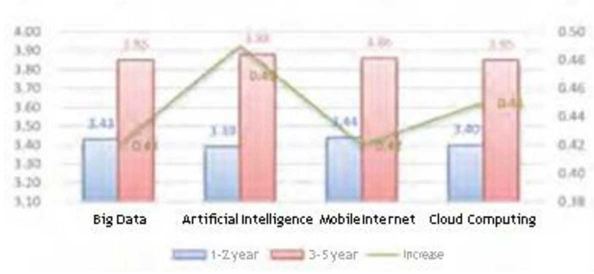

Figure8:Theimpactof"DazhiYiyun"technologyonaccountingjobs intheshort-termandlong-term

Whether it is the short-term impact of 1-2 years and the long-term impact of 3-5 years on jobs, the judgment of high-tech enterprise personnel is higher than that of traditional enterprise personnel. From 1-2 years to 3-5 years, high-tech companies predict that the impact increase will be higher than that of traditional companies (see Figure 10).

(6) Does the application situation affect the judgment of the future, or the judgment of the future affects the enterprise's decision on the application of technology.

In enterprises that have applied these technologies, the questionnaires fillers have a relatively high judgment on the impact of this technology on accounting positions within 1-2 years. Among the companies intending to apply these technologies, the questionnaires fillers judgment on the impact of "artificial intelligence" and "mobile Internet" on

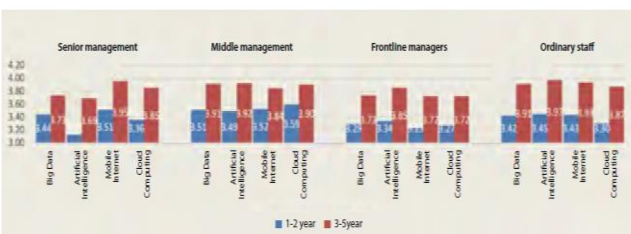

Figure 9: Views of voters at different levels on the impact of technology on accounting jobs

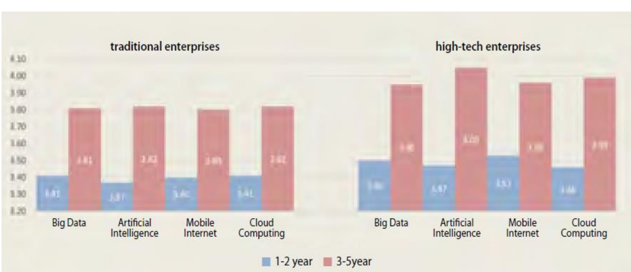

Figure 10: Voters' views on the impact of technology on Accounting posts in high-tech enterprises and traditional enterprises

Accounting positions is even higher than that of companies that have applied these technologies. In the unapplied and unintended enterprises, whether it is for the short-term of 1-2 years or the relatively medium- and long- term of 3-5 years, its forecast impact on the accounting jobs is lower than that of other enterprises (see Figure 11).

(4) What hinders the application of "Dazhi Yiyun" technology.

(1) Relevant factors affecting technology application. Generally speaking, there are several reasons that hinder the application of a technology including lack of people, lack of money, lack of technology, lack of time, fear of insecurity and so on. But for different technologies, the main reasons that hinder their implementation are different. The obstacles to the implementation of "mobile Internet" technology are less than other technologies, while the obstacles to the implementation of "artificial intelligence technology" are greater than other technologies.

In addition, many people who filled in the questionnaire also mentioned that the important reasons affecting the implementation of these technologies in their companies include the lack of understanding of various technologies and insufficient attention of management and staff, limited learning ability of employees, difficulties in talent echelon construction, insufficient national policy support, and the worry that the implementation of technology will affect themselves, etc. (see Table 6).

According to the survey, the reasons that hinder the implementation of "Dazhi Yiyun" technology are different. All kinds of obstacles to the implementation of "mobile Internet" technology are smaller than other technologies, while the obstacles to the implementation of "artificial intelligence technology" are larger than other technologies. The most important obstacle to the implementation of big data technology are security issues. The most important obstacle to the implementation of AI technology is the lack of talents. Although the barriers to the implementation of "mobile Internet" technology are smaller than other technologies, the most important reason for "how to integrate with existing tools" accounts for 44%. The reasons that hinder the implementation of cloud computing technology, like "big data", are mainly security issues. On the other hand, compared with traditional enterprises, high-tech enterprises have higher proportion of voters than traditional enterprises in "big data" and "artificial intelligence" technologies, considering the reasons that affect the implementation of technology in the questionnaire. This may not mean that the obstacles of high-tech enterprises in this respect are really higher than those of traditional enterprises, but may because the voters of high-tech enterprises are more familiar with technology itself and technology implementation, and have more in-depth consideration and deeper experience.

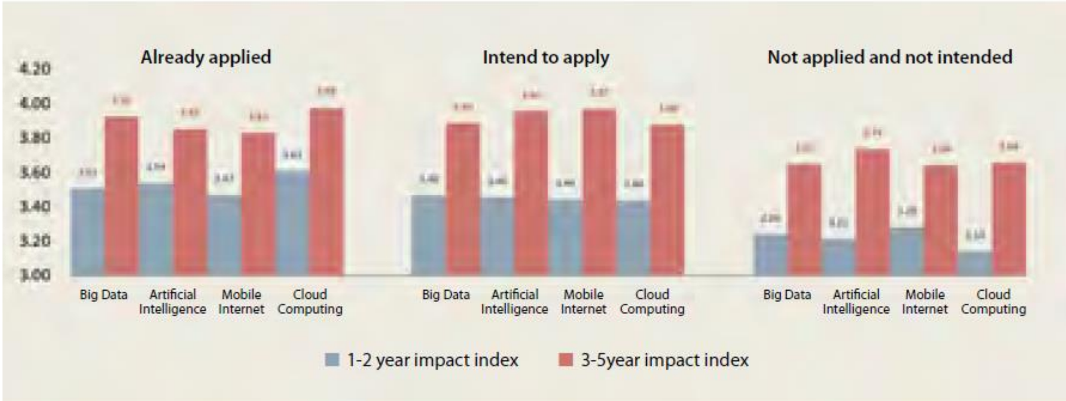

Figure 11: The impact of technology on accounting jobs according to different voters

Table 6: The main reasons that hinder enterprises from implementing "Dazhi Yiyun" technology

	Budget issues(%)	Lack of talent(%)	Security issues(%)	Development time(%)	How to integrate with existing tools(%)
Big Data	58.85	60.83	62.82	52.68	60.64
Artificial Intelligence	64.21	71.57	52.68	66.00	53.08
Mobile Internet	28.83	34.00	36.18	35.19	44.14
Cloud Computing	46.72	49.11	52.49	52.29	50.30

(2) Enterprises lack budget, personnel and training support related to technology application.

In the face of the coming technology shock, most enterprises and accounting personnel are not ready, and the budget, technical personnel and training are not enough. The adequacy or not of training in technology is also positively related to the familiarity of the person who filled the questionnaire with these technologies, the budget of the companies in which the person works who filled the questionnaire and the adequacy of their technical personnel. For the implementation of "Dazhi Yiyun" technology, the respondents generally indicated that the budget was insufficient. Even though the "mobile Internet" technology with the most adequate budget, only 23.26% of the respondents indicated that the budget was sufficient. The least budget is set for artificial intelligence technology, 61.83% of the respondents said that there is no budget for this (see Table 7).

