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A NEWSLETTER OF THE FINANCE LAB

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Indian Institute of Management Calcutta

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Editorial

In the first article, the author highlights two issues of Budget 2019 which have not seen enough deliberations. *First*, lower rate of tax for companies with turnover up to Rs.400 crore; *second*, tax on share buyback by listed companies. The second article will be focusing on how the “Blockchain” wave has impacted the strategy of a firm and the sentiment of an investor investing in cryptocurrency market. The third article looks on a discussion paper published by RBI in February 2019, on proposed compensation guidelines for material risk takers in Indian banks, which includes the CEO and Whole-time directors. The author shows how such a rule can fundamentally transform strategy formulation and decision making at banks. In the fourth article of this issue, the author tries to determine if RBI has excess capital, and if so, how much. He begins with comparing RBI’s actual total economic capital with its total Value at Risk (VaR), given an increasing order of market stress/shocks, including a Black Swan market shock, to the RBI balance sheet. In the fifth article, the author questions how far an economist’s prescription differs from astute common sense – there is no objective measure for common sense! The author concludes that what seems to bring success in the real world of economic policy making is a good mix of economics, common sense and politics. The last piece takes an initial look at all deals by U.S. institutions that acquired any type of stake in either China or India and presents a side-by-side comparison between these activities. The author’s analysis includes joint ventures, minority stakes, majority stakes, and outright mergers and acquisitions in either country between the years 1991 and 2018.

You may send your comments and feedback on this issue to ashok@iimcal.ac.in

Happy reading!

Ashok Banerjee

Direct Tax in the Union Budget 2019: Two areas of Concern

Ashok Banerjee



Ashok Banerjee, Ph.D., is Professor, Finance and Control, Indian Institute of Management Calcutta (IIM-C). He is also the faculty in-charge of the Financial Research and Trading Lab at IIM-C. His primary research interests are in areas of Financial Time Series, News Analytics and Mergers & Acquisitions.

Hon'ble Union Finance Minister had her task cut out when she was chosen to handle the finance portfolio. It was a tough task- she had to learn the art of budget making in a month's time. Therefore, one must give her credit for doing a reasonably good job. Two important and welcome announcements in the budget are: (a) tax benefit on affordable housing; and (b) tax incentive on electric vehicle.

Lots have been written on the Budget 2019. I wish to highlight on two issues which, though talked about, have not seen enough deliberations. *First*, lower rate of tax for companies with turnover up to Rs.400 crore; *second*, tax on share buyback by listed companies.

Corporate Tax: Implications for Labour Market

The maximum marginal rate of income tax for super-rich in India, having an annual total income above Rs. 5 crore (Rs.50 million), has been raised to 42.74% (*see Table 1*). If one compares the new effective rate in India with some other countries, one finds that there are countries with even higher rate of super-rich tax (e.g., in Germany it is 45%). Therefore, the super-rich in India should not complain. But citizens in Germany (both rich and poor) are well covered by public and private health care system at much affordable costs, which is not the case in India. However, I am not going to compare, in this piece, the marginal tax rates across countries and thereby justify or criticize imposition of super-rich tax.

Table 1: Super-rich Tax Rate in India

Description	Earlier	Now	Earlier	Now
For income above (Rs. Lakhs)	200	200	500	500
Tax rate	30%	30%	30%	30%
Surcharge	15%	25%	15%	37%
Health and Education Cess	4%	4%	4%	4%
Maximum Marginal Tax Rate	35.88%	39.00%	35.88%	42.74%

Note: Cess is levied on the sum of income tax and surcharge amount.

One needs to look at the new super-rich tax on salaried individuals and liberal corporate tax on domestic companies with an annual turnover up to Rs.400 crores (4 billion) together. How big is the super-rich pool in India? One source¹ mentioned that only 150,000 tax payers have declared annual income of over Rs. 1 crore (10 million) during 2018-19 (an increase of 69% over the past five years) and most of them are salaried individual. This amounts to 0.1% of the total population of 1.2 billion Indians. Contrast this with the number of Indian companies with an annual turnover of less than Rs. 400 crore. According to our Finance Minister, this is 99.3% of the total number of registered companies (about 800,000) in India. Thus, majority of the tax-paying companies would benefit from this generous corporate tax rate. Last year, the liberal tax rate of 25% was applicable for companies with annual turnover up to Rs. 250 crore. More number of companies are now brought within the lower tax net of 25%. The idea was to provide relief to small enterprises. But, does it really help? How much of the tax benefit has been ploughed back for asset or job creation?

The marginal tax rate for these small companies would come to about 29% inclusive of surcharge and health and education cess. Is it going to help the startups? Not really as majority of the startups are loss-making and hence do not pay corporate tax. Contrast this with the maximum marginal tax rate of 42.74% for a salaried individual whose annual income is just above Rs.5 crore. Will it not lead to tax arbitrage? A salaried employee, with an annual salary above Rs. 5 crore (or even Rs. 2crore) decides to resign from full-time employment and then joins the same company as a consultant for the same fee. Meanwhile, she forms a consulting company for this purpose. She will enjoy a tax benefit of close to 14% (42.74%-29%) on her total income. The company which engages her as a consultant will continue to enjoy usual tax benefit on the professional charges paid. Also, she may pass on a part of the arbitrage profit to the company (her previous employer) and lower her professional charges. The tax benefit to the new consultant would even be larger. While she was a salaried employee, she would pay tax on her total income (after usual deductions available under section 80C and others). Note that she would not enjoy additional tax benefit on house property as the property value should be less than Rs. 50 lakhs, which is very low for any super-rich employee. However, as a consultant company, she can deduct house rent, depreciation and other expenses from her income while estimating her tax liability (*see Table 2*). The effective tax can, therefore, be lower than 29%. In addition, a smart consultant would show most of the 'income' of the consultant as reimbursable expenses in the company's P&L and would reduce overall tax obligations for the consultant.

¹ Business Standard (February 8, 2019). *1.2 bn Indians, but just 150,000 declared income of over Rs 1 crore: CBDT*

Table 2: Tax Liability: Employee Vs. Consultant

	As employee	As consultant
Super rich-employee		
Total income	550	550
Rent of self-occupied house	0	12
Depreciation on motor vehicle	0	0.75
Depreciation on computers	0	0.20
Maximum marginal tax rate	42.74%	29.12%
Tax payable	235.09	156.39

Note: Figures, except tax rate, are in Rs. Lakhs. It is assumed that the consultant is a one-person company (OPC). The tax payable is calculated using the maximum marginal tax rate.

Therefore, the lower tax rate may encourage companies to engage more consultants in place of full-time senior executives. The Companies Act (2013) requires companies to have full-time key management persons (KMP). The corporate employer will definitely have those KPMs and engage other high-paying employees as consultants.

A report² shows that about 64 employees of Infosys have earned more than Rs.1 crore as compensation in the FY 2018. Though a part of the compensation is in the form ESOP (employee stock option plan), yet there are many out of the 64 employees who earn more than Rs. 2 crore salary per annum. Even ESOP is taxed at the time of exercise of the option. Similar high compensation is offered to top employees in many companies in India.

Therefore, the premium labour market (with per head annual salary above Rs. 2 crore) may witness a change in the compensation contracts in view of the difference in the corporate tax rate and the tax rate for the high net worth individuals. The tax arbitrage may prove to be beneficial for the companies in terms of lower labour costs should the individuals decide to pass on some part of the tax benefit to the employer. The individual employees may form a one person company (OPC), which is treated as a private limited company and hence would enjoy the lower corporate tax rate.

Critics say that an honest salaried tax payer is being 'punished' for her honesty.

Tax on Share Buyback

The Hon'ble Finance Minister has introduced a 20% distribution tax on share buyback by listed companies. Until now, such tax was applicable only to unlisted companies. It is claimed that with the introduction of buyback tax,

² Business Today (May 21, 2019). *Infosys' Richie Rich club: Number of executives earning over Rs 1 crore increases to 64 in FY19, says report*

the tax arbitrage (withholding tax on dividend and not on buyback) will end. Now investors will not be taxed on capital gains on buyback. Prior to the new rule, an investor could set off capital gain on buyback against capital losses- this benefit would go. The dividend distribution tax has been kept unaltered at an effective rate of 21.2%- the DDT has to be grossed up and now includes an increased cess of 4%. Therefore, the buyback tax would be almost at par with DDT. It was mentioned³ that companies took advantage of the loophole in the tax laws and indulged in massive share buyback as a preferred route to return cash to shareholders as against cash dividend (see Table 3). There was indeed a huge spurt in both the number and value of share buybacks in India since 2016. In fact, 82% of the value of shares bought back in the past 18 years happened in the last three years. So, there seems to be some justification for the imposition of the new tax on share buyback.

