Financial Services, Economic Growth, and Well-Being: A Four-Pronged Study

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Abstract

A four-pronged approach to dealing with social science phenomenon is outlined in the present paper. This methodology is applied to financial services, economic growth, and well - being. The four prongs are like the four directions for an army general looking for victory. Just like the four directions, we need to be aware that there is a degree of interconnectedness in the following four prongs. Uncertainty principle of the social sciences; Responsibilities of fiscal janitors; Need for smaller organizations; Redirecting growth that generates garbage. The importance of gaining a more profound comprehension of welfare and delineating its components into those that result from an increase in goods and services, and hence can be attributed to economic growth and into those that are not related to economic growth, but lead to a better quality of life were highlighted in the paper. The reasoning being that economic growth alone is an inadequate indicator of well-being. Hand in hand with a better understanding of the characteristics of welfare comes the need to consider the metrics we currently have that gauge economic growth and supplement those with measures that capture well-being more holistically.

Keywords: **financial services, welfare, economic growth, social sciences, quality of life**

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The primary topic of consideration here is the relationship between the financial sector, the vibrancy of small and medium enterprises (SMEs), and economic growth. Easterly (2001) and Barro (1991, 1996) chronicled the various experiments at achieving growth across a cross-section of countries. The financial sector is considered, since it is a key ingredient for economic growth, and entrepreneurship is the beneficiary that utilizes financial services and materializes growth. Beck, Levine, and Loayza (2000) explored one factor underlying cross-country differences in total factor productivity growth, namely differences in the level of financial intermediary development. A primary question is whether increasing financialization changes the role of financial services from being the lubricant to becoming the fuel, for the engine of growth. Epstein (2005) defined financialization, broadly, as the increasing role of financial motives, financial markets, financial actors, and financial institutions in the operation of the domestic and international economies; and went on to a deeper discussion regarding the dimensions of financialization, its implications for economic stability, growth, income distribution, political power, and policy formulation.

All of this is, of course, a natural extension of studies that focus on variables that influence economic growth and fall under the wider category of increasing the welfare to society. It is worth considering this wider goal, at the outset, since the effective functioning of the financial sector is critically dependent on obtaining a deeper understanding of these factors, which are broadly classified into four groups, termed the four prongs. *The four prongs are like the four directions for an army general looking for victory. Any attempt at financial services reforms that does not consider all the four prongs will prove to be insufficient and will be incomplete at best.*

We need to consider all the four prongs because the first one tells us about the limitation of any relationships we uncover; the second tells us about the overriding need of the financial sector (or any social entity) and whether we

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are deviating from the intended goals; the third tells us that keeping complexity in check is important for accomplishing our objectives; and the fourth one tells us what unintended growth or outcomes, that provide no real benefits can result in, despite the care we take to adhere to the stipulations of the first three. Just like the four directions, we need to be aware that there is a degree of interconnectedness in the below mentioned four prongs.

(1) Uncertainty principle of the social sciences,
(2) Responsibilities of fiscal janitors,
(3) Need for smaller organizations,
(4) Redirecting growth that generates garbage.

It is important to gain a more profound comprehension of welfare and delineate its components into those that result from an increase in goods and services, and hence, can be attributed to economic growth, and into those that are not related to economic growth, but lead to a better quality of life. The reasoning being that economic growth alone is an inadequate indicator of well-being.

Hand in hand with a better understanding of the characteristics of welfare, comes the need to consider the metrics we currently have that gauge economic growth and supplement those with measures that capture well-being more holistically. There would be little sense in pursuing policies aimed at increasing some widely used metrics, like the GDP, if such policies do not lead to an increase in welfare and worse still, if they lead to an unintentional decrease in well-being; on a lighter note, it is worth pondering about which meaning of gross is applicable in the context of the GDP. The Stiglitz, Sen, and Fitoussi Report (2010a) highlighted the deficiencies in existing metrics, encapsulated an agenda for improvements, and discussed key areas on which further research is needed. These suggestions are crucial to construct new measures of well-being or supplement existing metrics.

Discussion of the Four Prongs

The ensuing discussion, with the use of several illustrative analogies, is meant to intuitively demonstrate the validity of the four prongs :

(1) Uncertainty Principle of the Social Sciences : In his monumental work, *The Poverty of Historicism (1957)*, Sir Karl Popper, said, "The human factor is the ultimately uncertain and wayward element in social life and in all social institutions. Indeed, this is the element which ultimately cannot be completely controlled …" (section 32, p. 158).

Paich and Sterman (1993) inquired into decision-making in complex environments by conducting an experiment where subjects manage a new product from launch through maturity, and make pricing and capacity decisions. They demonstrated that decision-making in complex dynamic environments tends to be flawed in specific ways by not accounting sufficiently for feedback loops, time delays, and nonlinearities. Even with a decent amount of experience, there is no evidence that environments with high feedback complexity can produce improved decision-making ability.

The literature is rife with attempts of prediction, ranging in scope from small neighborhoods of a few dozen people all the way up to nations responsible for the welfare of millions. Kashyap (2014a, 2014b) looked at the perils of the prediction business and put forth the uncertainty principle of the social sciences, stating the inverse relationship between the popularity of observations and the accuracy of related predictions. While the specifics of the discussion revolved around the theme of investing, the salient points have general applicability. An observation is likely to be more popular when there are more people comprising that system. It is important to try and explicitly understand, where possible, how predictions can go awry. Every social system then operates under the overarching reach of this principle. We could reflect upon the temporal and population scope variations of the predictions arising from models that relate financial services, economic growth, and welfare. The principle is

simply stated here, and the reader is referred to Kashyap (2014a) for an in-depth discussion. "Any generalization in the social sciences cannot be both popular and continue to yield predictions, or in other words, the more popular a particular generalization, the less accurate will be the predictions it yields" (pp. 246-247).