Relative to the "Dazhi Yiyun" budget, the shortage of technical personnel is more severe, which may also be because some companies implement these technologies through the purchase of services or outsourcing. Besides money, "mobile Internet" technology have the most sufficient "talent" resources, but only 12% of the respondents in the questionnaire

Too many grades for an RPE makes it difficult to precisely define the corresponding performance rating standards. For the purpose of system design, clearly defined performance metrics and the corresponding rating guidelines are prerequisites for an effective RPE, which could help to reduce the influence of personal preferences and subjectivity of manager 's rating process, and thus improve the overall transparency and effectiveness of the appraisal system. Hence, it is desirable to have fewer grades for the rating.

Too many grades may cause controversy in the rating. For managers who conduct the assessment, more detailed grades present more challenges in defining and discerning performance between the grades, especially when qualitative measures are used in the rating. At the same time, more grades in the rating system may lead to dissatisfaction on the part of the employees. With seven performance grades as shown in Table 3, there will be six groups of employees who are not be happy with the results as everyone believes that they deserve a better grade (employees graded in categories B-G account for 90% of the population). When only three different performance grades are used, there will be only two groups of disgruntle employees (employees graded in categories B and C probably account for 70%). In sum, the more detailed the performance grades are in an RPE, the greater the personal cost would be for managers in administrating the appraisal process.

Suggestions for more effective use of the grades: In the official grading, three grades can be applied, but when meeting with the employees on feedback, more levels could be used to share the rating information with the employee. For instance, within the B category, there could also be a B+ or B-, which can be used as the basis for verbal commendation or warning.

Table 7: Whether there is a budget for the implementation of relevant technologies

	Yes, it's enough (%)	Yes, but not enough (%)	No (%)
Big Data	12.33	43.94	43.74
Artificial Intelligence	8.15	30.02	61.83
Mobile Internet	23.26	47.51	29.22
Cloud Computing	11.73	38.17	50.10

Survey

Table 8: Whether there are technicians to implement relevant technologies

	Yes, it's enough (%)	Yes, but not enough (%)	No (%)
Big Data	6.56	40.76	52.68
Artificial Intelligence	3.98	27.83	68.19
Mobile Internet	12.13	49.70	38.17
Cloud Computing	6.16	35.19	58.65

Table 9: Will the company provide personnel training for relevant technologies

	Yes, it's enough (%)	Yes, but not enough (%)	No (%)
Big Data	5.17	43.94	50.89
Artificial Intelligence	3.78	25.25	70.97
Mobile Internet	6.36	48.11	45.53
Cloud Computing	4.17	33.00	62.82

Said that there are enough technical staff. Also, less than 4% respondents said there are enough technical staff in "artificial intelligence" field (see Table 8).

Although most people realize that "Dazhi Yiyun" technology is about to have a more or less impact on accounting jobs, for the training of "Dazhi Yiyun" technology, the respondents of the questionnaire said that the proportion of "a lot of training" is still small. Even in the "mobile Internet" technology field which has the largest amount of training, only 6.36% respondents chose "there is a lot of training", while other technology between 3% to 5% (see Table 9).

Middle managers have the lowest "budget" for most of the technology, and the lowest "adequate" proportion of "technicians". For the two technologies "cloud computing" and "artificial intelligence", which are less Familiar to voters, the proportion of voters at all job levels who think that "there is no relevant budget" is absolutely dominant. For the "mobile Internet" and "big data" technologies that voters are familiar with, the proportion of the relevant budget is slightly higher, but the proportion of the "very sufficient" budget is still small. Interestingly, the adequacy of the "Dazhi Yiyun" technology budget is not positively or negatively related to the voter's position level. Except for the "artificial intelligence" technology, the proportion of middle-level managers who think that the budget of other technologies is "very sufficient" is the lowest. In contrast, except for "big data" technology, the proportion of senior managers who think that the budget is "sufficient" is the highest. The middle layer is like a bridge connecting the upper layer and the lower layer, plays a role of connecting the preceding and the following. Nine out of ten middle-level managers are selected from business backbones and business talents. Middle-level financial managers should not only understand front-line business, but also have strategic vision, and have the deepest impact on various technologies. Most middle managers will participate in the formulation of the budget and understand the budget details and goals, but they may not necessarily determine the final amount of the budget. It may be for this reason that middle managers have the deepest feelings about budget shortage (see Figure 12).

In addition, the questionnaires responders from high-tech enterprises judged the adequacy of budget, technical staff and training are higher than those from traditional enterprises. For each technology, the proportion of people filling out the questionnaire from high-tech enterprises with "have budget" is significantly higher than that of traditional enterprises. For each technology, the proportion of people filling out the questionnaires from high-tech enterprises with "have technical staff" and "having sufficient technical staff" is higher than that of traditional enterprises. For each technology, the proportion of people filling out the questionnaire from high-tech enterprises that saying "have a lot of training" is higher than that of traditional enterprises (see Figure 13).

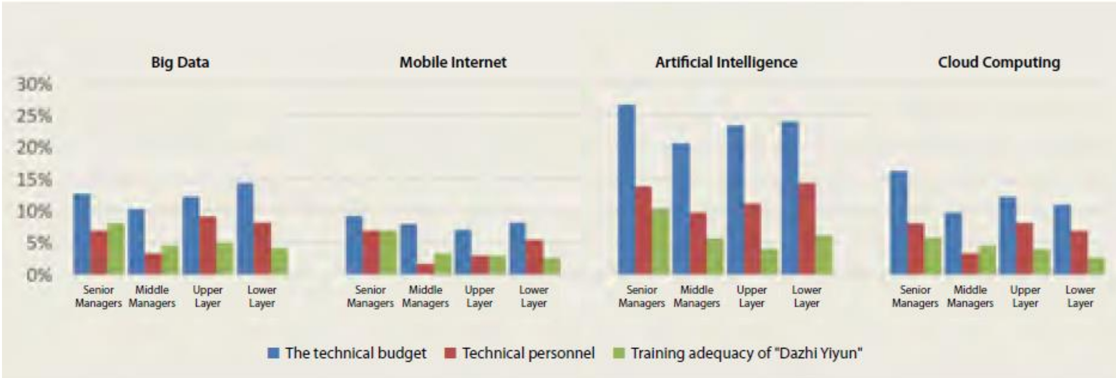

Figure 12: The technical budget, technical personnel and training adequacy of "Dazhi Yiyun"

Conclusions and recommendations

1. The concept of “Dazhi Yiyun” has been advanced, but the application needs to be strengthened

Topics such as “Dazhi Yiyun” industry development, traditional industry transformation and upgrading, and technological innovation have emerged in an endless stream. “Dazhi Yiyun” has become a highly lived concept in our lives. From the feedback of the survey, the actual application of “Dazhi Yiyun” in enterprises is not as popular as people thinks. There is a certain gap between the heated discussion and the practical application in enterprises. This gap exists not only in the understanding of “Dazhi Yiyun” technology and its development trend, but also in the understanding of how the application of these technologies will affect the transformation of enterprises. Therefore, we must not only pay attention to the spread of ideas, but also promote the application of “Dazhi Yiyun” related technologies in enterprises.

2. “Dazhi Yiyun” promotes improvement of enterprise management and digital transformation

In the “Dazhi Yiyun” era, in the face offaster and faster information dissemination, fewer and fewer information asymmetries, and a flatter society, the original social division of labor system and the boundaries of enterprises will undergo dramatic changes. Enterprises can use cloud computing, artificial intelligence, mobile internet and other technologies to unify, aggregate, and store massive information resources into Internet service clusters without occupying internal storage space. Then, conduct a centralized analysis, scientifically sort it, use it reasonably, and connect all departments organically according to the data sharing platform, eliminate information “lone islands”, improve the effective management Of information in the system, improve management efficiency, reduce management costs, and provide strong support for enterprise internal management decisions. At the same time, BI (Business Intelligence) modeling can also be carried out, combining IT technology and management methods to build an intelligent platform for enterprises that integrates data mining, data analysis modeling, and data presentation. Using a diversified perspective to mine and analyze massive data, improve the management level of enterprises and promote the digital transformation of enterprises. This is evidenced by the fact that the high-tech enterprises have higher application of various technologies than traditional enterprises, as shown in the survey.