Earlier, an average investor, whose annual income from dividend would not exceed Rs.1 million, would not pay any tax on her dividend income and pay only a capital gain tax of 10% on amount received through share buyback via stock exchange. The recent changes in the tax laws do not affect that marginal investor. But it seriously affects mutual funds and large investors. Mutual fund investors are already at a disadvantage as they have to pay an additional 10% tax if they opt for funds paying dividend. Now with the imposition of tax on share buyback, cash flows to mutual funds would dry up and hence return on equity would fall.

Table 3: Share Buyback in India during 2000-2018

Share Buyback in India during 2000-2018		
Total Amount bought back (Rs. Crore)	140120	
Total number of buyback made	460	
Mode of Buyback (Number):		
Through stock exchange	254	
Through Tender Offer	206	
Year-wise break-up		
Year	Number	Value (Rs. Crore)
2000	15	1160.85
2001	19	504.45
2008	32	2167.18
2015	13	1263.15
2016	37	27887.44
2017	50	55273.77
2018	63	32385.25

Source: Prime database

3 LIVEMINT (JULY 16, 2019). GOVT'S NEW BUYBACK TAX SET TO HIT MF INVESTORS, SHAREHOLDERS ALIKE.

Interestingly, the effective corporate tax rate for a dividend paying company in India is higher than those who hoard cash. Therefore, tax laws encourage companies to either hoard cash or re-invest in similar or diversified business. It may appear to be a sound tax incentive as it should spur investments. But we have seen in the recent past that companies have tendency to hoard cash. Way back in 2012, the top 5 non-finance companies in India had cash and cash equivalents of Rs. 165,486 crores. For example, Coal India limited had a cash holding of Rs. 58,202 crore in 2012 and the cash holding has drastically reduced to Rs. 4193 crore in March 2018- thanks largely to its massive buyback programmes.

Coal India was not alone- large corporations (including major public-sector companies) always used to hoard tons of cash and as a result the Government of India had to come out with a notification mandating every profit-making central public sector undertaking to distribute surplus cash to the shareholders (i.e, government) by way of dividend and share buyback. Similarly, there was constant pressure from the active shareholders (including mutual funds and pension funds) on the companies to distribute surplus cash and not diversify to unprofitable territories. Companies had responded to the pressure in the past by distributing a large part of the surplus cash through tax-efficient buyback route. The massive buyback numbers (Table 3) since 2016 were signs of distribution of large cash holdings. Now that would be tax-inefficient and hence buyback tax would encourage companies to again hoard cash or in many cases invest in negative NPV projects.

Distribution of free cash through share buyback (via stock exchange) is nothing but paying all the cash dividend at one go- the market price of a share is nothing but sum of present value of future dividend. If a company does not have profitable business opportunities, it is optimal if the company returns the cash to the shareholders allowing them to invest such cash in positive NPV projects. That would spur economic growth and hence yield better tax revenue for the exchequer in the long run. On the contrary, tax on cash distribution by way of share buyback would, at least in the short run, result in cash hoarding which earns sub-optimal return. This would lower future corporate tax revenue. In order to encourage payment of cash dividend, an alternative could be to tax share buyback if the dividend payout is less than average of previous five (or three) years' payout. The usual applicable capital gains tax in the hands of the recipients should continue.

Therefore, I suggest that cash distribution through share buyback should not be subject to the 20% distribution tax if a company has at least maintained the five-year average dividend payout. This way, companies would not be encouraged to hoard cash, dividend paying mutual funds would get enough returns from the portfolio companies and distribute healthy dividend to investors, pension funds which invest a part of their corpus in mutual funds would not face liquidity shortfall, and more importantly, large investors would have enough liquidity to invest in profitable business opportunities.

Name Change with 'Blockchain': Reactions from Market

Samit Paul



Samit Paul is Assistant Professor, Finance and Control. Indian Institute of Management Calcutta (IIM-C). He has completed his fellowship from IIM, Lucknow in the area of Finance and Accounting. His primary research interests lie in the area of market risk management, volatility modelling and portfolio management.

In January 2019 issue of Artha, I have discussed how the radical and disruptive “Blockchain” technology has brought the advancement and at the same time has set new challenges in the field of accounting and auditing. Now, in this issue I will be focusing on how the “Blockchain” wave has impacted the strategy of a firm and the sentiment of an investor investing in cryptocurrency market. The starting point of this wave was back in October 2009 when the New liberty standard started online service of buying and selling of bitcoins at an initial price of eight hundredths of a cent per bitcoin. Since then, the intensity of the flow of such wave leads the price of bitcoin touching \$19,500 by November 2017. Gradually, it became the fifth largest currency in circulation across the world. The success of Bitcoin further leads launching of thousands of new cryptocurrencies. As on 30th June, 2019 the website Coinmarketcap.com tracks 2,322 cryptocurrencies in 19,121 exchanges with an aggregate market capitalization of 352.76 billion dollars. This growing popularity of cryptocurrencies can be very well reflected in launching of Bitcoin futures by the Chicago Mercantile Exchange and the Chicago Board Options Futures Exchange, setting up of Bitcoin trading desk by the Goldman Sachs Group, emergence of hundreds of investment funds that invest exclusively in cryptocurrencies and massive number of initial coin offerings.

It is no surprise that in such situation the firms in cryptocurrency business use different strategies to seek investors’ attention. One of the innovative strategies is to change the name of a firm by including buzzwords related to cryptocurrencies such as “bitcoin” or “blockchain” or “crypto” etc. Such name changes are often accompanied by spectacular gains in the stock prices of the firms. For instance, during dotcom bubble in 1998-1999, several companies witnessed significant increase in their stock prices after changing their names while including buzzwords related to internet application, such as “.com”. Obviously, the nature of business of a company should justify these name changes. Otherwise, the firm will definitely come under the scrutiny of the regulators. In such cases, one palpable approach adopted by the firm is to change the focus of the business and diversify into newer products. For instance, Biopix Inc, a medical equipment manufacturer, has rebranded itself by stepping into the cryptocurrency space. It has changed its name to Riot Blockchain and as a result the price of the stock has been

increased by approximately 100% within a week from the date of announcement. Another controversial name in this list is Long Island Iced Tea Corporation, a non-alcoholic beverage company, which has changed its name to Long Blockchain Corp with a pledge to buy 1,000 bitcoin mining machines. With the announcement of name change the stock price of the company is increased by a staggering 289 percent.

Following table lists a dozen of cryptocurrency companies that have experienced more than 300% trade in ranges just after the name changes:

Former Name	Current Name	Location	Trading Range 2017
Tulip Bio Med	Bitcoin Servies	USA	42,500%
JA Energy	UBI Blockchain Internet	China	20,445%
Natural Resource Holdings	Blockchain Mining	Israel	12,021%
Leeta Gold	HIVE Blockchian Technologies	Canada	6,384%
Grand Pacaraima Gold	First Bitcoin Capital	Canada	5,897%
Carrus Capital	Global Blockchain Technologies	Canada	2,900%
AgriVest Americas	NXChain	USA	1,700%
Bioptix	Riot Blockchain	USA	1,611%
AE Innovative Capital	Bitcoin Group	Germany	1,503%
On-Line	Online Blockchain	UK	1,300%
Long Island Ice Tea Corp	Long Blockchain Corp	USA	458%
Transeastern Power Trust	Blockchain Power Trust Unit	Canada	309%

Source: OTC Markets, Investing.com

Why do firms change their names?

Usually firms do not prefer to change their names as it needs rebranding and for that firms incur lots of publicity expenses. Larger is the firm, more costly is its name change. Additionally, it may also have to bear the risk of creating confusion in the mind of present and prospective customers. However, firms have to change their names if the situation demands. Sometimes, these name changes are associated with post mergers or acquisitions where the firms have to create a new image and identity in mind of their different stakeholders. In all such cases, the main motive of the firm is to increase their intrinsic value by expanding customer base and/or by enhancing operating efficiency. Alternatively, firms may use this strategy as a signal towards stakeholders about their intended changes in product offerings, technology up gradation etc. Although this does not enhance their intrinsic value in short run, it draws investors' attention towards the stock and the stock price changes either on temporary basis or permanently.

If the stock price changes on temporary basis, there can be several possible implications for the same. For instance, there can be insider trading that makes full advantage of prior information of name change announcement. Insider trading involves social cost that is experienced from loss of liquidity, loss of investors' confidence and inappropriate managerial incentives. Besides, at firm level there lies an opportunity to enjoy favorable financing from market. One may argue that these two actions, i.e. insider trading and financing, just after the event of name change may instantly draw the attention of regulators. Hence, adopting such strategies under the event of name change invites a litigation risk for the firm managers. On the other hand, if there is a permanent change in stock price, firms may not go for either of these actions immediately. Therefore, it would be more difficult for the regulators to spot these motives behind the name change. Although regulators have multiple checks and balances on these issues in developed markets (say, equity markets), they need more time to employ such controls in newly developed markets like cryptocurrencies. So, the firms of the weakly regulated cryptocurrency markets have enough incentives to adopt the strategy of name change at their utmost advantage.

Why “Crypto” Market is special?

