Monday, September 14, 2020

Top 10 risk and compliance related news stories and world events that (for better or for worse) shaped the week's agenda, and what is next

Dear members and friends,

What is operational resilience?

The Basel Committee has just defined *operational resilience* as "the ability of a bank to deliver *critical operations* through disruption.

This ability enables a bank to identify and protect itself from threats and potential failures, respond and adapt to, as well as recover and learn from disruptive events in order to minimise their impact on the delivery of critical operations through disruption.

In considering its operational resilience, a bank should take into account its overall risk appetite, risk capacity and risk profile."

The term *critical operations* (according to the Joint Forum's 2006 high - level principles for business continuity) encompasses *critical functions* that include activities, processes, services and their relevant supporting assets, the disruption of which would be material to the continued operation of the bank or its role in the financial system. Whether a particular operation is "critical" depends on the nature of the bank and its role in the financial system.

The term *respective functions* used in this document explicitly refers to the appropriate function(s) within the bank's *three lines of defence*, as described in the Principles for the Sound Management of Operational Risk (PSMOR). These consist of:

(i) business unit management;
(ii) an independent operational risk management function; and

(iii) independent assurance.

Depending on a bank's nature, such as its size, complexity, and risk profile, how these three lines of defence are implemented may vary.

According to the Basel Committee's 2015 corporate governance guidelines:

- *"risk appetite"* is the aggregate level and types of risk a bank is willing to assume, decided in advance and within its risk capacity, to achieve its strategic objectives and business plan,

- *"risk tolerance"* is the variation around the prescribed risk appetite that the bank is willing to tolerate, and

- *"risk capacity"* is the maximum level of risk the financial institution can assume given its current level of resources, before breaching constraints determined by regulatory capital and liquidity needs, the operational environment (e.g. technical infrastructure, risk management capabilities, expertise) and obligations, also from a conduct perspective, to depositors, policyholders, shareholders, fixed income investors, as well as other customers and stakeholders.

Read more at number 2 below.

Best regards,

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Number 1

Leveraging technology to support supervision: challenges and collaborative solutions

Benoît Cœuré, Head of the Bank for International Settlements Innovation Hub, at the Peterson Institute for International Finance, Financial Statement event series.

Good afternoon to you all, and thank you for inviting me to your Financial Statements event series. Let me start by saying that we are in extraordinary times.

The coronavirus (Covid-19) pandemic is a tremendous shock for the global economy, and we have seen lockdowns and containment measures on an unprecedented global scale.

Central banks, supervisors and international financial institutions are seeking to mitigate the immediate impact on the real economy through extraordinary fiscal, monetary and macroprudential measures.

But perhaps the more immediate consequence of the pandemic that has affected governments, central banks, financial institutions and many businesses has been a change in the way we work.

What would have been face-to-face meetings, such as this one today, have almost all been replaced by virtual conferencing.

We are experiencing first-hand global collaboration through technology and platforms.

The Covid-19 pandemic has also accelerated trends in digital innovation that were already under way.

For example, current developments bring to the fore digital payments and underscore the importance of resilient and accessible central bank-operated payment infrastructures that need to withstand a large range of shocks, including pandemics and cyber-attacks.

And expanded use of digital payments can, in turn, fuel a rise in digital lending as companies accumulate consumer data and enhance credit analytics.

If there is a silver lining to this crisis, in just three months we have seen the power and potential of how technology can support and improve the way we work.

This has reinforced that technology is indispensable in our globally connected world.

All of these developments make central bank public goods more important than ever, and central banks need to be at the cutting edge of technology to serve society.

Over recent years, we have seen growing interest from financial institutions and the official sector in the use of technology to support new business models and to solve regulatory and compliance requirements more effectively and efficiently.

"Regtech" refers to the application of financial technology (fintech) for regulatory and compliance requirements and reporting by regulated financial institutions.

"Suptech" is the term for any application of fintech for regulatory, supervisory and oversight purposes.

In many ways, these are two sides of the same coin.

The benefits and opportunities of regtech and suptech for regulated entities and supervisory authorities to improve efficiency, reduce manual processes and make effective use of data are enormous.

As they are more widely adopted, these technologies can enhance diligence and vigilance in risk monitoring and management in real time, improving the resilience and stability of the broader financial system.

And yet challenges remain. In today's remarks, I would like to share with you what we see as the main challenges and how we can address these collectively to build solutions and avoid silos.

The BIS Innovation Hub has been established to spearhead central banks' response to digital innovation. We are building a portfolio of projects in areas relevant to central bank activities across the three Innovation Hub Centres in Hong Kong SAR, Singapore and Switzerland.

The BIS decided last month to expand the Hub's global footprint to include new centres in London, Stockholm (with a group of Nordic central banks), Toronto and Frankfurt/Paris (with the ECB/Eurosystem), to be established over the next two years, as well as a strategic partnership with the Federal Reserve.

Regtech and suptech feature high on our agenda.

Digital innovation knows no borders, and it is therefore the Hub's mission to foster international collaboration and build on the efforts of central banks that have made significant advances in digital innovation.

Partnerships with other stakeholders, such as bank and market supervisors, is critical for this task.

To read more: https://www.bis.org/speeches/sp200819.pdf

Number 2

Basel Committee releases consultative documents on principles for operational risk and operational resilience

- Operational resilience principles aim to increase the capacity of banks to withstand disruptions due to potentially severe events.

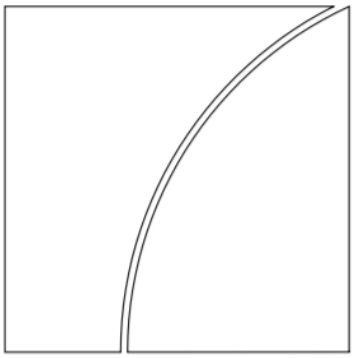
- Updated principles on operational risk focus on change management and information and communication technologies (ICT).

- Covid-19 has raised the importance of operational resilience and mitigating operational risk.

In recent years, the growth of technology-related threats has increased the importance of banks' operational resilience.

The Covid-19 pandemic has made the need to address these threats even more pressing.

Given the critical role played by banks in the global financial system, increasing banks' resilience to absorb shocks from operational risks, such as those arising from pandemics, cyber incidents, technology failures or natural disasters, will provide additional safeguards to the financial system as a whole.