3. The application and landing of “Dazhi Yiyun” requires multiparty linkage and collaborative Advancement.

At the government level, according to the development trends of the “Dazhi Yiyun” technology, top-level design can be done to promote the integrated application of “Dazhi Yiyun” as a whole, and the development plan and implementation outline for “Dazhi Yiyun” at the national level can be formulated in due course, and clarify the development goals and priorities of each stage of work, strengthen the Guidance and management of enterprise application “Dazhi Yiyun” development, and promote the healthy development of enterprises’ “Dazhi Yiyun” application. At the same time, representative enterprises can also be selected to provide appropriate technical and policy support so that they can set an example in “Dazhi Yiyun” application and become the best practice in “Dazhi Yiyun” application , and publicize these advanced enterprises through propaganda and reporting, experience sharing and other forms, create a good public opinion and implementation environment, and enhance their influence, radiation and leading role.

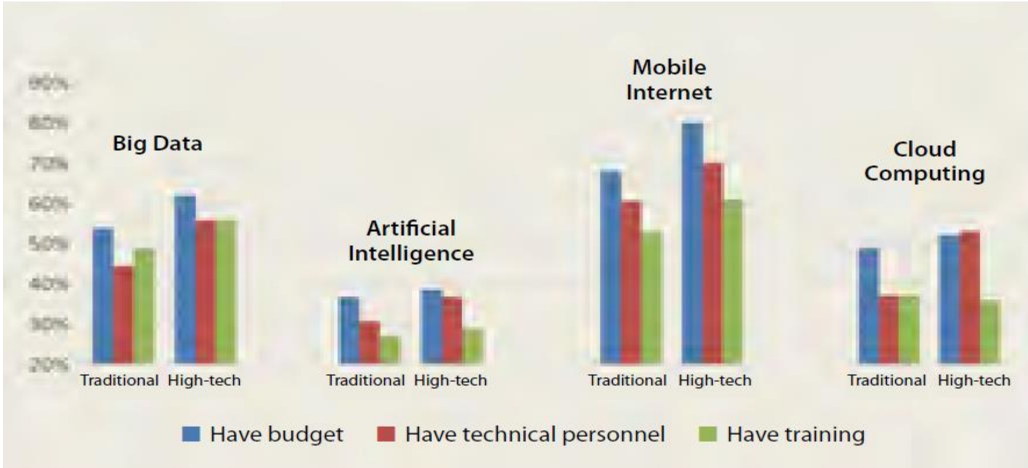

Figure 13: Technology budget, technical personnel and training adequacy budget of "Dazhi Yiyun" for voters of high-tech enterprises and traditional enterprises

At the enterprise level, the application and development of an enterprise is a systematic project of gradual advancement and continuous improvement, which cannot be achieved overnight. As an implementation subject of " Dazhi Yiyun" application, first of all, enterprises should correctly understand the necessity of "Dazhi Yiyun" application in enterprises according to their own industry characteristics and enterprise development strategies. With the guidance of the government, choose the right entry point., increase budget investment in technology, use market mechanisms to coordinate with various social forces, and carry out the application in a planned manner and under a proper plan. Secondly, enterprises should optimize business processes to ensure that the enterprise management system, organizational structure, business processes, information systems, etc. are compatible with the development of "Dazhi Yiyun" technology. Thirdly, enterprises should increase investment in knowledge and skills training, establish in-depth cooperation with universities, and cultivate more composite talents for enterprises through scientific research cooperation and talent training. Finally, enterprises should strengthen the security protection of core data information to improve the safety level of enterprise data.

At the level of financial personnel, the survey shows that most financial personnel are urgently aware of the impact of aggressive technology on their jobs. In the era of "Dazhi Yiyun", financial work will develop in a more paperless, intelligent, and automated direction. Standardization and process work will inevitably be replaced by machines, which will require financial personnel to transform and upgrade from original traditional accounting to management accounting that can help companies create value. This requires financial personnel to have a broader view and a more comprehensive knowledge system, keep advancing with the times and continuously improve its overall abilities

Domestic bench-marking peers in the iron and steel industry refer to the top 8 domestic A-share companies in the same industry in 2013 in terms of operating revenue (excluding Baosteel Shares): Hebei Iron & Steel, Taiyuan Iron and Steel Group Co., LTD , Wuhan Iron and Steel Company Limited, Ansteel,Masteel, Shandong Iron & Steel Group Company Limited, JISCO, Valin Group. Global bench-marking peers in the iron and steel industry refer to Pohang Iron and Steel Corporation (POSCO), and Nippon Steel & Sumitomo Metal Corporation (NSSMC), JFE Holdings, Inc. (known simply as "JFE"), United States Steel Corporation (USS), ArcelorMittal, S.A. (ArcelorMittal). US" and China Steel Corporation (CSC).

How should CFO's handle the economic and financial challenges in the COVID-19 Era

By Jacques van Wyk, CEO, JGL Forensic Services / Member, IAFEI Technical Committee

On March 27, 2020, life for South Africans changed. It will likely never be the same again.

With just four days' notice, the government announced what would become one of the strictest Coronavirus lockdowns in the world.

The initial Level 5 restrictions on personal freedoms were harsh enough – no going outside except for essential shopping, no sales of alcohol or cigarettes… - but the effect on businesses was both swift and catastrophic.

There was little time to prepare.

Four days were nowhere near sufficient for many companies to successfully put in place all the measures needed to have employees working safely and securely (from a cybersecurity point of view) from home. There was also much initial confusion over which services would be classified as "essential," and how those business could ensure they had all the permits and documentation required to continue operating during the lockdown.

The economic effect was felt right from the start. Faced with a sudden and complete loss of trade, many "non-essential" (particularly smaller) businesses were forced to retrench staff and put other cost saving measures in place in a desperate attempt to meet their short-term financial commitments and keep the red ink off their bottom line.

Even those organisations with disaster recovery plans in place for natural disasters were not protected, as the COVID-19 pandemic was not classified as a natural disaster!

Living Through Lockdown

Originally, we were told lockdown would last for three weeks. We hung on to that like a drowning man to a flotation device. But as the lockdown was repeatedly extended – albeit finally with less severe restrictions - we all became obsessed with when we would see a return to our historic "normal."

Now, almost five months in, we are, reluctantly and with a not insignificant amount of grief, becoming resigned to never seeing a return to the "old" normal. Instead, we now talk about our "new normal," and how best we can adapt to it.

The fallout from the past five months has been staggering.

Although we are now at Level 3 lockdown restrictions, with approximately 70% of the economy reopened, entire segments have been left decimated. The tourism, travel, entertainment and hospitality industries have perhaps been hardest hit. Our acclaimed wine industry too, is on its knees, reeling from months of an inexplicable ban on the production, sale and consumption of alcohol.

A report released by the treasury in June states: "The lockdown has taken a severe toll on an already fragile economy. The limited data available suggests a steep contraction across all sectors over the past three months. Construction, retail and hospitality were particularly hard hit, and retail sales restrictions had significant knock-on effects across the economy. Reduced global demand and border closures, alongside uncertainty about the application of lockdown regulations, further hampered activity.