As on date, out of 2,322 cryptocurrencies in circulation, 1082 have market capitalization more than \$100,000. The World Economic Forum has predicted that by 2027, 10% of Global GDP will be driven by blockchain technology. CB insights, the consulting firm in technology space, has acknowledged 27 different ways with which blockchain can modify or upgrade the diverse processes such as banking, voting, cyber-security, academics etc. Most encouraging growth in cryptocurrency market has been marked in Initial Coin Offerings (ICO). In case of an ICO, a startup issues digital “tokens” to raise capital for necessary financing needs. The buyer can purchase tokens using either fiat currency (e.g. USD) or other cryptocurrency such as Bitcoin or Ethereum. The token holder enjoys the right to use the firm's products and can trade tokens in secondary market. In 2017, 435

successful ICOs were recorded and they had raised on an average \$12.7 million each. In the first quarter of 2018, ICOs have raised unbelievable \$6.9 billion. In the same year Mr. Brendan Eich, former Mozilla CEO, had raised \$35 million via ICO in [less than 30 seconds](#) while Bancor Protocol was able to raise \$153 million within three hours.

These events evince the craze for cryptocurrencies among the investors. Such madness is not only restricted to “Bitcoin”. Rather it has spread out towards other cryptocurrencies (known as “altcoins”) as well. Therefore, it is possible to grab investors’ attention very quickly in case there is an inclusion of word such as “blockchain”, “crypto”, “bitcoin”, “coin” etc in the name of a company. Gaining investors’ attention is reflected in the transaction and subsequent price movement of an instrument. There is another catch here. Many firms dealing in cryptocurrencies are small in size. Such penny stocks bear a very low price and low liquidity. Even an artificially created demand through a sizable amount of “buy” can trigger the movement of the stock price in positive direction. Such artificial demand is created by “pump groups” (organized group of manipulators) who attract the investors through encrypted messaging apps, inflate the price of a cheaper assets and quickly sell the assets at higher price. This “dumping” of assets leads the price falling and investors lose their heard earned money. If such “pump & dump” strategy has been adopted by the outsiders targeting the announcement date of name change, sudden movement of stock price may not be the direct result of name change. Instead, it’s due to the manipulative game played by handful of outsiders. Of course, in such case there must be some leakage of inside information related to the name change of a company.

The Challenges for Regulators

As discussed earlier, the regulation for cryptocurrency market is still in the nascent stage in most of the economies. But, the extreme volatility in this market certainly demands quick intervention and streamlining. The Canadian Securities Administrators (“CSA”), On August 24 2017, has issued relevant guidance for those issuers who seek to raise capital from cryptocurrency market. The United States, like Canada, treats cryptocurrencies as a potential security and thus asks for comprehensive set of documentation related to registration, disclosure and other relevant matters. However, emerging economies are more concerned about the crypto market, People Bank of China (PBOC) with other Chinese State Authorities has issued a circular on September 04, 2017 stating that “Bitcoin” should not be served as fiat currency and ICOs should be treated as “illegal financing activities”. The earlier circular issued by PBOC in 2013 has defined Bitcoin as:

“Bitcoin has four major features including, (1) no centralized issuer, (2) limited issuance volume, (3) no geographical boundaries, and (4) anonymity. Despite being called “currency”, Bitcoin is not a currency in nature because it is not issued by monetary authorities and does not possess the legal status of being compulsorily used

and accepted. Judging from its nature, Bitcoin should be regarded as a specific virtual commodity; it does not have the same legal status as a fiat currency, and it cannot and should not be circulated in market as fiat currency.”

In this regard, changing name of a company by including keywords like “blockchain” demands thorough investigation and the regulators are doing that. For example, stock of Long Blockchain Corp (earlier name ‘Long Island Iced Tea Corp’) has been suspended from Nasdaq in April, 2018 and finally get delisted on June, 2018. Even, the Securities and Exchange Commission (SEC) has issued a subpoena to the company on June 10, 2018. Similar subpoena has been issued against Riot Blockchain (earlier name ‘Bioptix’). Very recently, the SEC has forced two exchange traded funds (ETFs) – *Realty Shares* and *Amplify* to drop the word “blockchain” from fund description. During a recent speech, the SEC Chair Jay Clayton said:

"I doubt anyone in this audience thinks it would be acceptable for a public company with no meaningful track record in pursuing the commercialization of distributed ledger or blockchain technology to (1) start to dabble in blockchain activities, (2) change its name to something like "Blockchain-R-Us," and (3) immediately offer securities, without providing adequate disclosure to Main Street investors about those changes and the risks involved."

Road Ahead

Although the SEC has started putting more focus on cryptocurrency market these days, more deliberations on the same are needed. Subsequently, other markets should also respond in same line to form robust framework to streamline the operations in cryptocurrency market. No doubt, blockchain technology has much to offer in the economic growth of a country. But, at the same time proper monitoring of the system is also necessary. Moreover, the hidden motive behind using the buzzwords from crypto markets needs to be properly investigated, though it is highly difficult to perform. In this regard, regulators, practitioners, academicians should work in tandem to safeguard the interest of common investors and keep this crypto market functional.

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*GUEST COLUMN***Bank CEO's Salary Framework Can Transform Banking****Deep N Mukherjee**

Deep N Mukherjee is currently with the Boston Consulting Group (BCG). Earlier he was the Chief Product Officer, handling product design and analytics in an Indian credit bureau. He has over 15 years of experience in Risk Management and Credit Assessment. Deep has also worked with Fitch where he was in structured finance team. He has worked with the American Express where he was heading the Institutional Risk Management Team focusing on quantitative risk management. He is also a visiting faculty in finance with IIM Calcutta. He has done his graduation in engineering from IIT, Kharagpur (BTech, 1999) and has obtained his management degree from IIM Lucknow (PGDM 2002).

Earlier this year (February, 2019) Reserve Bank of India published a discussion paper on proposed compensation guidelines for material risk takers in Indian banks, which includes of course the CEO and Whole-time directors. The immediate reactions were more focused on the limits such a guideline, if implemented, would put on CEO salary. But what was often missed is how such a rule, implemented in true spirit and with requisite sophistication, can fundamentally transform strategy formulation and decision making at banks.

In this piece we will focus on the following:

- A) Genesis of the guideline
- B) RBI's proposed guidelines
- C) Implementation aspects of sound compensation practices
- D) Global experience thus far
- E) Considerations for successful implementation
- F) Getting Indian banks started on compensation guidelines

A) *Genesis of the Guideline:*

Former US Treasury Secretary Tim Geithner, testifying in front of a Senate Appropriations subcommittee in June 2009, argued that “although many things caused this crisis, what happened to compensation and the incentives in creative risk-taking did contribute in some institutions to the vulnerability that we saw.”

RBI also invoked comparable references of global financial crisis (2008) and how management incentive attuned to short-term profitability over long –term sustainability is often a cause of crisis. It is however debatable as to whether the compensation structure was at all one of the key reasons for the Indian credit debacle. For starters it was dominated by public sector banks.

However, the current proposal, if implemented, would be transformational for Indian banking sector since it would mandate risk being a central aspect of planning and business decision making. Of course there is

a possibility that such a policy is adopted by the banking industry from purely compliance angle without the necessary transformation but that will not be a first. It's not inconceivable that certain banks make do with risk management because it's a 'compliance thing' and do not integrate it as an input to planning. Risk projections, more often than not, come-out as an after-thought of a planning exercise.

RBI draws on the Financial Stability Forum (2009), which tried to put a leash on runaway executive compensation in financial services. It argued that "*High short-term profits led to generous bonus payments to employees without adequate regard to the longer-term risks they imposed on their firms. The lack of attention to risk also contributed to the large, in some cases extreme absolute level of compensation in the industry.*" Subsequently, Financial Stability Board (FSB) issued Principles for Sound Compensation Practices and their Implementation Standards (Principles and Standards, P&S) in 2011.

B) RBI's proposed guidelines

The sound compensation practices mentioned above have been endorsed by regulators of G-20 countries as well as Basel Committee on Banking Supervision much earlier. In 2012 itself RBI had issued guidelines for senior management and material risk takers. It touched upon important aspects such as formulation of suitable compensation policy by banks, constitution of a Remuneration Committee, alignment of compensation with *prudent risk taking*, *capping of variable* compensation as a percentage of fixed pay, deferral of part of variable compensation, incorporation of malus/claw-back clause, adequate disclosure norms and supervisory oversight. However to the extent quantification was limited, it was implemented but the efficacy of the implementation was difficult to validate other than in some cursory fashion.

As the experience in last several years suggests that banks, more often than not, struggled to assess the risk of their corporate borrowers with rigor and thereby miserably failed to aggregate risk at the enterprise level. However, now RBI wants the salary of senior decision makers of bank to focus on *alignment of compensation with risk-taking*.

Specifically;

- Compensation must be adjusted for all types of risk.
- Compensation outcomes must be symmetric with risk outcomes.
- Compensation payout schedules must be sensitive to the time horizon of risks.