Consultative Document

Principles for operational resilience

Issued for comment by 6 November 2020

August 2020

Recognising that a concerted operational resilience effort may not prevent a significant shock resulting from a specific hazard, the Committee seeks comment on proposed Principles for operational resilience that aim to

mitigate the impact of potentially severe adverse events by enhancing banks' ability to withstand, adapt to and recover from them.

You may visit: https://www.bis.org/bcbs/publ/d509.pdf

The Committee is of the view that operational resilience is also an outcome of effective operational risk management.

Activities such as risk identification and assessment, risk mitigation (including the implementation of controls) and ongoing monitoring work together to minimise operational disruptions and their effects when they materialise.

Given this natural relationship between operational resilience and operational risk, the Committee is proposing updates to its Principles for the sound management of operational risk (PSMOR).

Specifically, the Committee is proposing a limited number of updates to:

(i) align the PSMOR with the recently finalised Basel III operational risk framework;

(ii) update the guidance where needed in the areas of change management and ICT; and

(iii) enhance the overall clarity of the principles document.

The proposed principles for operational resilience set forth in this consultative document not only build upon the proposed updates to the PSMOR, they are largely derived and adapted from existing guidance on outsourcing, business continuity and risk management-related guidance issued by the Committee or national supervisors over a number of years.

By building upon existing guidance and current practices, the Committee is seeking to develop a coherent framework and avoid duplication.

The proposed operational resilience principles focus on governance; operational risk management; business continuity planning and testing; mapping interconnections and interdependencies; third-party dependency management; incident management; and resilient cyber security and ICT.

Comments to the CDs should be submitted by here by Friday 6 November 2020. All comments may be published on the BIS website unless a respondent specifically requests confidential treatment.

To read more: https://www.bis.org/bcbs/publ/d509.pdf

Number 3

EIOPA Financial Stability Report July 2020

During the last months, the Covid-19 outbreak further proved the importance of the Solvency II regulatory framework.

The market-consistent and risk based approach helped insurers to better align capital to risk, build-up resilience and enhance the risk management practices, while the adjustments included for long-term guarantees allowed to partially mitigate market volatility caused by COVID-19.

As of year-end 2019 the insurance sector had a solid and comfortable capital buffer (median SCR ratio of 213%) which helped insurers to withstand the initial severe market shocks experienced with the Covid-19 crisis.

However, a high level of uncertainty on the magnitude of economic disruption increases downside risks going forward.

The COVID-19 has further intensified the preexisiting challenges posed by the prolonged low yield environment, a fundamental risk for both insurance and pension sectors.

Forward by the Chairman

The Covid-19 outbreak further highlighted the importance of the Solvency II regulatory framework.

One the one hand, the market-consistent and risk based approach helps insurers to better align capital to risk, build-up resilience and enhance the risk management practices.

On the other hand, the the adjustments included for long-term guarantees allow to partially mitigate market volatility associated with the Covid-19 outbreak reflected in own funds and/or solvency capital requirements.

A solid and comfortable capital buffer helped insurers to withstand the initial severe market shocks experienced with the Covid-19 crisis. However, a high level of uncertainty on the magnitude of economic disruption and further dissemination of the virus threatening health of European citizens increases downside risks looking ahead.

The prolonged low yield environment has already been a fundamental risk for both insurance and pension sectors and the Covid-19 outbreak further increased its potential.

The forthcoming recession will negatively affect corporate sector profitability, resulting in rating downgrades, increased defaults and unemployment.

In addition, commercial real estate prices are expected to drop by adopting more extensively a work from home arrangement by firms.

Finally, a high interconnectedness of insurers with banks could further support spill-overs of mentioned risks from the real sector to insurers and pension funds.

Strains to demand and insurers' underwriting profitability might take some time to unfold in parallel with the deterioration of the macroeconomic environment.

In addition, some insurers run the risk of becoming involved in lengthy and costly legal battles in relation to claims occurred as a consequence of the lock down measures.

To preserve solvency, it is important that there is no retroactivity implying that insurers face claims that they did not cover.

All these factors might lead to materialisation of the risks on insurers' balance sheet with a substantial lag and high uncertainties.

From the outset of the pandemic, EIOPA has been working closely with national competent authorities to ensure business continuity, financial stability and consumer protection.

Measures, such as recommendations on supervisory flexibility regarding deadlines of reporting and public disclosure are aimed to help insurers continuing to serve their customers.

Furthermore, given the overall uncertainty of the scale and duration of the crisis, EIOPA has urged insurers and pension funds to adopt a prudent approach and mitigate the impact of Covid-19, for example by temporarily suspending all discretionary dividend distributions and share buy backs, with the objective to preserve capital and contribute to financial stability.

Finally, to ensure continuing fair treatments of customers, EIOPA has asked insurers to identify their products affected as a result of Covid-19 and

consider proportionate remedial measures in cases in which there are possible unfair treatment of customers.

The Solvency II regime has some layers of flexibility. If the crisis deepens and if there will be a significant number of companies in difficulty, *EIOPA is prepared to issue a declaration of adverse developments*.

This measure will allow national authorities to extend the recovery period, providing insurers more time to rebuild capital levels if needed. Recovery plans need to be assessed and granted consistently across countries.

There is no doubt that the economy will experience a deep and unprecedented recession. *The high uncertainty on the recovery path needs to be captured by an appropriate forward-looking risk assessment*. In this respect, different recovery scenarios should be captured in the design of next year's European Union-wide insurance stress test.

Gabriel Bernardino

To read more:
https://www.eiopa.europa.eu/sites/default/files/financial_stability/eiopa-financial-stability-report-july-2020.pdf

Number 4

An update on digital currencies

Lael Brainard, Member of the Board of Governors of the Federal Reserve System, at the Federal Reserve Board and Federal Reserve Bank of San Francisco's Innovation Office Hours, San Francisco, California.

It is a pleasure to participate in San Francisco's Innovation Office Hours. The Federal Reserve Bank of San Francisco is a leader of our engagement with the tech community.

And the Federal Reserve's Innovation Office Hours serve as an important forum to engage on innovation in the financial system with financial institutions, fintechs, technology companies, nonprofits, and other stakeholders.

We have benefited from learning about the work you are doing to promote healthy innovation in financial services and payments.

This event covered a number of important topics, including regulatory technology, blockchain, cybersecurity, and digital banking. The breadth of topics and the range of participants speak to the scale and scope of technological innovation in financial services.