"The rand has depreciated by 18.1 per cent against the US dollar since January. In comparison, an index of emerging-market currencies weakened by 4.6 per cent over the same period. South Africa's risk premium – the additional return that investors demand to compensate for higher levels of risk – stood at 5.2 per cent at 15 June 2020, compared with 3.2 per cent at the end of 2019. Bond yields have stabilised due to Reserve Bank purchases of government bonds but remain higher than before COVID-19. This indicates uncertainty about South Africa's longer-term growth and fiscal position, and means government pays more to borrow money."

The South African Government's R500 billion fiscal relief package offers a glimmer of hope to struggling households and businesses. But its weak fiscal position going into the crisis means it simply cannot afford to fully offset the effects of the pandemic.

There's no escaping these hard facts:

- Total Government debt to GDP is set to pass 80% this financial year.

- An estimated 3 million jobs have been lost to date due to the pandemic. And with every income earner supporting an average of at least 4 to 5 others, the impact of these job losses directly affects upwards of 12 million people.

- In a survey in June, over one fifth of South African households reported a child or an adult going hungry within the past 7 days. In the newspapers, we read profoundly disturbing stories almost daily of children suffering from hunger and malnutrition, with some forced to eat roadside plants to survive, as money for food ran out as far back as April.

How Can You Help?

So, as a CFO, what can you do to ensure your company successfully weathers this storm?

The important thing to remember is that it is not necessarily the strongest or largest organisations that will survive, but rather those that are best able to adapt to the new circumstances.

It's simply not possible to account for all risks.

The effects of COVID-19 are likely to be felt for months and years to come, and there are many variables - including staff, operations, suppliers, customers, liabilities and other key stakeholders.

The key is to avoid emotional decision making, and try to obtain as objective and insightful understanding of foreseeable business trends as possible.

As a CFO, your focus in the short and medium term is to maintain your company's liquidity and cash flow. This can be achieved by:

- Re-assessing the strength of the Balance Sheet
- Diversifying and securing new lines of credit (if needed)
- Monitoring and managing receivables
- Pro-actively engaging suppliers
- Driving sales in a disrupted market
- Focusing on realistic cost savings
- Reconfiguring your work force
- Utilising government support and tax relief programmes
- "Right sizing" your core business

In the midst of all this, however, it's vital to not lose sight of the importance of enforcing basic operational practices. Surviving COVID-19 does not mean existing operational principles no longer count!

If you have a strong balance sheet and cash reserves, you'll be better positioned to seize opportunities, outdistance your competitors, innovate and grow more quickly in the ensuing recovery.

In Conclusion

There has never been a more opportune time for CFOs to step up and be true leaders here. Your company is looking at you to:

- Demonstrate leadership and cool-under-pressure decision making
- Keep morale high
- Manage fear and anxiety and ensure that quality information reaches decisions makers on all levels

"*The ultimate measure of a man is not where he stands in moments of comfort, but where he stands at times of challenge and controversy.*"

Martin Luther King Jr.

COVID – 19: CFO takeaways on business ethics and on the socio-economic dimension

by Marco Nicoli, Former World Bank Sr Project Manager and currently Special Advisor to the Director of the OECD Development Centre for the Human-Centered Business Model and ***by Filipa Correia,*** Chair of the IAFEI International Tax Policy Working Group and ***by Alessandro Valente,*** BBA, MA, LLB, currently works in the private capital group at UK-based law firm Harbottle & Lewis

Introduction

With the COVID-19 pandemic still in full force, it is high time for businesses to reflect on the potential long-lasting effects of this global phenomenon. In a recent survey, almost 3000 respondents from 33 countries and 600 employees across levels of seniority were surveyed. The overwhelming majority, corresponding to 90% of the respondents, believed that disruption generated by COVID-19 constitutes a serious risk to ethical business conduct, but there is a concerning disparity between boards, senior management and employees on the implications for compliance.

In addition to the inevitable disruption caused to the global markets, the COVID-19 pandemic magnified some of the traditional challenges that businesses face in their daily operations. As such, it is necessary to also consider the impact that the severe change in working patterns is generating. On this note, the survey indicated that there is a real concern that such disruption will constitute a risk to the ethical conduct of the organisation. There is in fact apprehension in relation to the thought that the disruption of supply chains and reductions in employee benefits and compensation could lead to heightened risks to company ethics. The multidimensional impact of COVID-19 will surely have a long-lasting impact on all major aspects of human and business interactions. This paper will delve deeper into those socio-economic and business ethics issues that are being generated by the ongoing pandemic and attempt to find effective Solutions for CFOs and C-suites to use in order to fulfil their role within both their companies and society at large.

Socio-Economic Dimension

The UN's Framework for the Immediate Socio-Economic Response to the COVID 19 Crisis has been on the forefront of the belief that "The COVID-19 pandemic is far more than a health crisis. As such, calculating the impact of the COVID-19 pandemic on society, the economy and vulnerable groups is crucial to prepare the appropriate responses of governments and partners to recover from the crisis as efficiently as possible.

Without a prompt socio-economic response, the overarching impact of the virus will heighten, thus threatening lives and livelihoods for years to come. Urgent development responses to this emergency must be launched with an eye on the future. It is important to keep in mind that the recovery trajectory in the long-term will be impacted by the decisions that countries are taking in the present, as well as by the support they receive.

Thus, a macroeconomic response is necessary and the fiscal and financial aspects seem increasingly vital. To achieve this, a multi-step plan looks appropriate to tackle the situation.

Konstantinos Makrygiannis, "Global businesses divided on implications of COVID-19 crisis for company ethics" <https://www.ey.com/en_gl/news/2020/06/global-businesses-divided-on-implications-of-covid-19-crisis-for-company-ethics> accessed 20 July 2020

United Nations, "UN's Framework for the Immediate Socio-Economic Response to the COVID 19 Crisis", available at <https://unsdg.un.org/sites/default/files/2020-04/UN-framework-for-the-immediate-socio-economic-response-to-COVID-19.pdf> accessed 21 July 2020.

Firstly, to assess the scale of the needed increase in expenditure, a comprehensive understanding of the various channels of economic impact is essential. The countries' original methods to limit the spread of the virus through the use of various quarantine structures, restrictions on travel and lockdown of cities have caused a critical reduction in aggregate demand, with the major areas affected being tourism, hospitality, and retail. This has also negatively impacted labour markets and supply chains, effectively damaging the productive structure and lowering pay. Needless to say, developing countries are extremely exposed to the current breakdown of global value chains, which are increasingly affecting tax revenues.

In addition, the rapid decline in GDP growth cannot be underestimated. The IMF's baseline projection for global economic growth is -3 % for 2020, with a projected cumulative output loss of $9 trillion during the crisis. Should the negative trend continue, it would generate the largest contraction since the Great Depression. The International Monetary Fund (IMF) estimates a drop of 6.3 percentage points if compared with the pre-pandemic growth projections. Furthermore, comprehensive fiscal measures, will be required to limit the scope of the pandemic, contain job loss, diminish job loss and provide minimum living standards, with a particular focus on the most vulnerable areas within the population.

The pandemic event caused financial and liquidity concerns for many companies worldwide that had an immediate impact on their work force. While some companies have been able to shield their workforce from such impacts and are choosing to keep and pay employees during the suspension of their activities, many companies have had to lay off workers or reduce their working hours. In March 2020, the International Labour Organization (ILO). estimated that the impact of COVID-19 will result in a rise in global unemployment of between 5.3 million ("low" scenario) and 24.7 million ("high" scenario).