The recent suggested guidelines also put a limit to most elements:

- Substantial portion of compensation i.e. at least 50%, should be variable (earlier no threshold was prescribed)
- ESOPs to be included as a component of Variable Pay. (*earlier excluded*)
- Variable Pay is to be capped at 200 % of Fixed Pay (earlier Variable Pay was capped at 70% of Fixed Pay but did not include ESOPs).
- Minimum 50% of Variable Pay is to be via non-cash component. (earlier no specific proportion was prescribed).
- Mandating a compulsory deferral mechanism for Variable Pay, regardless of quantum of variable pay (earlier it was mandated only beyond a specified threshold).
- Mandating imposition of malus in case of divergence in NPA/provisioning beyond RBI prescribed threshold for public disclosure. (new addition)
- Quantitative and Qualitative criteria is being prescribed for identification of Material Risk Takers.

C) Implementation Aspects of Sound Compensation practices

The most pivotal aspect of the compensation related regulations globally as well as in India ,is alignment of long-term business risk with the compensation of critical decision makers. There can be no doubt that this is a good thing. The challenge lies in implementation of the same. Here it must be pointed out that apart from strong intent on the part of the board and the management, it needs support of strong risk data and analytics capabilities and also the willingness to make this core to banking strategy & planning as opposed to the periphery.

Risk alignment involves ex-ante structuring of the compensation framework and ex-post assessment of risk adjusted performance. To elucidate, compensation policies should be structured before-hand to incentivize strategy formulation and planning keeping in view the long-term sustainability of a financial institution. The performance penalties (such as malus and clawback) should discourage short-term focus to the detriment of long-term. The ex-ante adjustment may be instrumental in setting company-wide bonus pool and allocate bonus pool across business units based on their risk adjusted performance- which will subsequently flow down to individual employees. Post the performance period the actual compensation (particularly variable) is determined by the outcomes to the extent they are aligned with the initial target and not just by asset growth or accounting profit. So this may mean reduction of target bonus or reduction in unvested variable compensation because of unexpected losses.

In this regard a proposed rule in US published in 2017 (with regard to Dodd Frank Act, Section 956) would require the largest firms to defer up to 60% of incentive compensation for senior executives for four years. For certain adverse events, such clawback could apply for seven years.

The compensation philosophies and actual implementation of the same should try to ensure that the decision makers adopt growth strategies which are aligned with their stated risk appetite. This in turn leads to financial institutions having well-articulated and quantifiable Risk Appetite Statement(RAS). In certain jurisdictions regulators have taken steps to ensure that the compensation is aligned to risk policies. Canadian banking regulator expect banks clearly establish link between its risk appetite framework and the compensation policies of senior management. Regulators in Singapore and Europe also emphasize on strengthening the linkage between risk appetite statements and compensation of senior management.

D) Global experience thus far

In jurisdictions, where comparable compensation guidelines has already been adopted, there are some key learnings and impact analysis which are quite widely published.

What Metrics to track: Traditional measures of performance such as revenue/asset growth target, accrual accounting based profit measures, ROE and ROA continue to be used for determination of compensation. Apart from being backward looking, none of them adjust for the risk borne by business to generate the current performance. Likewise, market performance of the bank's stock price continues to influence the compensation decisions.

However, there is an emerging trend and a growing use of more risk sensitive and economically well-aligned measures such as risk-adjusted return on capital (RAROC) and Economic Profit. Such measures are better suited to enable risk adjusted compensation frameworks than pure accounting or stock price based measures.

Implementation Examples:

Among the more comprehensive implementation guidelines one may refer to Canada as a notable example. The Canadian regulator provides granular guidance on

- (i) the significance of management judgement in risk adjustments
- (ii) the importance of documenting decisions on the allocation of variable compensation in order to allow for consistent application and effective oversight
- (iii) enhancements to publicly disclosed information

- (iv) that risk appetite frameworks need to be well developed and cascaded to appropriate levels within the bank if such frameworks are to be effectively aligned with compensation policy..

Risk based adjustments to compensation structure can be both quantitative and qualitative. The quantitative adjustments can vary from liquidity usage, fund transfer pricing applicable, risk adjusted returns. On actual occurrence of risk events most major international banks have provisions for claw backs for incidents such as ignorance, willful neglect or violations of risk norms by the employee.

Several firms are implementing explicit ex post risk adjustments that make vesting dependent upon risk outcomes that occur during the deferral period (sometimes known as “performance based vesting”). Basel expects disclosures with respect to about how banks’ compensation policies are structured and quantitative disclosures to set out the outcomes from these policies. Disclosures to markets are expected to state the amount of outstanding deferred remuneration exposed to risk-adjusted-performance or actual adverse risk events.

Regulatory Learnings: In jurisdictions, which have practice of banks having quantifiable and granular risk appetite statements, risk framework tends to drive the bank’s strategy and planning. In such instances the risk based compensation guidelines had more meaningful adoption with desirable results. Additionally the outcomes are sharper when the risk targets and metrics are explicitly approved and supported by the Board. Among the other learning sighted in several studies (including Basel) is the judicious mix of qualitative and quantitative metrics to ensure consistency of application as well as to enhance acceptability of the guidelines. Certain regulators have encouraged back testing the procedures to assess the efficacy of the compensation frameworks and whether the outcomes are consistent with the regulator’s expectations. Published research on the impact suggest that jurisdictions, which were early implementers of the compensation guidelines, clearly show high correlation(negative) between variable pay and measures of risk. Another important finding has been that while the limelight is on senior management compensation, one should not miss out of implementing risk-based compensation for all material risk takers, irrespective of their level in the organisation.

E) Getting Indian Banks started on Compensation frameworks

Markets (Not just Indian markets) in optimistic times looks at asset growth/profitability growth and in distressed time looks at NPAs and provisioning. So CEO compensation as often been driven by current or rather previous year’s results(accounting profits) and to a certain extent the behavior of the stock-returns. The returns considered are absolute returns and generally not adjusted for risk inherent in the same. Level of disclosures currently followed limits the extent of risk adjusted returns calculation(by market) even if someone tries to do the same.

While it is doubtful whether existing CEO compensation was responsible for the current credit blow-up of corporate loans- the current set of rules will set the stage for rethinking the importance of risk management and making it a prominent aspect of bank strategy

RBI has made a good start in introducing a detailed quantitative guidelines on compensation for public discourse. However, as and when such guidelines are actually implemented, RBI should encourage in a holistic fashion overall risk management capabilities-particularlry enterprise wide risk management capability with a strong quant and detailed focus. Else we can end up with Risk Appetite Statements which evolve more as exercise in literature and grammar and not a guide to any respectable amount of risk management. There always remains a risk that some banks would implement the RBI guidelines in letter and not in spirit- more as yet another compliance challenge to address and not as a trigger to improve risk management practices.

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GUEST COLUMN**On Economic Capital of RBI****V K Sharma**

A career central banker and a Member of the Markets of Bank for International Settlements, Basel, Switzerland, Mr. Sharma retired as Executive Director, Reserve Bank of India (RBI), on 31st December, 2012. He is currently on the Board of Governors of International Management Institute, New Delhi and on the Academic Advisory Board of MIT World Peace University's School of Economics, Pune.

To determine if RBI has excess capital, and if so, how much, we begin with comparing RBI's actual total economic capital with its total Value at Risk (VaR), given an increasing order of market stress/shocks, including a Black Swan market shock, to the RBI balance sheet.

The analytical framework in this column uses RBI's Balance Sheet for the year 2017-18, according to which, RBI's Economic Capital comprises Contingency Fund and Revaluation Reserves. As on June 30, 2018, CF (Contingency Fund), CGRA (Currency and Gold Revaluation Account), IRA-FS (Investment Revaluation Account- Foreign Securities) and IRA-RS (Investment Revaluation Account- Rupee Securities) had credit balances of ₹2.32 trillion (net of ₹0.169 trillion of debit balance in IRA-FS), ₹ 6.92 trillion, ₹ 0 and ₹ 0.133 trillion (down 77% from ₹ 0.571 trillion in previous year), respectively, giving total economic capital of ₹ 9.37 trillion, representing about 26% of RBI's total assets worth ₹ 36 trillion. It must be noted that all revaluation reserves, as name itself suggests, represent periodic marked-to-market unrealised/notional gains/losses in values of Foreign Currencies and Gold, Foreign Securities and Rupee Securities on RBI's Balance Sheet and serve the purpose of economic capital as its first buffer/line of defence against unrealised marked-to-market losses, on account of currency, interest rate and gold price fluctuation risks, inherent in RBI's balance sheet, thus, obviating any impact on its Contingency Fund. As per RBI's accounting policy, it is only when there is debit balance in any of these Revaluation Accounts is Contingency Fund debited as second buffer/line of defence.