It is a testament to widespread investments in technology that we are able to proceed with these kinds of engagements and maintain our operations seamlessly despite the unprecedented shock associated with the COVID-19 crisis.

The COVID-19 pandemic is taking a tremendous toll on communities across America, especially households and small businesses with the least resources to weather the storm.

The COVID-19 crisis is a dramatic reminder of the importance of a resilient and trusted payments infrastructure that is accessible to all Americans.

It was notable that after a sharp reduction in spending early in the COVID-19 crisis, many households increased their spending starting on the day they received emergency relief payments under the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) and continuing for the

following 10 days-especially households with lower incomes, greater income declines, and lower liquid savings.

The urgency with which the CARES Act emergency payments were spent underscores the importance of immediate and trusted access to funds for the many households and businesses that face cash-flow constraints.

That is why the Federal Reserve remains committed to delivering on the FedNowSM Service, which will enable millions of American households and small businesses to get instant access to funds rather than waiting days for checks to clear.

More broadly, banks, fintech companies, and technology firms are all exploring the use of innovative technologies to enhance payments efficiency, expand financial inclusion, speed up settlement flows, and reduce end-user costs.

Digital currencies, including central bank digital currencies (CBDCs), present opportunities but also risks associated with privacy, illicit activity, and financial stability.

The introduction of Bitcoin and the subsequent emergence of stablecoins with potentially global reach, such as Facebook's Libra, have raised fundamental questions about legal and regulatory safeguards, financial stability, and the role of currency in society.

This prospect has intensified calls for CBDCs to maintain the sovereign currency as the anchor of the nation's payment systems. Moreover, China has moved ahead rapidly on its version of a CBDC.

With these important issues in mind, the Federal Reserve is active in conducting research and experimentation related to distributed ledger technologies and the potential use cases for digital currencies.

Given the dollar's important role, it is essential that the Federal Reserve remain on the frontier of research and policy development regarding CBDCs. As part of this research, central banks are exploring the potential of innovative technologies to offer a digital equivalent of cash.

Like other central banks, we are continuing to assess the opportunities and challenges of, as well as the use cases for, a CBDC, as a complement to cash and other payments options.
There continues to be strong demand for U.S. currency, and we remain committed to ensuring the public has access to a range of payments options.

We have been conducting in-house experiments for the last few years, through means that include the Board's Technology Lab, which has been building and testing a range of distributed ledger platforms to understand their potential opportunity and risk.

This multidisciplinary team, with application developers from the Federal Reserve Banks of Cleveland, Dallas, and New York, supports a policy team at the Board that is studying the implications of digital currencies on the payments ecosystem, monetary policy, financial stability, banking and finance, and consumer protection.

To enhance the Federal Reserve's understanding of digital currencies, the Federal Reserve Bank of Boston is collaborating with researchers at the Massachusetts Institute of Technology in a multiyear effort to build and test a hypothetical digital currency oriented to central bank uses.

The research project will explore the use of existing and new technologies as needed. Lessons from this collaboration will be published, and any codebase that is developed through this effort will be offered as open-source software for anyone to use for experimentation.

The objectives of our research and experimentation across the Federal Reserve System are to assess the safety and efficiency of digital currency systems, to inform our understanding of private-sector arrangements, and to give us hands-on experience to understand the opportunities and limitations of possible technologies for digital forms of central bank money.

These efforts are intended to ensure that we fully understand the potential as well as the associated risks and possible unintended consequences that new technologies present in the payments arena.

Separately, a significant policy process would be required to consider the issuance of a CBDC, along with extensive deliberations and engagement with other parts of the federal government and a broad set of other stakeholders.

There are also important legal considerations. It is important to understand how the existing provisions of the Federal Reserve Act with regard to currency issuance apply to a CBDC and whether a CBDC would have legal tender status, depending on the design.

The Federal Reserve has not made a decision whether to undertake such a significant policy process, as we are taking the time and effort to understand the significant implications of digital currencies and CBDCs around the globe.

In addition to these experiments, the Federal Reserve continues to collaborate with and learn from other central banks. We are participating in the CBDC coalition of central banks.

While each country will make decisions on whether to issue and how to design a CBDC based on its own domestic legal framework and financial and economic context, we benefit from collaboration on CBDC research.

Sharing lessons learned, jointly conducting experiments, and bringing diverse expertise to bear helps us make progress in developing potential approaches to address challenging hurdles, such as threats to cybersecurity, counterfeiting and fraud, and anti-money laundering, to name a few, as well as on shared goals, such as increasing the ease and efficiency of cross-border transactions.

Since financial and payments systems share extensive cross-border linkages, a poorly designed CBDC issued in one jurisdiction could create financial stability issues in another jurisdiction.

A cyberattack on a CBDC arrangement in one jurisdiction could create domestic financial stress, which could, in turn, affect linked economies or have broader effects if confidence in certain technologies or payment mechanisms is eroded.

More broadly, the Federal Reserve looks forward to increased international engagement on matters related to innovation and technological change that impact central banks and those we serve.

Our new initiative with the Bank of International Settlement's Innovation Hub, through an innovation center at the Federal Reserve Bank of New York, will provide a useful venue for increased cooperation and exchange.

Let me conclude by noting that innovation is central to our work. We remain committed to understanding how technological advances can help the Federal Reserve carry out our core missions, as well as how they are changing the ways that banks, payments, and financial markets operate.

For example, we are leveraging machine learning, natural language processing, and other artificial intelligence tools to help us analyze data, and we are monitoring how financial institutions use these tools in their decisionmaking.

We are expanding our use of cloud computing to enhance our operations, and we continue to enhance our cybersecurity tools to strengthen our cyber posture.

These and other technologies are fundamentally changing every aspect of our work, and the Federal Reserve remains optimistic about the power of healthy innovation to improve the resilience, efficiency, and inclusiveness of our financial system when the appropriate safeguards are in place.

Number 5

Conversations with Audit Committee Chairs: COVID-19 and the Audit

As part of the Public Company Accounting Oversight Board's (PCAOB) strategic goal of enhancing transparency and accessibility through proactive stakeholder engagement, the Board has committed to engaging more directly and more often with audit committees.

In 2019, we reached out to nearly 400 audit committee chairs of U.S. issuers whose audits we inspected and offered them the opportunity to speak with us.