New unemployment figures emerging from impacted countries suggest the impact may already be greater than the "high scenario". In the US alone, about 16.8 million people filed for unemployment benefits, making up about 11% of the US labour force.

Such rise in unemployment may hit hardest the workers that are not covered by regular (e.g. sick or unemployment paid leave) or exceptional COVID-19 specific safety nets, such as independent workers, zero-hour contract workers, or informal workers, among which many are migrant workers and women.

Finally, the key impacts of the prospective policy measures will need to be duly examined in order to make sure that policy makers take into account policy trade-offs and that the predicted effects of such measures are sustainable over time without generating excessive economic and social instability and environmental impact. Over the next 12 to 18 months, the socio-economic response will be critical to the success of the global fight against the inevitable repercussions of such pandemic. Along with the socio-economic aspects, the business ethics dimension will also be particularly relevant.

Business Ethics Dimension

The all-encompassing dimension of this pandemic is inevitably of an ethical nature. Since its inception, this pandemic has placed a nearly unprecedented focus on the "value of life". This refocusing on some of the most essential aspects in our life has forced businesses to re-evaluate the importance of their human capital as the true foundation of their enterprises, as well as the wellbeing of their customers.

On this note, there has been great disparity in the way different countries attempted to provide aid to those that were mostly affected by the virus. For instance, the EU's response to the pandemic has been prompt, with Member States receiving substantial aid mainly in the form of loans and other financing instruments. The same cannot be said for major geopolitical players such as the US, Brazil, India (to name a few) that are still in the struggle to contain the virus effectively and are suffering from its most severe repercussions.

On this note, the COVID-19 pandemic allows for the opportunity to re-think and re-model the relationship between the company and its employees and customers. We have already experienced a considerable number of businesses giving back to their employees in these challenging times.

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*IMF, "2020, Global Economic Outlook", available at <https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020> accessed 22 July 2020.
*IMF, "The Great Lockdown: Worst Economic Downturn Since the Great Depression", available at <https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/> accessed 22 July 2020.
*ILO (2020), "COVID-19 and the world of work: Impact and policy responses", available at <https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_738753.pdf> accessed 23 July 2020.
*OECD,https://www.businesshumanrights.org/sites/default/files/documents/OECD_COVID19%20and%20Responsible%20Business%20Conduct_Full%20Note.pdf

Examples of such an approach are the extension of the sick leave protection, making remote working accessible for all employees, or even promising full pay to temporary and daily-wage earners. Such measures are great examples of corporate ethics and could improve the lives of millions of workers in most of the areas of employment. However, it is impossible not to mention what is likely to be the most vulnerable portion of workers: those who are part of the “gig economy”. It is no surprise that the gig economy has suffered extensively during the pandemic. Gig workers such as food delivery, personnel, etc. largely enjoy no safety nets.

Moreover, since most of these workers tend to work very close to the line without sick leaves, earning low wages and constantly interacting with customers, they are naturally more exposed to the COVID-19 virus. In addition, it is common for the “delivery partners” of multinational gig giants to not receive medical coverage or health insurance. For this reason, it is important for these companies to quickly take into account the ethical aspects behind their business.

Considering the severity and urgency of the context in which we live in, the fact that these actions are taken due to a brand-building exercise or for social good should not matter. What matters is that such efforts are put forward to aid society as a whole.

What is at stake for CFOs

In a recent survey, CFOs have shown to believe that the long-term impact of the pandemic will be drastic and that profound changes at all corporate levels are necessary to respond to such an unprecedented event. When asked about their thoughts on the economy recovering, CFOs of both EU and US companies tend to agree that it will be “U” shaped. This translates to a substantial dip before economies are expected to return to pre-pandemic levels. Surprisingly, CFOs of Asian companies are far more pessimistic in their prediction, believing in a “L” or “W”-shaped scenario.

Independently from their views, CFOs are inevitably at the forefront of this crisis and their decisions will ultimately be crucial for the future and well-being of our society.

As such, it is increasingly evident that CFOs and C-suites are taking decisive actions to back their businesses, by placing costs, cash, and performance as top priorities.

In the same survey, more than 80% of CFOs interpret these times as a strategic opportunity for transformative change. Such approach will likely see an increased focus on digital and innovation.

Furthermore, in a recent article, six major steps were proposed to CFOs to efficiently manage the crisis. Those are:

1. **Preparing for talent disruption, consider investing on benefits and access to healthcare** and **virtualizing the organization** by providing resources for staff and making clear how people should support one another, and by virtualizing the finance function and other parts of the organization to operate effectively amid social distancing; Furthermore, companies that invest on robust practices on worker leave and other benefits are better positioned to retain critical employee skills and know-how and avoid talent disruption issue during the crisis, while helping on the quick recovery from its medium and long term effects.
2. **Bolstering liquidity** by managing short-term credit, cash, and performance needs;
3. **Communicating frequently** with critical stakeholders to keep them informed including engaging in social dialogue, industrial relations and a more efficient stakeholder engagement;
4. **Driving operational improvements** necessary to navigate the sharp downturn;
5. **Managing risks** and serve as stewards of company assets during this vulnerable time;
6. **Planning for recovery** by strategically positioning and utilizing assets.

Inevitably, the very nature of economic recessions makes them particularly challenging, especially for the years that follow, but they inevitably provide a unique

*Sara Kalloch & Zeynep Ton, “How Can’t-Close Retailers Are Keeping Workers Safe”, available at <https://hbr.org/2020/03/how-cant-close-retailers-are-keeping-workers-safe> accessed 22 July 2020.

*With the term “gig economy”, the authors refer to the following: “In a gig economy, temporary, flexible jobs are commonplace and companies tend toward hiring independent contractors and freelancers instead of full-time employees. A gig economy undermines the traditional economy of full-time workers who rarely change positions and instead focus on a lifetime career”.

*PwC, “Pulse Survey”, available at <https://www.pwc.com/us/en/library/covid-19/pwc-covid-19-cfo-pulse-survey.html> accessed 20 July 2020.

*OECD,“COVID-19 and Responsible Business Conduct”, available at <https://www.business humanrights.org/sites/default/files/documents/OECD_COVID19%20and%20Responsible%20Business%20Conduct_Full%20Note.pdf> accessed 24 July 2020.

I A F E I Q U A R T E R L Y

Opportunity for businesses to innovate and exploit opportunities to distance the competition and place themselves in a favorable position to grow – leading to a more responsible business conduct. As such, the speed at which the COVID-19 crisis is unfolding may require CFOs to use new tools in order to further enhance their ability to improve their organizations through these ever-challenging times. By embarking into a responsible business conduct and implementing the necessary steps and procedures, businesses will contribute to avoid potential adverse impact on people, global value chains and on the environment. There is evidence that companies taking steps to limit the impact on their workforce are likely to build more long-term value and resilience to the business.

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Incentive mechanisms and risk management in financial industries

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Abstract

The financial crisis in 2008 illuminated the importance of incentive mechanisms for financial risk management. This paper analyses the practices and innovations of incentive mechanisms utilized in the financial industries in both the West and China. We find that equity incentives commonly used in Western financial industries can help to align the long-term interests of managers with those of shareholders, but due to capital market noise and information asymmetry, equity incentives are often overly expensive, and they can motivate managers to engage in excessively risky investment projects. The deferred payments and non-equity long-term incentives widely adopted by Western enterprises after the financial crisis can help in reducing these drawbacks.

Owing to the underdevelopment of China's capital markets and the high noise levels in stock prices, equity incentives are not suitable for large-scale use by Chinese enterprises. In recent years, Chinese enterprises have explored alternative incentive mechanisms that have the desirable features of an equity-based incentive mechanism and are more suitable for Chinese market conditions. These innovations help to reduce opportunity costs and create long-term value.