As regards an appropriate level of RBI's economic capital, because nominal values of two key random variables, namely, exchange rate and interest rate, cannot be negative, we make the standard assumption that they are log-normally distributed and then estimate value at risk (VaR) for foreign currency assets under three extreme stress scenarios of rupee's appreciation against the dollar (with other foreign currencies and gold already translated in

dollar terms in RBI Balance Sheet). Specifically, these three extreme event shock scenarios correspond to -1.65 standard deviation (95% confidence level), -2.33 standard deviation (99% confidence level) and -4 standard deviation (99.997% confidence level) from the mean of standard normal distribution of daily continuously compounded rupee-dollar exchange rate percentage changes (natural logarithm of E_t/E_{t-1}). To account for as many representative extreme event shock episodes as possible, like Enron and Worldcom bankruptcies, Global Financial Crisis, Lehman bankruptcy and Taper Tantrum, historical time series of daily rupee-dollar exchange rates from 1 April, 2001 to 31 March, 2019 has been used. During this 19 year long period, annualized mean (M) and standard deviation (SD) of continuously compounded daily returns came out as 2.20%, and 6.75%, respectively. We next use the formula $E_t = E * e^{(M * t - 1.65SD * t^{0.5})}$ which gives value of rupee dollar exchange rate at time t for initial exchange rate of E. Substituting ₹68.6 to a dollar (exchange rate on 30 June, 2018) for E, 0.0675 for SD, 0.022 for M and 1 year for t, we get, ceteris paribus, ₹ 62.73 as the exchange rate after one year. This appreciation of the rupee against the dollar will, ceteris paribus, reduce the value of foreign currency assets and gold from around ₹28 trillion as on 30 June, 2018 to $62.73/68.6 * 28$ trillion = ₹25.61 trillion, that is, marked to market loss in value of ₹28-₹25.61 trillion = ₹2.4 trillion which is nothing but VaR at 95% confidence level. Simply stated, what this means is that there is 95% probability that VaR will not exceed ₹2.4 trillion or, put another way, there is only 5% probability that loss (VaR) will exceed ₹2.40 trillion. Repeating the computation for other two extreme shock/stress scenarios, we get corresponding VaR as ₹ 3.55 trillion and ₹ 6.15 trillion with 1% and 0.003% probabilities, respectively, of erosion in value exceeding these VaR numbers. ***Significantly, CGRA actually depleted by about 75% from ₹0.87 trillion in 2006 to ₹0.22 trillion in 2007 due to rupee's appreciation against the dollar, as against the potential depletion of 35% (from ₹6.92 trillion to ₹4.52 trillion (₹6.92 trillion - VaR of ₹2.40 trillion), and 51% (from ₹6.92 trillion to ₹3.37 trillion (₹6.92 trillion - VaR of ₹3.55 trillion), for 95% and 99% confidence intervals, respectively! Since these potential depletions are way too less compared with the actual "white swan shock outcome" (a black swan shock becomes a white swan shock when it actually happens), 95% and 99% confidence intervals rule themselves out as black swan shock outcome choices, incontrovertibly leaving the 99.997% (veritable Black Swan) as the only probability confidence interval for estimating required, and excess, capital of RBI.***

Next we estimate VaR for Government Securities, again under same three extreme shock/stress scenarios, because of rise in yields only with the difference that now 'minus' sign in the formula is substituted with 'plus' sign because bond prices fall with rise in yields. But, as the computation of loss for a given rise in yield requires weighted average modified duration of entire Government Securities portfolio in RBI's Balance Sheet, and which is not available in public domain, implied ball park modified duration was backed out from the erosion of ₹ 0.438 trillion (77%) in the value of IRA-RS credit balance from ₹0.571 trillion as on 30 June, 2017 to ₹ 0.133 trillion as on 30 June, 2018. This erosion of ₹ 0.438 trillion as a percentage of 2017 year-end Government Securities

value of ₹ 7.6 trillion was 5.76%. And, percentage change in value of any fixed income security is given by the product of Modified Duration and absolute change in yield. As the percentage change is 5.76% and as the actual absolute rise in the 5 year yield between 30 June, 2017 and 30 June, 2018 was about 1.25%, we can back out, ceteris paribus, implied modified duration as $5.76/1.25 = 4.6$ years (This is the reason to choose 5 year bond yield). Now for estimating VaR, we need annualized mean (M) and volatility (standard deviation, SD). These were obtained by computing annualized (236 trading days of daily continuously compounded percentage changes (natural logarithm of Y_t/Y_{t-1}) and came out as -0.77% and around 9.85% for 5 year Government Security based on historical time series of daily yields from April 2011 to March 2019. Now formula for estimating absolute yield for 95% confidence level is $Y_t = Y * e^{(M * t + 1.65SD * t^{0.5})}$ where Y_t is yield after t years, M the annualized mean, SD the annualized standard deviation and t the time period over which computation has to be done. Substituting 8% for Y (5 year yield as on 30 June, 2018), -0.0077 for mean, 0.0985 for SD and 1 year for t, we get yield of 9.35% which, in turn, gives a rise in absolute yield of 1.35% and, therefore, ceteris paribus, loss of $4.6 * 1.35\% = 6.20\%$ on the 30 June, 2018 value of ₹6.3 trillion, translating into loss of $6.3 \text{ trillion} * 6.20\% = ₹0.40$ trillion at 95% confidence level. Simply stated, what this means is that there is 95% probability that VaR will not exceed ₹0.40 trillion or, put another way, there is only 5% probability that the loss (VaR) will exceed ₹0.40 trillion. Repeating computation for other two shock/stress scenarios, we get corresponding VaR as ₹ 0.58 trillion and ₹ ₹ 1.09 trillion with 1% and 0.003% probabilities, respectively, of erosion in value exceeding these VaR numbers. Significantly, as in the case of rupee-dollar exchange rate Black Swan shock referred to before, this estimated potential loss of ₹ 1.09 trillion, corresponding to 99.997% confidence interval amounts to a veritable Black Swan shock.

As regards VaR estimation for foreign securities, it was not possible to do the above computation because foreign securities, unlike rupee securities, are issued by different governments with widely differing yields and information on composition of RBI's foreign securities portfolio is not available in public domain. But, of course, RBI can use the framework presented in this column to estimate VaR for foreign securities portfolio as well. Significantly, for last 2 years, IRA-FS had zero balance because debit balance of ₹0.169 trillion was debited to Contingency Fund.

Now estimation of appropriate level of RBI's economic capital is straightforward. All that we need to do is add VaRs for Currency and Interest Rate Risks and compare total VaR with actual economic capital of ₹9.37 trillion as on 30 June, 2018 for each of three extreme stress/shock scenarios. Specifically, for 95% confidence level, we get total VaR/economic capital of ₹ 2.8 trillion ($2.40 + 0.40$ trillion) (7.8% vs. actual 26%) giving $₹9.37 - ₹2.8$ trillion = ₹6.57 trillion as excess/surplus capital, subject, of course, to important caveat of overestimation of this

excess capital due to the absence of VaR for foreign securities portfolio. Now, as per current accounting policy of RBI, ₹0.40 trillion estimated loss, net of credit balance of ₹0.133 in IRA-RS, will result in a debit balance of about ₹0.27 trillion which will have to be debited to Contingency Fund, depleting it to ₹ 2.05 (₹2.32-₹0.27) trillion (transferable surplus in Contingency Fund). Besides, CGRA of ₹6.92 trillion will also be depleted to non transferable surplus of ₹4.52 (6.92-2.40) trillion because [surplus in Revaluation Accounts cannot be transferred](#). These two add up to excess capital of ₹6.57 (4.52+2.05) trillion as computed above, of which, as stated above, only ₹2.05 trillion is transferable surplus, subject to the two very important and significant caveats discussed below. Repeating computation for next level shock/stress scenario, corresponding to 99% confidence level, we get total VaR/economic capital of ₹4.13 (3.55+0.58) trillion (11.5% vs. actual 26%), leaving excess/surplus capital of ₹5.24 (9.37-4.13) trillion (transferable surplus again in Contingency Fund of ₹1.87 trillion net of debit balance of ₹0.447 trillion in IRA-RS plus nontransferable CGRA balance of ₹3.37 trillion) subject again, of course, to the important caveat of overestimation/overstatement of the Contingency Fund component of excess economic capital due to absence of VaR for foreign securities. And, finally, for the so called Black Swan shock, corresponding to 99.997% confidence level, we get total VaR/economic capital of ₹ 7.24 (6.15+1.09) trillion (about 20% vs. actual 26%), giving ₹2.13 trillion as excess capital comprising non transferable CGRA balance of ₹0.77 trillion and transferable Contingency Fund surplus of ₹1.36 trillion net of IRA-GS debit balance of ₹0.957 trillion .