We reported out on those discussions in Conversations with Audit Committee Chairs: What We Heard & FAQs. You may visit: https://pcaobus.org/Pages/AuditCommitteeMembers.aspx

We have continued this outreach to audit committee chairs during our 2020 inspections. Given the unprecedented challenges for auditors, audit committees, and issuers created by the COVID-19 pandemic, we asked audit committee chairs how they are thinking about the effect of COVID-19 on financial reporting and the audit as they perform their oversight duties.

What we've heard has depended largely on how the pandemic has affected different industries and issuers. While some audit committee chairs said the effect of COVID-19 on the audit had not been significant to date, others shared that the magnitude of the impact of COVID-19 quickly surpassed their expectations.

Most audit committee chairs indicated that they are contending with new or increased risks associated with the effects of COVID-19. Audit committee chairs from across industries have identified a wide range of topics that present increased risk—both related to financial reporting and the audit as well as other issues—that they are focusing on at this time.

For many, these include cybersecurity, employee safety and mental health, going concern, accounting estimates, impairments, international operations, and accounting implications of the Coronavirus Aid, Relief, and Economic Security (CARES) Act.

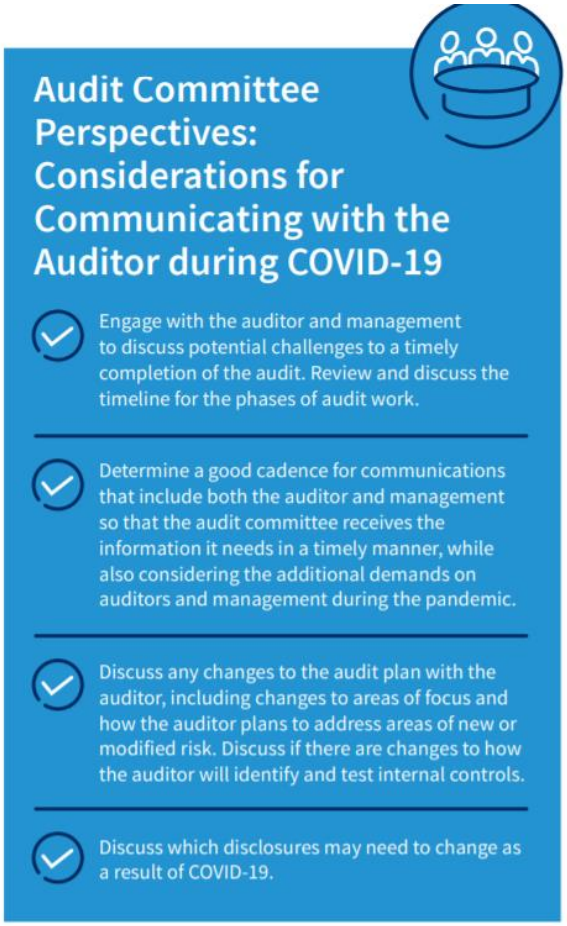
This document summarizes certain of the common themes we heard from audit committee chairs related to the effects of COVID-19 and the audit through the first half of the year.

We plan to share general takeaways from our audit committee conversations at the end of the year.

Please note that the PCAOB does not require or necessarily endorse what we heard from audit committee chairs.

We share their perspectives to offer increased transparency into our activities and to further our ongoing efforts to provide audit committees with timely and useful information.

To read more:
https://pcaobus.org/Documents/Conversations-with-Audit-Committee-Chairs-Covid.pdf



Number 6

National Security Agency (NSA), Federal Bureau of Investigation (FBI) - Cybersecurity Advisory: Russian GRU 85th GTsSS Deploys Previously Undisclosed Drovorub Malware

The Russian General Staff Main Intelligence Directorate (GRU) 85th Main Special Service Center (GTsSS), military unit 26165, is deploying previously undisclosed malware for Linux® systems, called Drovorub, as part of its cyber espionage operations.

GTsSS malicious cyber activity has previously been attributed by the private sector using the names Fancy Bear, APT28, Strontium, and a variety of other identifiers.

This publication provides background on Drovorub, attribution of its use to the GTsSS, detailed technical information on the Drovorub malware, guidance on how to detect Drovorub on infected systems, and mitigation recommendations.

Information in this Cybersecurity Advisory is being disclosed publicly to assist National Security System owners and the public to counter the capabilities of the GRU, an organization which continues to threaten the United States and U.S. allies as part of its rogue behavior, including their interference in the 2016 U.S. Presidential Election as described in the 2017 Intelligence Community Assessment, Assessing Russian Activities and Intentions in Recent US Elections (Office of the Director of National Intelligence, 2017).

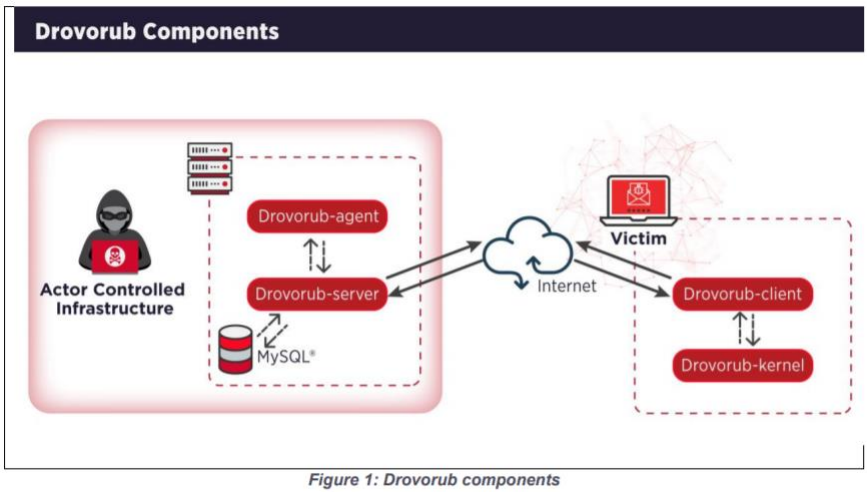


Figure 1: Drovorub components

Drovorub is a Linux malware toolset consisting of an implant coupled with a kernel module rootkit, a file transfer and port forwarding tool, and a Command and Control (C2) server.

When deployed on a victim machine, the Drovorub implant (client) provides the capability for direct communications with actor-controlled C2 infrastructure; file download and upload capabilities; execution of arbitrary commands as "root"; and port forwarding of network traffic to other hosts on the network.

A number of complementary detection techniques effectively identify Drovorub malware activity. However, the Drovorub-kernel module poses a challenge to large-scale detection on the host because it hides Drovorub artifacts from tools commonly used for live-response at scale.