Keywords

Incentive mechanisms; Risk management;
Equity incentives; Non-equity longterm incentives; Partnership models

Incentive and Performance evaluation

An efficient financial market is key to economic development. The financial crisis in 2008 illustrated the significance of financial risks, and the high importance of the design of incentive mechanisms and risk management in the financial industry.

A good incentive mechanism can motivate both management and employees to work hard, and prevent them from excessive risk-taking behaviors, so as to create long-term value for investors and society. For a long period of time, the Western financial industry explored the use of equity incentive plans to align the interests of managers and employees with those of enterprise owners. In the past two decades, Western financial enterprises also introduced non-equity long-term incentives and deferred payment based on certain financial measures and non-financial measures to reduce short-sighted behaviors of management.

Because of the characteristics of China's capital markets, the value of large-scale implementation of traditional equity-based incentive mechanisms in Chinese financial enterprises is more limited. Drawing on the experiences of the West, Chinese enterprises have continuously explored and created various incentive mechanisms with equity features that are in line with the characteristics of China's market conditions. These incentive mechanisms not only help tackle traditional enterprise risks, but also enhance the enterprise's ability to create value, and reduce the tendency of Chinese enterprises paying insufficient attention to the risks of opportunity cost losses. This paper focuses on the financial industry, but most of the discussion is applicable to non-financial enterprises as well.

Risks in the financial industry

There are many kinds of financial risks, including traditional risks such as policy risks, institutional risks and business cycle changes, as well as competitive pressures brought by new market participants and the rapid development of technologies. Within the broader trend of integration of industrial businesses and financial businesses, an increasing number of non-financial enterprises have begun to enter the financial sector, such as Tencent's WeChat payment and Alibaba's Alipay in the social financial market, as well as Microsoft, Apple, Haier, Moutai, JD.DOC and other non-financial companies engaged in cash management, financial investments and financial services. The disruptive impact of modern information technology makes digital finance key to the future success of the financial industry. Artificial intelligence can fundamentally change the nature of financial services, including altering demand for employees and services. According to a global banking survey conducted by Ernst & Young (2017), 19% of banks worldwide were expected to achieve digital maturity in 2018, and the ratio will grow to 62% in 2020. The rapid expansion of digitalization has been changing the traditional business and operation models of the banking industry.

The subprime mortgage crisis in 2008, which caused the collapse of financial markets in major developed countries has made people rethink the risks of financial industries. In an article published in *The Wall Street Journal* on October 10, 2008, Paul Volcker, former chairman of the Federal Reserve Board of the United States, argued that the rebuilding of the financial systems will "require more understanding of the risks embedded in so-called financial engineering and of the perverse compensation incentives that have exalted risk over prudence". Nobel laureate Joseph Stiglitz, former Federal Reserve Chairman Ben Bernanke and Adair Turner, former Chairman of the Financial Services Authority of the UK government, also believed that inadequate performance evaluation and incentive management of financial executives was one of the main reasons for the outbreak of the financial crisis. After the 2008 financial crisis, politicians, business executives and academics in Western countries began to pay more and more attention to incentive mechanisms and risk management of financial executives in efforts to improve compensation systems to link the long-term interests of management with those of enterprises, and to prevent management from excessive risk-taking in pursuit of short-term interests.

In contrast, unlike the excessive risk-taking of Western financial enterprises, a major risk of many Chinese financial institutions under the existing incentive mechanisms is the opportunity costs of overly conservative behaviors, which is rooted in the lack of long-term incentives for senior management.

Theoretical analysis of incentive mechanisms

The separation of corporate control and ownership makes the principal-agent problem between shareholders and management one of the core issues of corporate governance. The agency problem is difficult to avoid because of the existence of information asymmetry and the resulting misalignment of the interests of shareholders and management. An optimal contract should meet both the incentive compatibility constraint and the participation constraint for the agent which could reduce agency costs and maximize the principal's profits.

According to management accounting theory, to create value for a firm's owners, a good incentive mechanism should have an equity component, which directly links the interests of the firm's managers with the long-term interests of its owners. A performance evaluation and incentive contract based on the firms' short-term financial measures often leads to managers' myopic behaviors which are detrimental to innovation and future value creation(Bushman R. and R. Indjejikian, 1993; Li Z. and Wang L.,2005). The design of the incentive mechanism should also take into account the sensitivity and precision of the relevant measures (Banker and Datar, 1989). The higher the correlation (sensitivity) between a measure and the efforts of the manager, the higher its weight in the design of the incentive contract, and the higher the objectivity (precision) of the measure, the higher its weight.

However, the traditional performance evaluation and incentive mechanisms of many American enterprises have not sufficiently addressed the principal-agent problem. They often encourage management focusing on short-term performance metrics and harm the long-term interests of the enterprise for the sake of the short -term interests of the individual agent. They also often lead to extremely high incentive costs. For example, Sanford Weill, the former chief executive of Travelers Group, earned over $400 million compensation in 1997. His cash salary and bonus was just around $ 7 million; the overwhelming bulk of his gains came from stock options and the stock market. Data from listed companies shows that, in the decade leading to the year 2000, stock option income was the most significant part of executive compensation in many companies. This often led to executives' excessive risk-taking, because they could gain tremendous benefits when risky projects succeeded, and the personal cost of a failure was simply to not exercise their stock options.

In research done by Chinese academics on incentive mechanisms of the Chinese financial industry, there are two major findings: one is that incentive mechanisms are related to value creation; the other one is that the design of incentive mechanisms has not given sufficient consideration to risk control. Jiang Hai et al. (2010) found that there was a significant positive correlation between executive compensation and business performance in 14 listed banks in China, but those banks had not established adequate risk control mechanisms in incentive contracts for their senior executives. Zhou Li and Zhao Wei (2012) studied the relationship between executive compensation incentives and operating performance results of 16 listed banks in China and they found a significant positive correlation. They also found that these banks' internal governance systems had a positive incentive effect on operating performance, but they had not played a significant role in risk control. Hong Zheng and Guo Peijun (2012) argued that incentive contracts for financial executives need to consider both effort motivation and risk control. Furthermore, Shao Shuai et al. (2014) documented that differences in property rights have an impact on equity incentives. State-owned enterprises, due to excessive policy constraints, often have inadequate equity incentives, and equity incentive programs are more popular and effective in private enterprises in China.

Incentive practices in Western financial industries

The incentive mechanisms of Western financial industries have undergone evolution from more fixed-based compensation to more variable-based compensation related to performance and risk management, and from short-term incentives based on bonuses to long-term incentives based on equity (Bennett et al., 2016). The practice of utilizing equity incentives in Western enterprises has a history of nearly a hundred years, and gradually

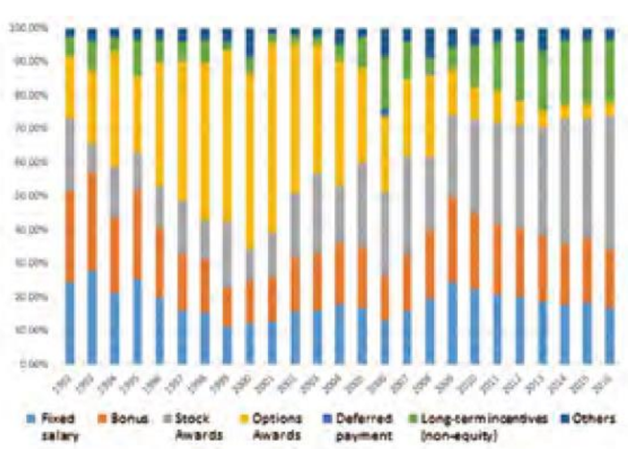

Figure 1: The changing composition of CEO compensation of listed commercial banks in the United States
Source: ExecuComp Database.