Economic Capital (₹ trillion)	Total Assets (₹ trillion)	Estimated Value at Risk (VaR)						Excess Capital (₹ trillion)		
		Percent of Total Assets	Confidence Level (%)	Exchange Rate Risk (₹ trillion)	Interest Rate Risk (₹ trillion)	Total (₹ trillion)	Percent of Total Assets	CGR A	CF	Total
1	2	3 (1/2*100)	4	5	6	7 (5+6)	8 (7/2*100)	9	10	11 (9+10 = 1-7)
9.37	36	26	95.00	2.4	0.4	2.8	7.8	4.52	2.05	6.57
9.37	36	26	99.00	3.55	0.58	4.13	11.5	3.37	1.87	5.24
9.37	36	26	99.997	6.15	1.09	7.24	20	0.77	1.36	2.13

In conclusion, as regards appropriate level of economic capital, we need to nuance and distinguish between a central bank balance sheet, especially of a non reserve currency issuing central bank like RBI, with very large involuntary holdings of foreign currency and domestic assets, with no choice, and balance sheets of banks/finance companies and other companies with voluntary holdings of assets, with choice, in deciding on extreme event probability confidence thresholds of 95%, 99% and 99.997% (closest proxy for a Black Swan shock). Specifically, as part of its charter and mandate, RBI, and other central banks of its ilk, as public policy sovereign institutions, have necessarily to intervene in domestic foreign exchange and government securities markets, and also act as a lender of last resort , not to make profits, or avoid losses, but to secure monetary, exchange rate, macroeconomic and systemic financial stability. While banks/finance companies and other companies can, and do, make risk-adjusted return outcome choices (with the former further fortified by various prudential risk exposure limits

mandated by RBI) and, therefore, can, and do, legitimately choose 95% and 99% probability confidence thresholds, RBI, and others of its ilk, have no such choice, what with , as argued before , 95% and 99% probability threshold choices incontrovertibly ruled out on account of their coming across as white swans “ , but to prudentially, and ideally, choose 99.997% (4 Standard Deviation) probability confidence threshold (closest to Black Swan event shock) giving, as also shown in the Table above, ₹7.24 trillion (about 20% of total assets of ₹36 trillion) as the RBI’s required minimum economic capital, and ₹2.13 trillion(about 6% of total assets) as the excess capital, comprising ₹0.77 trillion of non transferable surplus in CGRA and ₹1.36 trillion of transferable surplus in the Contingency Fund , subject , of course, again, to the important caveat of overestimation/overstatement of this Contingency Fund component of the excess capital due to the absence of VaR for foreign securities portfolio, and significantly, no less, the equally important caveat of the absence of the VaR for the Black Swan event shock on account of the RBI having to act as a lender of last resort ! The RBI can use this technical framework, as frequently as it deems appropriate in its discretion, to estimate VaR so as to preemptively and proactively replenish the Contingency Fund by transfer from the Annual surplus.

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VOICE OF AMERICA

Economic Allegory

Ayan Bhattacharya



Ayan Bhattacharya is Assistant Professor of Finance at The City University of New York, Baruch College. He has a PhD from Cornell University and his research focus is financial economics, especially financial market design and asset pricing.

Viral Acharya quit his post at RBI recently, and one consequence of the resignation is that the ratio of expert-technocrats to on-the-job-trained bureaucrats at the helm of RBI would likely skew even further. Yet India is hardly alone on this path. Christine Lagarde, a lawyer by profession, takes over as head of European Central Bank, from Mario Draghi, a former professor of economics. Likewise, in the US, Jerome Powell, a former lawyer, succeeded Janet Yellen, a professor emeritus at the University of California, Berkeley. Should such trends stir alarm? In other words, is management of a country's economic policy too skilled a job profile to be left to the generalists? In many ways, this question cuts to the heart of what economists really do. Are they the purveyors of specialized, accurate, testable models of reality? Or, do they deal in general allegories and fables? Rather surprisingly, on this foundational question, the view is deeply divided among serious economists.

1. An example

A typical theorem in economics reads like this:

“If each bidder i 's valuation is independently drawn from a strictly increasing cumulative density function $F_i(v)$ with a pdf $f_i(v)$ that is continuous and bounded below, the optimal single-good auction mechanism is a second price auction with a reserve price r^* that solves $r^* = \frac{1-F(r^*)}{f(r^*)}$.”

Hardly any on-the-job trained generalist can make sense of a statement like this. Yet optimal mechanisms for fair division – the subject matter of the theorem – have been with us since millennia, much before economics was even conceived as a serious field of study. In the Hebrew Bible, King Solomon is presented with a dilemma when two women approach him, each claiming to be the mother of an infant. Who is the real mother, courtiers wonder, as the wise king ruminates on what to do. Finally, Solomon declares that the baby be cut into two – one half for each mother. At this, one of the women cries in horror, giving up her claim and begging that the child not be hurt. Solomon immediately declares this woman as the true mother, and the impostor is put into jail.

In modern terms, Solomon was assigned an optimal mechanism design problem. How should the baby be assigned such that the utility of the mother got maximized, while the impostor got punished. One could give functional forms for the utilities, write out a social welfare function, and very soon we would have a theorem that would look much like the one above. Solomon was no trained economist, yet he came up with an optimal mechanism. Is this true in general? A troubling question that has been plaguing some of the best economic minds lately can be summarized in one sentence: when does economics uncover a fact that cannot otherwise be discovered by common-sense?

2. Fables

Ariel Rubinstein is among the world's foremost economic theorists alive today, his work having revolutionized the foundations of game theory and bounded rationality economics, among other fields. He writes in his book, *Economic Fables* (Open Book Publishers, 2012):

"I had the good fortune to grow up in a wonderful area of Jerusalem, surrounded by a diverse range of people: Rabbi Meizel...the communist Sala Marcel...my widowed Aunt Hannah...and the intellectual Yaacovson... all these characters instilled in me a sense of great awe for those people who understood the complexities of human interaction so well. As far as I'm concerned, the opinion of such people is just as authoritative for making social and economic decisions as the opinion of an expert using a model... I do not know when it will snow and when prices will change. I am not an advocate of justice and have done nothing to change the social order. I do not feel entitled to advise anyone on the basis of my professional knowledge. I find myself denying that the models I work on can serve as a basis for predictions... I approach economics as someone with a sense of curiosity who is trying to understand the logic of human interaction a bit better. This may not be much, but perhaps it is not so little either."

In this view, an economic model is like a tale, a fable. Just like a story in *Hitopadesha* or *Panchatantra* has a moral – some deep meaning – a well-written economic model has a deep insight. One does not get this moral or insight by interpreting the *Hitopadesha* stories literally – animals don't talk in reality. Only when one has put on the right lens of abstraction can one see the deeper morals from the story. Taking the economic models too literally is an overkill, in this view, leading to either trivialities or errors.

There is a polar opposite view of the profession, however.

2. Experiments

The title of an article in a prominent education magazine recently declared [1]

“The U.S. might have been 19th in the world in math (instead of 36th) if we’d bribed our students with \$25.”

This is precisely the kind of detail that the fables view of economics believes impractical. Yet, this headline was not vacuous. It was based on the painstaking work of well-known economists John List, Uri Gneezy and others, where they replicated the environment of the standard tests used to rank school going kids from around the world – but with a twist. Some students in the experiment were given an envelope with \$25 in it and told that for every incorrect answer a dollar would be taken away. Suddenly, the American students started to do much better. The experiments were run under strict protocols to minimize errors – almost like how a biologist works with test subjects in a lab – and it is unlikely that a generalist would have conceived or executed such an economic experiment.

Economics today is full of such precise prescriptions that go well beyond the ken of simple common sense. Increase the welfare handout by \$x, or inflation rate by \$y, or the tax rate by \$z; the list goes on. A lot of such prescriptions come from field experiments, where subjects are randomly assigned to treatment and subject groups, and claims of causality are tested, much like medical drugs. Such work generates sharp predictions. These are not the *Panchatantra* fables with lions and tigers imparting human morals, but meticulous manuals – like the ones that come with intricate machinery or drug prescriptions. How to use best such manuals needs specialized training. Just as we need specialized medical doctors for our health maladies, in this view, we require economic doctors for the ills of the economy.

3. Politics

Perhaps the biggest contrast to medicine is that unlike in the domain of personal illness, decisions on economic health have to be made by a collective. Economics does not pose a serious problem on Robinson Crusoe’s island. In more practical economies, however, complications arise from the complexities of collective decision-making. I might think that the Finance minister should have lowered the taxes to attract more investments to the country, while you could be of the view that she did the right thing by milking the ultra-rich even further. In an economy consisting of both you and me, how do we decide what to do? Enter the politician.

Just as any complex transaction needs an intermediary that simplifies the matter at hand, collective economic decision-making requires astute politicians to take us all along. Such a politician takes some of my ideas, some of your ideas, and some of his own, and sells it with such pomp and charisma that it convinces both you and me. So, another viewpoint on the work of economics is that the subject must generate ideas that a politician can understand and sell. Implementation is key word in this view. Unless an economic idea can be made sufficiently appealing to a politician who will take it up as a cause, it is worthless and irrelevant.