While packet inspection at network boundaries can be used to detect Drovorub on networks, host-based methods include probing, security products, live response, memory analysis, and media (disk image) analysis. Specific guidance for running Volatility®, probing for file hiding behavior, Snort® rules, and Yara® rules are all included in the Detection section of this advisory.

To prevent a system from being susceptible to Drovorub's hiding and persistence, system administrators should update to Linux Kernel 3.7 or later in order to take full advantage of kernel signing enforcement.

Additionally, system owners are advised to configure systems to load only modules with a valid digital signature making it more difficult for an actor to introduce a malicious kernel module into the system.

To read more:
https://media.defense.gov/2020/Aug/13/2002476465/-1/-1/0/CSA_DROVORUB_RUSSIAN_GRU_MALWARE_AUG_2020.PDF

Number 7

Annual Report on the Interim Inspection Program Related to Audits of Brokers and Dealers

The Public Company Accounting Oversight Board (PCAOB) has completed its 2019 inspections of auditors of brokers and dealers.

This Annual Report on the Interim Inspection Program Related to Audits of Brokers and Dealers provides a summary of inspection results as well as information auditors can use to improve audit quality.

There were 411 public accounting firms (firms) registered with the PCAOB that performed audits of broker-dealers registered with the U.S. Securities and Exchange Commission (SEC) this inspection period, and we selected 66 of these firms for inspection.

Our inspections assess firms' compliance with professional standards and applicable rules and regulations, with a focus on risks to customers of broker-dealers.

While our 2019 inspections revealed modest improvement in the rate of deficiencies, we continue to see a high rate of deficiencies in certain areas of engagement performance.

We also continue to see that firms that audit more than 100 broker-dealers generally have lower percentages of deficiencies compared to other firms.

We have observed similar deficiencies despite limited changes to auditing and attestation standards other than those involving related parties and the auditor's report.

The recurring deficiencies described in this annual report highlight potential areas of improvement for all firms, whether or not they were recently inspected.

While some have demonstrated progress, other firms have not taken sufficient steps to address audit and attestation engagement performance.

We expect firms to take meaningful actions to address these recurring deficiencies. All firms need to evaluate how they can improve their system of quality control.

A strong system of quality control can serve to prevent engagement deficiencies from occurring.

Firms should take what was learned from these 66 firm inspections, including the examples of effective procedures, and consider how to proactively implement improvements, rather than reacting as a result of a PCAOB inspection.

Auditors of brokers and dealers should focus their efforts on improving their system of quality control and their engagement performance in all areas described in this annual report, but particularly in these areas where we continue to observe frequent deficiencies:

1. Examination Engagements – We frequently observe insufficient testing of the design and operating effectiveness of internal controls over compliance.

We believe that focusing on the risks associated with a control will help firms develop appropriate testing procedures and lead to further improvement in this area. In 2019, examination engagements with deficiencies decreased to 69% from 75%.

2. Review Engagements – Inquiries are required on all review engagements, and firms should document the results of inquiries made.

Firms should also take into account evidence from financial statement audits, including evidence that appears to contradict assertions made in exemption reports, when planning, performing, and evaluating the results of review engagements. In 2019, review engagements with deficiencies decreased to 51% from 54%.

3. Financial Statement Audits – Revenue and financial statement presentation and disclosure are commonly reviewed areas during an inspection.

We believe that obtaining a sufficient understanding of internal control over financial reporting, and other risk assessment procedures, will help firms clearly identify and assess the risks of material misstatement in these areas, and prevent deficiencies from occurring in these areas of the audit.

We encourage firms to consider the details of our observations in these areas as they conduct broker-dealer audits. In 2019, financial statement audits with deficiencies decreased to 71% from 76%. The information contained in this annual report may be helpful for other stakeholders, including management and the audit committee (or equivalent body) of the

broker-dealers, when engaging with the firms regarding audit quality and broker-dealer financial reporting.

To read more:
https://pcaobus.org/Inspections/Documents/2019-Broker-Dealer-Annual-Report.pdf

Number 8

Accelerate the normalization of economic activity and further reform and open up the financial system

Guo Shuqing, Party Secretary and Deputy Governor of the People's Bank of China and CBIRC Chairman, at the 12th Lujiazui Forum "Shanghai International Financial Center 2020: New Starting Point, New Mission, New Vision", Shanghai.

Honorable Secretary Li Qiang, Acting Mayor Gong Zheng, Chairman Yi Huiman, Ladies and Gentlemen,

Good morning! It is a pleasure to attend the Lujiazui Forum 2020. To begin with, I would like to express my warm congratulations to you for making this occasion possible. This year is unusual. Though we are wide apart exchanging ideas through the video link, our hearts are still together.

In the past year, Shanghai achieved fresh results in its economic and social development, making new progress in building an international financial center.

In February this year, central government agencies responsible for the financial sector, jointly with the Shanghai Municipal Government, released the Opinions on Further Accelerating the Development of Shanghai as an International Financial Center and Providing Financial Support for the Integrated Development of the Yangtze River Delta, in which 30 concrete policy measures were proposed and are currently being specified and implemented.

Hopefully we can see the results sometime soon. Since the COVID-19 pandemic broke out in the European and American countries, the global economy and financial sector has suffered from a calamity never seen in a century.

Nevertheless, when we talk about crisis, we know there are also opportunities hidden inside. We believe that Shanghai is bound to overcome difficulties and seize opportunities to play a greater role in the international financial system.

The coronavirus has caught us all by surprise and has had an unprecedentedly impact on China's economic and social development. In the first quarter this year, China's GDP witnessed a 6.8 percent decline. Some enterprises ran into multiple difficulties including production suspension, revenue slump and financial stress. For the import and export industry, problems of disrupted supply, shortage of orders and blocked channels cast a shadow on their survival.

General Secretary Xi Jinping has attached great importance to coordinating COVID-19 containment and economic and social development. He delivered numerous important speeches and personally took charge and made arrangements.

The government agencies responsible for the financial sector have resolutely implemented the decisions and arrangements of the CPC Central Committee and the State Council to release numerous policy measures, pledging full support to offset the adverse impact of the pandemic.

The monetary policy is practiced in a more flexible and appropriate manner, and the regulatory policy keenly focuses on the greatest risks. In the first five months of this year, RMB loans issued to the real economy saw an increase of over RMB10 trillion, which is over RMB2 trillion more than the increase in the same period last year.