Developed into the most commonly used type of long-term incentive in the 1990s. Equity incentives are a specific application of mechanism design theory in the practice of enterprise management. It takes the value of the company as an important determinant of the income function of managers, so that the interests of managers and those of shareholders are closely tied together, so as to motivate company managers to maximize the interests of the firm's shareholders while pursuing their own interests, which is conducive to the long-term value creation of the company(Liang Xiaocui, Sarina and Yan Xiaoming, 2017). Figure 1 shows the changing trends of the composition of total CEO compensation of listed commercial banks in the United States since 1992. Overall, the proportion of fixed pay and annual bonuses continues to decline whilst equity compensation, long-term incentives and other variable portions of compensations are becoming increasingly higher.

Stock option incentives are a contract in which employees are granted the right to buy a fixed number of shares according to pre-determined price (exercise price) and time interval. When the stock price of the company is lower than the exercise price, the employee simply chooses not to exercise. At its peak, stock option income accounted for more than half of the total income of senior executives in the United States. In recent years, American companies have greatly reduced the granting of employee stock options, while increasing the proportion of restricted stock in employee compensation packages. This is due both to the concern about stock options' encouraging executives to take excessive risks to increase their option value, as well as the US government's change in accounting for employee option expense in firms' financial statements since 2005. Different from stock options, restricted stock is granted directly to employees, and employees must meet working time requirements or performance requirements in order to vest them. It is vital to set the appropriate vesting restrictions to motivate employees to work for the firm's long-term value creation and also help retain good talent.

Although the cost of equity incentives is higher than that of the equivalent amount of cash incentives to the firm, it is still a good way to create long-term value for shareholders if they are properly designed. One major problem associated with equity incentives is that they

Are too reliant on the capital market and are vulnerable to the noises of market price. The sensitivity and the precision of stock price as an employee performance measure are not high. In view of this, Western financial and non-financial enterprises have been using deferred compensation, non-equity-based long-term incentives and other tools over the last decade to make up for the defects of traditional equity-based incentives.

The proportion of companies that adopted financial performance based long-term incentives for CEOs in S&P 500 companies increased from 16.5% in 1996 to 43.3% in 2008, with average annual payment reaching double that of basic salaries (Li and Wang, 2015). The payments of those incentives can be made either in cash or in stock. As can be seen from Figure 1, the proportion of non-equity long-term incentives in CEO compensation of US commercial banks has increased significantly since 2008.

Deferred payment is another incentive mechanism that aligns the interests of managers with a firm's long-term value creation. Deferred payment has the incentive alignment characteristics of a traditional equity-based compensation scheme but adds an additional nice feature where it can reduce the impact of capital market noise. We will use UBS' experiment as an example.

In an attempt to alter its short-term focused corporate culture and improve the firm's risk management, UBS changed its compensation system for senior executives in 2008, introducing deferred compensation for group executive board members, divisional top management and other specific employees. The new scheme takes into consideration long-term factors such as the sustainability of corporate profits, capital management and improvement of customer service capabilities. One of the main innovations was changing fixed cash bonuses from a one-time short-term incentive to a multi-period long-term incentive, making executives' compensation more closely linked to their future performance. UBS stipulated that executive compensation consists of three parts: a fixed base salary, variable cash compensation and variable equity compensation. Starting from 2009, any previously announced variable cash compensation has been booked to a participant's account before distribution. If the balance is positive, up to a maximum of 33% of the account is paid out. The remaining balance is carried to the next performance year and is exposed to future internal and external performance fluctuations. A distinct feature of this cash balance plan is that the balance can be adjusted both upward and downward, based on future risk-adjusted and capital-adjusted operating financial performance and non-financial goals achieved (UBS, 2008).

Table 1: Variable cash compensation of UBS

Cash Balance		Year 1	Year 2	Year 3	Year 4	Year 5	etc.
	Previous year balance		100	40	120	60	80
+	Awarded bonus	150		140		60	
-	Awarded malus		-40		-30		
=	Interim balance	150	60	180	90	120	
x	Payout	33%	33%	33%	33%	33%	
=	Amount paid out	50	20	60	30	40	
	Balance after payout	100	40	120	60	80	

Table 1 assumes that an executive of UBS performed well in the first year and was awarded a cash bonus of $150,000. According to the plan, only one third of this amount could be actually paid out to the executive that year and the remaining $100,000 would be transferred to the second year. Assuming the employee's performance is poor the next year, the company would calculate a negative award and $40,000 would be deducted from the balance. The new balance would become $60,000 and one third, or $ 20,000, would be paid out to the executive that year, and the remaining $40,000 would be transferred to the third year. Assuming the third year's performance is good, a new cash award of 140,000 would be added, and $60,000 cash, one third of the new balance of $180,000, would be paid out at the end of the third year.

The cash balance plan rewards employees for their long-term successes and converts a traditional short-term incentive scheme into long-term mechanism. Because the balance can be adjusted upward and downward based on a pre-determined future performance formula, it has the motivational feature of an equity incentive but at the same time controls the impact of market noises. Compared to a traditional equity incentive plan, the deferred cash payment scheme improves the sensitivity and precision of the performance measurement, and, therefore, could help reduce the compensation costs of the company, UBS uses a similar approach to stock-based compensation for executives: the initial stock award takes three years to vest, and its annual balance fluctuates with future performance.

Incentive mechanism exploration and innovation in China's Financial Industry

The incentive mechanisms of China's financial industry are quite different from that of the West. Compared with countries with mature capital markets, equity incentives in China started relatively late. In December 2005, the promulgation of *Equity Incentive Management Methods for Listed Companies (Trial Implementation)* marked the beginning of the implementation of equity incentives for Chinese enterprises. As of May 19, 2018, 730 A-share listed companies had stock option incentive schemes for their employees (see Table 2).

Table 2: Stock option incentive schemes of A-share listed companies in China

Options/ Total shares (%)	Numbers of plans announced (July 1, 2005-April 22, 2008)	Numbers of plans announced (April 23, 2008-December 31, 2008)	Numbers of Effective plans (May 19, 2018)
0<x<=1	7	6	177
1<x<=3	8	9	297
3<x<=5	20	4	161
5<x<=8	14	7	68
8<x<=9	4	1	8
9<x<10	6	2	17
x=10	2	0	2
Total	61	29	730

There are two significant problems in the first 61 stock options incentive schemes awarded before April 22, 2008 by China's A-share enterprises. First, the vesting period for exercise has been relatively short. The vesting periods for exercise in Western countries are often three years or longer, while the effective vesting periods for exercise in those Chinese companies are mostly only 1-2 years. The shorter vesting period for exercise turns the stock option from a long-term incentive into a short- term incentive. The second problem is that the number of shares granted to the recipients is often too high. Eight of the first 61 companies awarded more than 9% of the company's shares to employees as equity incentives in one go. Excessive equity award carries high incentive costs for the firm and seriously dilute the current shareholders' interest. At the end of 2008, the Ministry of Finance and the State-owned Assets Supervision and Administration Commission of the State Council issued a new policy, which imposed some restrictions on the equity incentive scheme design and income levels of employees of state-owned enterprises, especially in financial enterprises. After that, the number of state-owned enterprises implementing equity incentives decreased significantly. By May 19, 2018, there were only 50 central state-owned enterprises implementing equity incentive schemes, and 47 local state-owned enterprises had equity incentive schemes.