4. Middle ground

Recent years have seen a lot of soul-searching in the dismal science. The Great Recession of 2008 took the profession largely unaware, denting the confidence of many economists in their tools. Yet, it was economic experts like Ben Bernake, a former professor at Princeton university, that helped central banks and nations navigate the muddied waters in the aftermath. Going back to the original question, we frankly do not know for sure how far an economist's prescription differs from astute common sense – there is no objective measure for common sense! Further, when economics deviates from common sense, it hard to decide which constitutes a winning strategy: following economics or following common sense.

What seems to bring success in the real world of economic policy-making is a good mix of economics, common sense and politics. Sound economic policies that do not grossly violate the norms of common sense pushed by politicians who understand the basics of economics. Successful economic policy institutions somehow manage to create an orchestra – where a specialist instrument player's brilliance stands enhanced by a generalist conductor's clever use of the instrument. Let us hope that the economic institutions in India have figured out their orchestras right; otherwise, the music could get unexpectedly out of tune even before we know.

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VOICE OF AMERICA

U.S. Cross Border Deals in China and India: A Comparison

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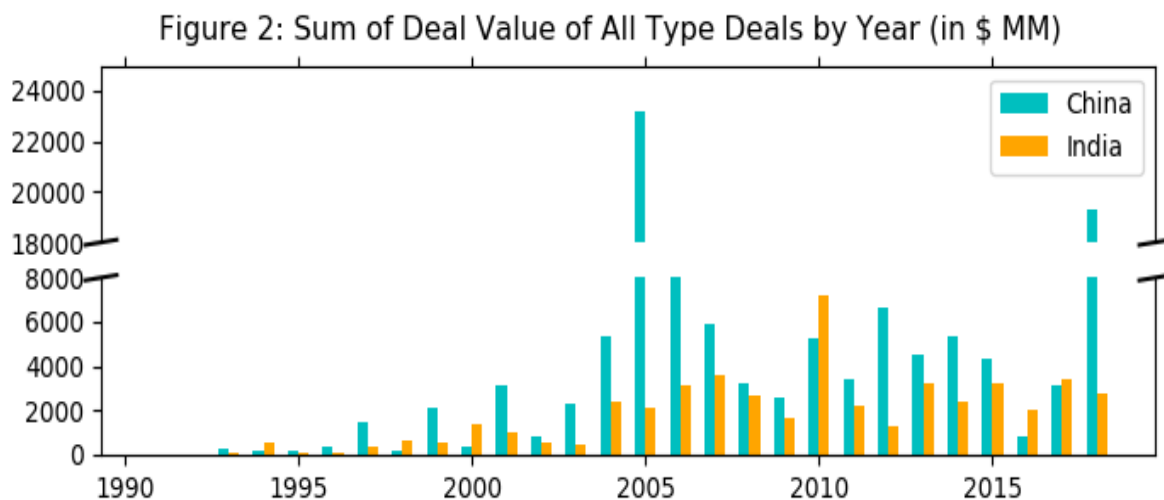
The last two decades has seen gradually increasing integration across global capital markets, not only with increased foreign direct investments but also an increased amount of deal making activity across countries. Several foreign firms have entered the U.S. market by acquiring a stake (in many cases a majority stake) in U.S. firms. Likewise, U.S. firms have also increased their footprint globally, and in particular in Asia. China and India are two of the leading countries in Asia to account for a huge proportion of such expansionary deals by U.S. based institutions. This study takes an initial look at all such deals by U.S. institutions that acquired any type of stake in either China or India and presents a side-by-side comparison between these activities.⁴ The analysis includes joint ventures, minority stakes, majority stakes, and outright mergers and acquisitions in either country between the years 1991 and 2018. In total, we have 1705 Chinese deals and 1981 Indian deals in our sample.

Figure 1: Deal Counts of All Type Deals by Year



⁴ We will use the term US institutions and US acquirors interchangeably in this article.

Figure 1 shows the trend in number of cross-border deals by US acquirors in China and India. Deals by US institutions in China reached its peak around 2007. However, since the financial crisis in 2008, the number of the deals in China has declined sharply until 2016. In 2016, the number of cross-border deals by US acquirors in China was only around 25, almost the same level as in 1998. Recently, over the last couple of years, deals in China has started displaying an upward trend. Compared with the single peak in China, the trend of similar deals in India showed multiple peaks in 2000, 2007, and 2015, with an average of 125 deal counts in each of these years. Since 2016, similar to the trend in China, the number of deals in India has also boomed, with the growth rate of deal counts being significantly higher than that in China. Based on the historical trend, 2018 appears to be another peak deal flow year for India.



In addition to the number of deals, we also compared both the total deal value and the median deal value, for both countries, for each year. The analysis that follows on deal value is however only for a subset of the data, for which the deal values are non-missing, which is approximately for 42% of the overall data. While this limits our ability to get a clear overall picture, it should be noted that the data availability issue is very similar across the two countries and hence not skewed in any manner. Figure 2 presents the total value of all deals, which are expressed in real 2018 US dollars. The results show that there is greater heterogeneity in terms of total deal value in China, with the highest value achieved in 2005, around 23 billion US dollars. Over the past three years, the sum of deal value showed a similar upward trend to that of deal counts, with a significant jump up in 2018, reaching around 20 billion US dollars. Compared to China, the trend of total deal value in India has been more stable with an average value at around 3 billion USD per year. The peak total deal value in India was in 2010 but following that, total value has dropped to previous levels. On average since 2005, there does not seem to be significant differences in levels of total deal value in India.

Figure 3: Median Deal Value by Year (in \$ MM)

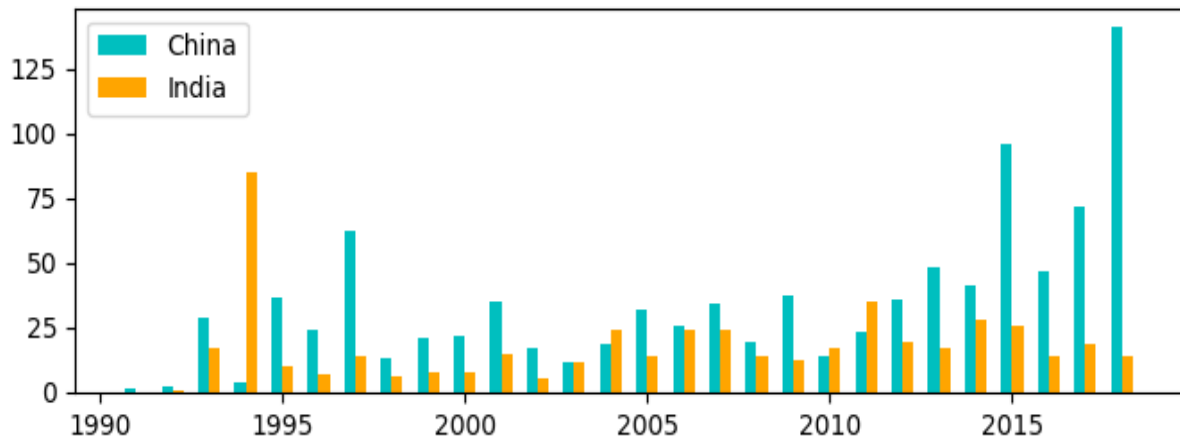


Figure 3 presents a comparison of the median deal value by year between China and India. We employ medians to eliminate the effects of the extremely large or small deal values. We find that for most years, the median deal value in China is greater than in India. Moreover, since 2013, while the median deal value in India has on average remained stable, the same has been increasing rapidly in China. For the last few years

Figure 4: Sum of Deal Value (% of GDP)



the median value in India has been gradually dropping in each year. Combined with the results from figures 1 & 2, the trend analysis suggests that US deals in China and India are potentially intrinsically different in nature, with India attracting smaller deals on average, but in larger numbers, while China attracting fewer deals but with higher value per deal.

To shed further light, we also undertook the same exercise by normalizing total deal value by different macro indicators, such as gross domestic product (GDP), foreign direct investment (FDI), and stock market capitalization of each country. Figure 4 shows the trend of the sum of total deal value as a percentage of the GDP in each year. All the GDP values are in 2018 US dollars adjusted by the GDP deflator of each country. For most of the time and for both China and India, the percentage fluctuates from 0.02% to 0.15%, indicating that the volume of total

deal values in both countries is quite small when expressed as a fraction of each country's GDP. However, the overall trend indicates, that India has seen a steadier trend line in total deal value as a percent of GDP compared to China, over the last two decades.