At end-May, outstanding broad money supply (M2) increased by 11.1 percent year on year, and outstanding aggregate financing to the real economy (AFRE) posted a growth rate of 12.5 percent year on year. The financial market and the financial system demonstrated great resilience and endurance.

In the next step, the government agencies responsible for the financial sector will act upon the requirements laid out by Vice Premier Liu He in his remarks just now, continue to focus on keeping employment and businesses stable, ensure stability on the six fronts (employment, the financial sector, foreign trade, foreign investment, domestic investment and expectations) and carry out the task of maintaining security in the six areas (employment, the basic livelihood of the people, market entities, food and energy, the stability of supply and industrial chains, and the smooth functioning of grassroots administration), to accelerate the normalization of economic activity

First, more efforts will be made to encourage cooperation between banks and governments. The damage caused by the pandemic is an irresistible external force from which no market entity can avoid on its own. In this circumstance, governments at all levels have both the responsibility and the

capacity to provide information on the regional economy and enterprises in the region to banking institutions.

Quite a number of heavily-hit enterprises have run into temporary difficulties. However, they have favorable market prospects and solid credit records.

Banks and governments should take active steps to negotiate and determine rescue plans, and especially ensure that emergency financing is well in place for rolling over maturing debt while guarding against moral hazards.

Efforts should be made so that fiscal and financial measures at multiple levels are in mutual support and close cooperation. Banks should introduce more collateral-free credit products featuring low interest rates, while multiple levels of the government should share costs and losses through interest and guarantee subsidies.

To bolster investment, governments should raise as needed the proportion of special local government bonds that can be used as capital for projects, increase support with bank capital, and translate into physical project progress as soon as possible.

Second, policy finance will be further leveraged in countercyclical adjustments. This year, the total credit line of policy banks registered an annual growth of nearly RMB1 trillion, and bond issuance will also increase, boosting available funds by a large margin.

Additionally, China Development Bank (CDB) and the Export-Import Bank of China (China Exim Bank) arrange special funds of RMB100 billion to help market entities overcome difficulties.

More than RMB100 billions of on-lending will be mainly provided to small and medium-sized banks, especially Internet-based banks, so as to ease financing difficulties and reduce financing costs for micro and small businesses (MSBs). The coverage of the government financing guaranty will be expanded and guaranty fees reduced for a reasonable sharing of risk losses.

Third, insurance will better play its unique role in resisting risks. Efforts will be made to expand the coverage of insurance against risks and increase the supply of business interruption insurance and export credit insurance products. A greater variety of insurances will be introduced for weak links such as pandemic containment, disaster relief, agriculture and rural areas.

To support reconstruction in the aftermath of the pandemic, the amount and efficiency of settlement of claims should be increased to promptly provide all liable compensations to the individuals and enterprises inflicted in the pandemic, so that they can receive the compensations at the earliest time possible and resume production and consumption.

Insurers should increase investment in medium- and long-term corporate bonds. The average duration of insurance funds is 13 years.

At present, outstanding insurance funds amount to nearly RMB20 trillion, of which only RMB2.2 trillion is invested in corporate bonds, reflecting great potential. Insurers can use more funds to purchase medium- and long-term corporate bonds, especially those issued by enterprises in the industries that are in need of a huge amount of medium- and long-term funds, such as telecommunications, transport, new and traditional infrastructure.

Fourth, the capital market will be supported to play a more positive role in a wider range of areas. Since the beginning of this year, the volume of bond and equity financing has accounted for 35.9 percent of the increase in China's AFRE. At present, by market value, China has the world's second largest bond market and stock market.

China Banking and Insurance Regulatory Commission (CBIRC) plans to release six measures in the near future to support capital market development.

First, we will introduce new institutional investors, by approving the establishment of more wealth management subsidiaries of banks and insurance asset management companies and allowing foreign specialized institutions to establish foreign-controlled wealth management companies.

Second, we will step up the issuance of equity asset management products by supporting wealth management subsidiaries to increase the proportion of equity products, trust companies to issue securities investment trust products and insurers to issue portfolio products.

Third, we will promote in-depth cooperation between banks and fund companies as well as between banks and insurers. Banks and their wealth management subsidiaries will be encouraged to enlist more eligible managers of public funds as partners. Research will be conducted on introducing policies concerning insurers' investment in privately offered wealth management products and private equity funds.

Fourth, we will guide commercial banks to advance the orderly disposal of non-standard non-performing assets, and encourage newly-established wealth management subsidiaries to increase securities investment.

Fifth, we will support insurers to ramp up investment in the capital market through direct investment, entrusted investment, public funds and other channels, particularly the equity investment in listed quality enterprises. Sixth, we will practice differentiated and proportion-based regulation on insurers' allocations of equity assets and guide insurers to allocate more funds to equity assets.

Fifth, diversified financial instruments will be employed to smooth and restore the global supply chain. Efforts should be made to increase financing support for enterprises in the international industrial chain, so as to help them expand domestic and overseas markets and raise the proportion of domestic sale of export products.

Export enterprises should be bolstered to resume business and trade exchanges with foreign partners at an early date, to stabilize export orders through funding measures such as buyer's credit financing, and to leverage export credit insurance share risk losses.

Significant steps should be taken to vigorously advance the supply chain finance, to give priority to the financial needs of leading enterprises and key links, and to smooth and stabilize the upstream and downstream supply chains.

The COVID-19 pandemic has not only seriously impacted China, but also taken a great toll on most other countries across the world. According to the forecasts of some international organizations, the developed economies will plunge into the worst recession since World War II and the emerging markets will contract for the first time in nearly 60 years. In the face of such a calamity, all countries in the world should shelve differences for close cooperation.

The global system of labor division was gradually established and has evolved after decades of efforts. It is the fruit of the close cooperation of countries following market rules and development trend, and also plays a great role in promoting the world's economic and social development and improving social welfare globally.

Any ideas aiming to "knock down old schemes and put up new ones" or "make a fresh start" are by no means economical. They will greatly damage the common interests of the people in the world and cannot be realized in the short run.

Over the past few decades, China has made growing contributions to global economic growth, and played a crucial role in tiding over several global economic and financial crises.

China has provided an inexhaustible flow of high-quality and inexpensive goods for other countries, which laid an important foundation for sustaining "high consumption and low inflation" in developed economies in the past 20-odd years. With its savings accounting for more than one quarter of the world's total, China has made enormous contributions to the balance between the world's gross savings and total investments and provided a massive amount of surplus funds for world economic growth.