Because of clear property rights, shareholders of non-state-owned listed companies are more supportive of using equity incentive schemes to motivate company employees. By May 19, 2018, 529 non-state-owned enterprises had employee options incentive schemes (see Table 3).

The scope of employee equity incentives is an important issue. One widely criticized problem with equity incentives used by many American companies around the turn of the century was that too many employees participated in equity incentive plans. Equity incentives in Chinese enterprises are mostly limited to senior executives and core employees. In November 2005, the Bank of Communications granted stock appreciation rights to its corporate executives in a long-term incentive plan. In comparison, China Construction Bank (CCB) implemented its first employee equity incentive scheme on July 6, 2007. Roughly 270,000 qualified employees were awarded a total of 800 million H shares through a "subscription + reward" plan. Considering the very limited sensitivity and precision between a company's stock price movement and the effort of individual low-level managers and ordinary employees, it is obvious that the incentive plan of the Bank of Communications was more effective and cost effective in motivating the participants of the plan. Due to the high level of noise in China's capital market, a company should be cautious when considering awarding an equity based incentive plan to a big number of employees of the firm. In the period between the announcement issued by the Ministry of Finance and the State-owned Assets Supervision and Administration Commission of the State Council from 2008 to 2013, implementation of employee equity incentives for state-owned enterprises in China was almost completely stopped. In November 2013, the Third Plenary Session of the Eighteenth Central Committee adopted *The Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning Deepening Reform*, proposing that "the system of professional managers should be established to better play the role of entrepreneurs. Establish a long-term incentive and control mechanism

Table 3: Options plans by enterprise type (by May 19, 2018)

Options/Total shares (%)	Central state-owned enterprises	Local state-owned enterprises	Non-state-owned enterprises	Other enterprises	Total
0<x<=1	25	27	102	23	177
1<x<=3	19	13	227	38	297
3<x<=5	4	4	128	25	161
5<x<=8	0	2	52	14	68
8<x<=9	0	1	7	0	8
9<x<10	0	0	13	4	17
x=10	2	0	0	0	2
Total	50	47	529	104	730

and strengthen the accountability of state-owned enterprises for operating and investing activities." Since 2015, some state-owned enterprises have resumed the implementation of equity incentive plans. China Unicom issued an equity incentive plan on February 11, 2018. The first phase of the restricted stock incentive plan was allocated to 7855 employees. The total number of shares involved in the stock incentive plan was no more than 848 million shares, accounting for about 2.8% of the company's total shares. On November 6, 2017, Baosteel announced that the board of directors of the company had approved the company's second phase of stock incentives. The announcement shows that Baosteel intends to award 170 million restricted A-share shares, accounting for about 0.8037% of the company's total shares. For the first round, equity incentives will be awarded to no more than 1080 people, including directors, senior managers and key middle managers. The stock incentive plan will use 2018-2020 as the performance appraisal period and will vest at a constant rate from 2019 to 2021.The company has also set up ambitious vesting appraisal conditions for the plan.

In addition to equity incentives, many Chinese companies are also using deferred payments in employee compensation . However, unlike the deferred cash balance plan and performance equity plan used by UBS, most of the deferred payment plans used by Chinese enterprises have a fixed period of time, usually three years; moreover, they do not have equity characteristics, since they only have penalty and have no upward adjustments in future periods. Such plans are not real long-term incentives with equity characteristics and need further improvements.

A necessary condition for the implementation of equity incentive mechanisms is the relative maturity of capital markets. China's capital markets are still in a developmental stage, and the potential moral hazard issue is also more serious than in Western capital markets. Therefore, employee equity incentives based on the stock prices of listed companies has great limitations. For this reason, Chinese companies have made many innovations, and increasing numbers of companies have begun to try partnership systems. Switching to partnerships has dramatically changed the distribution of decision-making rights, performance evaluation and incentive mechanisms in the traditional organizational structure. The relationships between a firm and its employees, between a firm and its customers, and between firms all have to be redesigned. Haier's "micro-enterprises", "Wang Pin steak internal business partnership system", "Fennix Group internal business venture", "Vanke partnership system", and the "Achievement sharing plan" of Biguiyuan are a few examples in this experiment. Among them, Haier's micro-enterprises mechanism has had far-reaching impacts on enterprise decision-making, and the incentive effect is also very significant. Haier divides the whole enterprise into many small ones, where each can be viewed as an investment center. Haier, as a platform, provides different levels of resources and support for different types of micro-enterprises. Each micro-enterprise bears different levels of risk, and the individual remuneration of micro members is linked to unit business profits, rather than to the performance or stock price of the whole company. This method greatly stimulated employee entrepreneurial and innovative ability, integrated the value of employees and users, truly aligned the interests of the shareholders of the company with those of the employees, and achieved a win-win situation. At the same time, because employees fully share the micro - enterprise's risks, employees genuinely pay attention to enterprise risk management. In the past decade, Haier Group has achieved rapid and stable growth, with its revenue increasing from 118.2 billion yuan in 2007 to 201.6 billion yuan in 2016, and its total profit increasing from 1.83 billion yuan in 2007 to 20.3 billion yuan in 2016. The partnership system represented by Haier is an important innovation of Chinese enterprises under existing capital market conditions. It not only avoids problems associated with the volatility and noise of stock prices in capital markets, but also retains the incentive alignment characteristics of equity incentives. Furthermore, it improves the sensitivity and precision of employee performance evaluation, and reduces the compensation cost of enterprises. Of course, financial enterprises have their own characteristics and cannot simply copy these models. However, financial enterprises should also explore and innovate on employee evaluation and incentive mechanisms that are in line with their own industry characteristics.

Conclusion

In management accounting we often say, "You get what you measure." The design of performance evaluation and incentive mechanisms affects the direction and extent of employees' efforts, and affects the company's efficiency. A good incentive mechanism is very important for an enterprise. Ineffective incentive mechanisms are the most important risk faced by many Chinese enterprises, especially financial enterprises.

The most important role of an incentive mechanism with equity characteristics is to align the long-term interests of the managers and the owners of the firm. However, due to the imperfection of China's capital markets and the high noise levels of stock prices, traditional stock option plans and stock incentives only using time as vesting condition are not suitable for large-scale adoption by Chinese enterprises. Chinese firms can combine long-term equity incentives based in stock price and non-equity long term incentives based in financial measures to improve incentive efficiency. In addition to associating the interests of managers with those of owners by granting equity, enterprises can also use many innovative and alternative tools, such as deferred payment and partnership systems.

The core of mechanism design is long-term value creation. If the ROA of China's state-owned non-financial enterprises could have been increased by 1% and the ROA of the banking industry could have been increased by 0.1% in 2017, an additional 1.77 trillion yuan of societal wealth would have been created. Opportunity cost is a risk that most Chinese enterprises, especially state-owned enterprises, do not pay sufficient attention to. It should be a core concern of future mechanism design.

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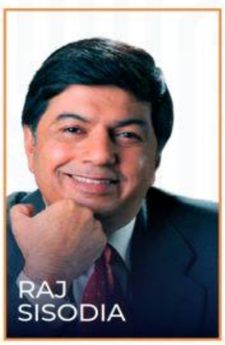

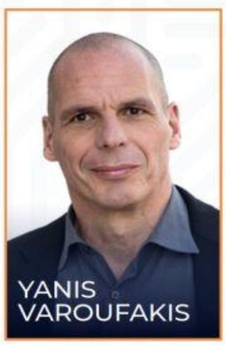

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