Figure 5: Sum of Deal Value (% of FDI)

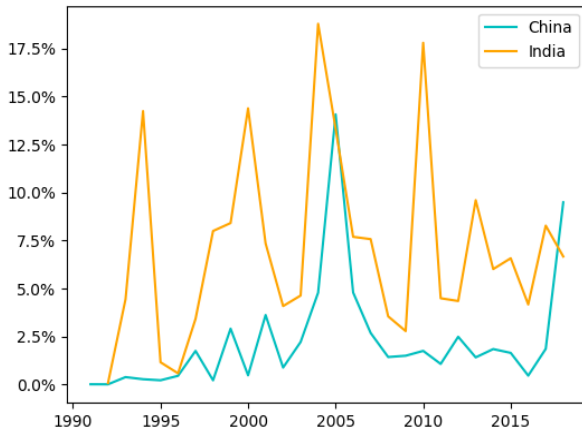
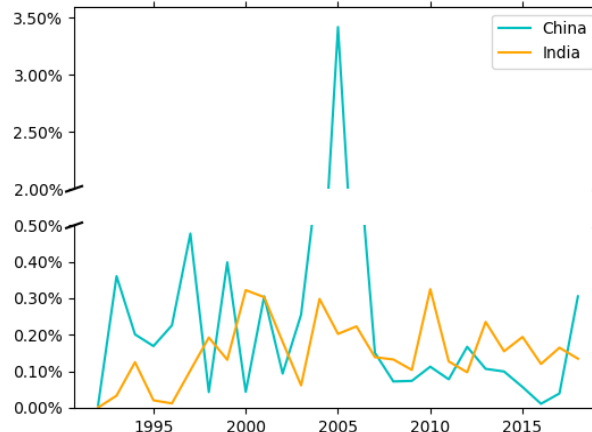
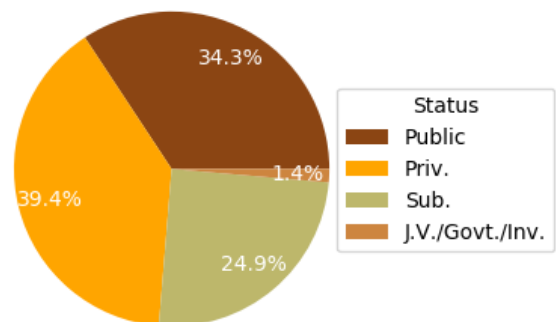
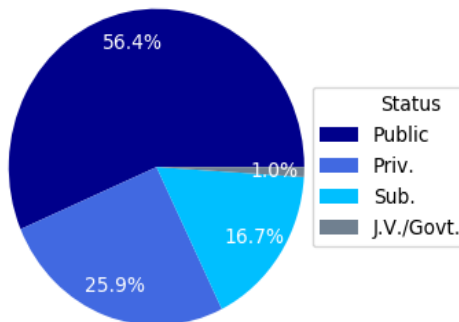


Figure 6: Sum of Deal Value (% of Market Cap)



Similar to the GDP analysis we further explore on the trends of sum of deal values as a percent of FDI and stock market capitalization. As shown in Figure 5, the percentage of total deal values over FDI inflow each year in India is much higher than that in China, indicating that M&A investments make up a higher share of FDI inflow to India than in China. Figure 6 on the right shows that, even though the peak reached to 3.5% in 2005 due to extreme deal value, the percent of total deal values over Stock Market Capitalization is still quite insignificant both for China and India. Overall, the trend analysis indicates lower value fluctuations in India as compared to China, when analyzing deal flows from the US.

Figure 7: Status Distribution of US Acquirors in China Figure 8: Status Distribution of US Acquirors in India



Figures 7 & 8 provides a look at the classification of US acquirors that invest in China and India. Compared to India, M&A deals in China have significantly more public acquirors from US, but fewer private acquirors. In addition, fewer US subsidiaries engage in China, relative to India. Joint ventures, government backed institutions, and financial acquirors make up approximately 1 to 1.5 percent in China and India, respectively. To understand whether the two countries have significant differences in these distributions, we conducted a double-sided *t*-test. Based on the results shown in Table 1, we can see that they have the significantly different distributions in public status and subsidiary status.

Figure 9: Status Distribution of Targets in China

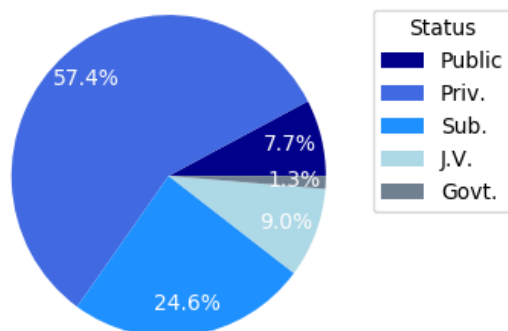
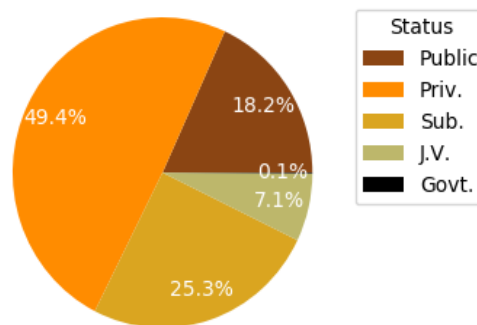


Figure 10: Status Distribution of Targets in India



Figures 9 and 10 above, show the status distribution for target firms in China and India. We can see from the pictures that, compared to India, China has more private companies that are acquired by US companies but fewer public companies that are acquired. In terms of US firms establishing subsidiaries or engaging in JVs in the two countries, we do not find any significant difference. The *t*-tests below in Table 1, also highlights these differences between the two countries.

Table 1: Double-Sided T-test Result for Status distribution in China and India

	t-value	p-value	P < 1%
Diff in Public Acquiror	3.0788	0.0033	Yes
Diff in Priv. Acquiror	-0.8948	0.3750	No
Diff in Sub. Acquiror	-3.2649	0.0022	Yes
Diff in Public Target	-4.4708	0.0001	Yes
Diff in Priv. Target	3.4141	0.0015	Yes
Diff in Sub. Target	0.3151	0.7540	No

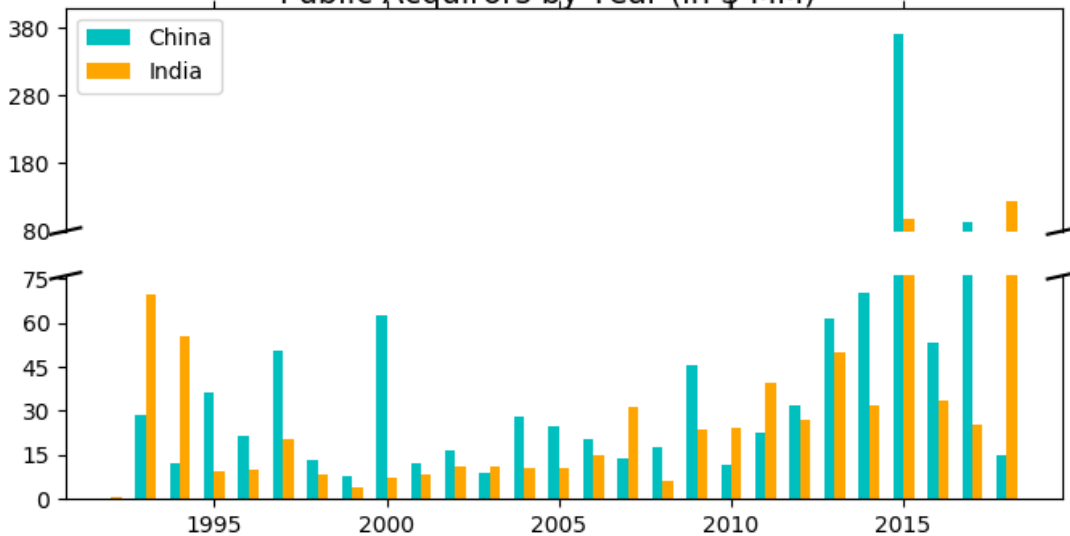
We finally, confirm the trends above by analyzing a couple of different sub-samples. First, we eliminate all JVs, since they account for a small portion of our sample, and only consider acquisition stakes. Figure 11 plots these results. As before, we find a similar trend on the median deal value for all types of M&A deals.

Figure 11: Median Deal Value of Acquisition Deals by Year (in \$ MM)



Similarly, as shown in Figure 12, we consider the median deal value by public US acquirors in China and India. The results indicate a growing trend in this respect over the last 5 years in both countries. While 2015 particularly stands out for China, 2018 shows significant deals by public US acquirors in India. Again, the overall trend for India seems more gradual, when looking at investment by public US acquirors.

Figure 12: Median Deal Value of Deals made by Public Acquirors by Year (in \$ MM)



Finally, we also take a look at the trend in the full acquisition deals, which means 100% ownership of the targets after the transaction. Figure 13 shows that the median deal value of this type of deal grew in China, gradually from 2000. Compared with the trend in China, India displayed relatively flat deal value throughout the years, except for 2016, when the median deal value was significantly higher. However, for all other years the median values were on average lower than that in China.

Figure 13: Median Deal Value of Full Acquisitions by Year (in \$ MM)



In conclusion, it should be noted, that our analysis does not take into account government regulations that exist in both countries with regard to equity stake ownership and its heterogeneity across industries, and hence should be interpreted with caution. This overview is only meant to stimulate discussion on the factors that are driving or impeding US cross border investments for corporate control in China and India.