Since the outbreak of the pandemic, the Chinese government has dispatched medical expert teams and donated and exported a large amount of prevention supplies and equipment, all of which are expected to play a key role in helping the world win the battle against COVID-19. According to incomplete statistics, Chinese financial institutions have donated over RMB200 million worth of anti-virus supplies to 70 countries and regions.

In terms of macroeconomic policies, the international community should strengthen communication and coordination and make the greatest efforts to forge synergy, so as to amplify positive effects and reduce adverse impacts.

First, large economies should actively consider the spillover effects of their policies and balance internal and external impacts. As the world economy has been highly integrated today, communication and coordination with other countries should be enhanced when formulating and introducing policies, so as to smooth out spillover risks and jointly safeguard the overall interests of the international community.

Developed countries like the US, European countries and Japan have a particularly substantial impact on less-developed countries both adjacent and beyond. In the dollar-dominated international monetary system, the US Federal Reserve System (Fed), to some extent, acts as the world's central bank and plays a big part in the global economic and financial stability.

If the Fed focuses too much on domestic welfare in making policies, the foundation of global financial stability may be undermined and the credit of the US dollar and the US be overdrawn.

Second, we are all aware that this is not the Last Supper, so room must be left for the future. Many countries have rolled out fiscal and financial incentives of unprecedented scale and intensity.

The impacts of the policies were very strong at the outset, but their marginal utility is diminishing. For the time being, we have to coexist with the pandemic for a fairly long time.

As we know, quite a few countries and regions are considering additional incentives. It is recommended that everyone think twice before action and reserve some policy space for the future. China values very much the normal monetary and fiscal policies we are practicing now. We will not flood the economy with liquidity, still less employ deficit monetization or negative interest rates.

Third, there is no free lunch. How could so many central banks fire up printing presses to print an unlimited amount of money? As early as more than 2,000 years ago, both China and Europe suffered from economic and social crises arising from the governments' unrestrained coinage of metal into money, not to mention a number of disasters the human society has undergone due to similar reasons after the introduction of paper bills. Financial professionals must understand that a price must be paid for any blank check.

Fourth, a resilient financial system is usually a reflection of economic strength. However, while the real economy has not restarted yet, the stock market has been surging. This is inexplicable. The international financial market is running counter to the real economy, suggesting an unprecedentedly marked distortion. "Internal debt is not debt, but external debt is debt. For the US, even external debt is not debt," held some foreign experts. It seemed to be the case for quite some time in the past, but can it last long in the future? The worry is hopefully unwarranted.

The **fifth** issue is whether inflation can be wiped out from the world economy, just like a plague can be relieved by a special medicine. The rise of overall prices in major economies is not evident yet at this moment. However, considering that it still takes a long period of time for the global supply chain to recover, the costs of factors of production will continue to increase in the future.

Besides, many countries are continuously boosting demand, which may bring about changes to the mechanism of derivative deposit creation. All these may lead to the resurgence of inflation.

In addition, one more thing to consider is how to phase out massive stimulus policies in the future. When a large-scale stimulus policy is introduced, everyone is cheering. It may be very painful at the time of exit. The impact of the "quantitative easing (QE)" policy launched in 2008 has not completely dispersed so far.

I wish to take this opportunity to stress that, China will, as always, unswervingly deepen the reform and enhance the opening-up of the financial sector. We will work to create a market-oriented, law-based and internationalized business environment, improve relevant laws and regulations, and advance the construction of the financial infrastructure.

Domestic and foreign institutions will be encouraged to cooperate on product design, equity investment, corporate governance, talent cultivation, etc., so as to advance the participation of foreign capital in the Chinese market. Steps will be taken to steadily push forward RMB internationalization, gradually improve the settlement, trading and reserve functions of RMB, and advance the free use of RMB.

Support will be offered to regional financial reform and opening-up, especially to the China (Shanghai) Pilot Free Trade Zone (SHFTZ). As an international financial center, Hong Kong boasts unique advantages and abundant resources and is fully capable of playing a bigger role.

At present, as Shanghai is trying to build itself into an international financial center, Shanghai and Hong Kong can establish closer ties, strengthen exchanges, complement each other and make progress together. We will also keep close communication with Hong Kong financial regulators to provide diversified services and create more favorable conditions for consolidating Hong Kong's position as an international financial center and deepening the financial cooperation between Shanghai and Hong Kong.

Finally, I wish the Forum a complete success, and I hope the development of Shanghai as an international financial center be brought to a new height!

Thank you!

Number 9

NIST Asks A.I. to Explain Itself

Technical agency proposes four fundamental principles for judging how well AI decisions can be explained.

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

It's a question that many of us encounter in childhood: "Why did you do that?" As artificial intelligence (AI) begins making more consequential decisions that affect our lives, we also want these machines to be capable of answering that simple yet profound question. After all, why else would we trust AI's decisions?

This desire for satisfactory explanations has spurred scientists at the National Institute of Standards and Technology (NIST) to propose a set of principles by which we can judge how explainable AI's decisions are.

Their draft publication, Four Principles of Explainable Artificial Intelligence (Draft NISTIR 8312), is intended to stimulate a conversation about what we should expect of our decision-making devices. You may visit: https://www.nist.gov/system/files/documents/2020/08/17/NIST%20Explainable%20AI%20Draft%20NISTIR8312%20%281%29.pdf

The report is part of a broader NIST effort to help develop trustworthy AI systems. NIST's foundational research aims to build trust in these systems by understanding their theoretical capabilities and limitations and by improving their accuracy, reliability, security, robustness and explainability, which is the focus of this latest publication.

The authors are requesting feedback on the draft from the public — and because the subject is a broad one, touching upon fields ranging from engineering and computer science to psychology and legal studies, they are hoping for a wide-ranging discussion.

"AI is becoming involved in high-stakes decisions, and no one wants machines to make them without an understanding of why," said NIST electronic engineer Jonathon Phillips, one of the report's authors. "But an explanation that would satisfy an engineer might not work for someone with a different background. So, we want to refine the draft with a diversity of perspective and opinions."

An understanding of the reasons behind the output of an AI system can benefit everyone the output touches. If an AI contributes to a loan approval

decision, for example, this understanding might help a software designer improve the system. But the applicant might want insight into the AI's reasoning as well, either to understand why she was turned down, or, if she was approved, to help her continue acting in ways that maintain her good credit rating.

According to the authors, the four principles for explainable AI are:

- AI systems should deliver accompanying evidence or reasons for all their outputs.

- Systems should provide explanations that are meaningful or understandable to individual users.

- The explanation correctly reflects the system's process for generating the output.

- The system only operates under conditions for which it was designed or when the system reaches a sufficient confidence in its output. (The idea is that if a system has insufficient confidence in its decision, it should not supply a decision to the user.)

While these principles are straightforward enough on the surface, Phillips said that individual users often have varied criteria for judging an AI's success at meeting them. For instance, the second principle — how meaningful the explanation is — can imply different things to different people, depending on their role and connection to the job the AI is doing.

"Think about Kirk and Spock and how each one talks," Phillips said, referencing the Star Trek characters. "A doctor using an AI to help diagnose disease may only need Spock's explanation of why the machine recommends a particular treatment, while the patient might be OK with less technical detail but want Kirk's background on how it relates to his life."

Phillips and his co-authors align their concepts of explainable AI to relevant previous work in artificial intelligence, but they also compare the demands for explainability we place on our machines to those we place on our fellow humans. Do we measure up to the standards we are asking of AI? After exploring how human decisions hold up in light of the report's four principles, the authors conclude that — spoiler alert — we don't.

"Human-produced explanations for our own choices and conclusions are largely unreliable," they write, citing several examples. "Without conscious

awareness, people incorporate irrelevant information into a variety of decisions from personality trait judgments to jury decisions."

However, our awareness of this apparent double standard could eventually help us better understand our own decisions and create a safer, more transparent world.

"As we make advances in explainable AI, we may find that certain parts of AI systems are better able to meet societal expectations and goals than humans are," said Phillips, whose past research indicates that collaborations between humans and AI can produce greater accuracy than either one working alone. "Understanding the explainability of both the AI system and the human opens the door to pursue implementations that incorporate the strengths of each."

For the moment, Phillips said, the authors hope the comments they receive advance the conversation.

"I don't think we know yet what the right benchmarks are for explainability," he said. "At the end of the day we're not trying to answer all these questions. We're trying to flesh out the field so that discussions can be fruitful."

NIST is accepting comments on the draft until October 15, 2020; for more details, visit NIST's webpage on AI explainability at: https://www.nist.gov/topics/artificial-intelligence/ai-foundational-research-explainability

Number 10

Episode 31: Science 2.0

In this thematic episode of the Voices from DARPA podcast, three program managers discuss the possibility that emerging technologies in the arena of artificial intelligence (AI) are converging toward an "artificial science" toolset that could open an era we might designate as Science 2.0.

The prospect of AI scientists making Nobel-prize-caliber discoveries is not around the corner, but it is a distinct possibility for the future, suggests program manager Jiangying Zhou of the agency's Defense Sciences Office (DSO).

On the way toward that ideal, adds program manager Joshua Elliott of the Information Innovation Office (I2O), we are likely to rely on scientifically-minded AI tools to pump up the efficiency of scientific discovery and to tap into the vast and growing reservoirs of data, which biological minds might not be as suited to make sense of as AI ones.

For Bartlett Russell, also of DSO, perhaps the most important advance during the evolution toward a Science 2.0 era will reside in the use of AI tools that enable more people than ever to embrace the scientific enterprise.

The more minds doing science, she says, the more discovery we can expect.

Blubrry (podcast host): https://blubrry.com/voices_from_darpa/65777883/episode-31-science-20/

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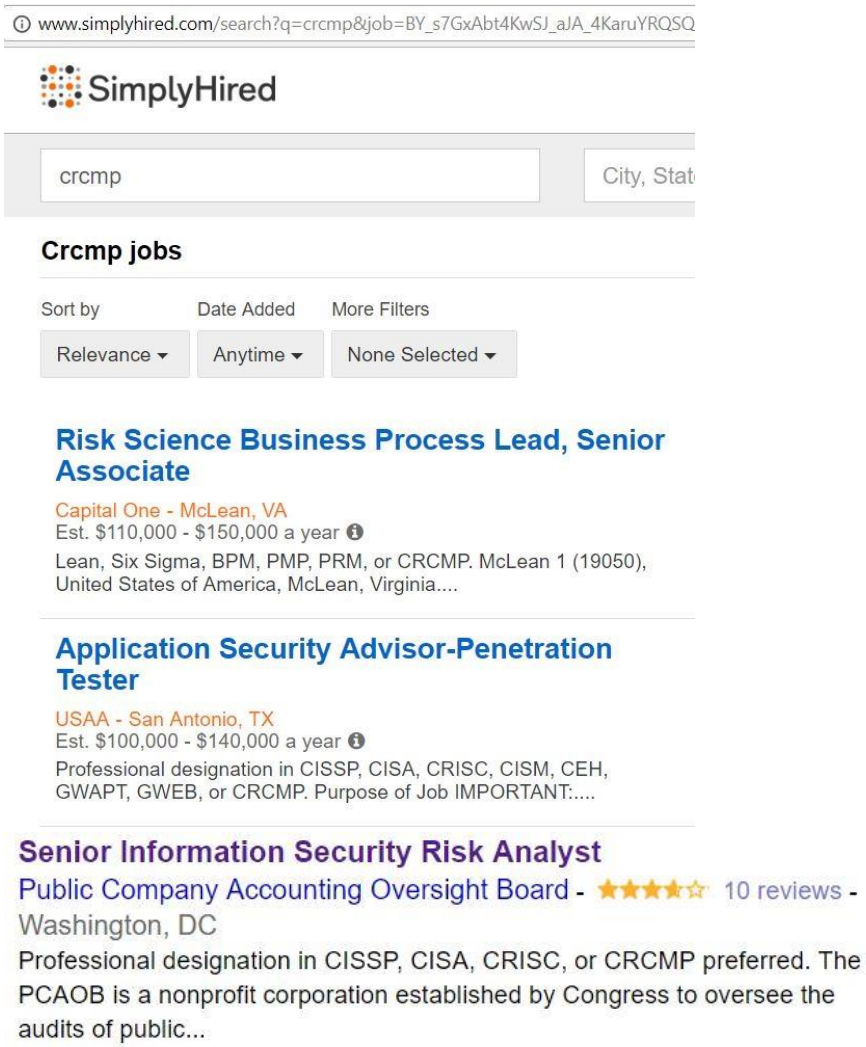

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