Bohnet and Zeckhauser (2004) and Bohnet, Greig, Herrmann, and Zeckhauser (2008) used the term "social risk" to describe situations where decisions by other human beings are the prime source of uncertainty. They found that people are less willing to take a risk when another person rather than nature determines the outcome. Taking a chance on whether another player proves trustworthy, risks incurring betrayal costs, costs shown to be above and beyond mere monetary losses. Due to betrayal aversion, people take risks less willingly when the agent of uncertainty is another person rather than nature.

Hattie and Timperley (2007) found that feedback can be a powerful influence on learning when built upon a foundation of initial learning and can be of little use where there is no surface information. While their discussion looks at feedback from a classroom perspective or other such learning environments, many participants in a social system implicitly assume the roles of teacher and student, and the mechanism of feedback based learning is constantly in play. Doidge (2007) presented classic cases from the frontiers of neuroscience that chronicled the biological changes happening in the brain driven by external impetuses, revealing that adapting to new circumstances and learning to deal with adversity are almost hard-wired into us. In essence, what they reveal is that the brain constantly changes as situations change.

With respect to the relationship between financial services and economic growth, as knowledge of a certain connection becomes available, it will attract the attention of many participants, who wish to benefit from it, leading to bubbles that eventually burst, and the cycle of booms and busts continues. The extent of impact, in terms of countries or institutions affected and the number of participants, will depend on how prevalent the instrument or group of instruments involved in the originally established connection are. We need to be cognizant of the temporal aspect of these changes - that the strength of the relationship and the upper limits in terms of the applicability of any patterns we unmask will be changing continuously.

(2) Responsibilities of Fiscal Janitors : We need to look at financial services activity that is leading to the formation of bubbles and assess the development in complexity of the services offered by the sector. Philippon and Reshef (2007) focused on the human capital dimension of financial services. The skill composition and relative wages from 1909 to 2005 revealed that deregulation has contributed to a significant increase in wages and the need for skilled labor. Corporate finance needs from the non-financial sector help explain the demand for skills in the financial industry. Tighter regulation is likely to lead to an outflow of human capital out of the financial industry. Whether this is desirable or not depends on one's views regarding economic externalities. Murphy, Shleifer, and Vishny (1991) and Philippon (2007) argued that the flow of talented individuals into law and financial services might not be categorically desirable, because social returns might be higher in other occupations, even though private returns are not.

Levine (2005, 1997), Arestis and Demetriades (1997), Arestis, Demetriades, and Luintel (2001), Basu and Guariglia (2007), Levine and Renelt (1992), King and Levine (1993a, 1993b, 1993c), and Levine and Zervos (1998) discussed at length the impact of financial services on growth. They considered different facets like the impact due to stock markets, entrepreneurship, financial liberalization, international trade, fiscal policy, monetary policy, political indicators, and foreign direct investment. Existing research suggests that the relationship is not just of financial services following economic growth or vice versa, and that there is much work required to study the co-evolution of growth and finance; and the relationship between financial structure and economic growth. What remains to be explained more comprehensively is whether and to what extent a market with lower financial transaction costs promotes innovation and stimulates the invention of new and better production technologies.

Borensztein, De- Gregorio, and Lee (1998) discussed the relative benefits of foreign direct investment to growth through the transfer of more advanced technology. They brought to focus the importance of the development of human capital in the recipient country for the welfare maximizing absorption of foreign

investment. Sharma and Kumar (2013) investigated the impact of banking reforms on the performance of public, private, and foreign banks in India. They found a significant impact on total income in the post-reform period for all bank groups. Selvakumar and Kathiravan (2009) discussed the importance of banking in a developing country, where banking habits are not well-formed. Bansal and Behal (2013) compared the performance of rurally predominant banks with their counterparts in urban areas, and suggested measures to penetrate the rural sector.

The Sweeney and Sweeney (1977) anecdote about the Capitol Hill baby-sitting crisis exposited the mechanics of inflation, setting interest rates, and monetary policies required to police an optimal amount of money. The creation of a monetary crisis in a small simple environment of good-hearted people expounds that even with near ideal conditions, things can become messy; then in a large labyrinthine atmosphere, disaster could be brewing without getting noticed and can strike without much premonition. This emphasizes the need to keep complexity at bay and establishing an ambience where repeated games can be played with public transparency, so that guileful practices can be curtailed.

The importance of this prong lies in the proposition that once there is more clarity on what needs to be done, then how to do it part becomes relatively less obscure, making it more straightforward to figure out ways to accomplish it. Another deterrent from a pure focus on one's duty is the fear and anxiety concerning the outcome. A practical way to counter this is to cultivate a mindset that concentrates on what needs to be done, rather than on what might happen if something were undertaken, as expressed succinctly in the wisdom of the ancients (Swami, 1983, Chapter 2, Verse 47) :

TEXT 47

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ॥ ४७ ॥

karmaṇy evādhikāras te

mā phalesu kadācana
mā karma-phaia-hetuT bhūr
mā te saiigo 'slv akarmani

SYNONYMS

karmani—in prescribed duties; *eva*—certainly; *adhikdārah*—right; *te*—of you; *mā*—never; *phalesu*—in the fruits; *kadācana*—at any time; *mā*—never; *karma-phala*—in the result of the work; *hetuh*—cause; *bhuh*—become; *mā*—never; *te*—of you; *srngah*—attachnient; *astu*—there should be; *akarmani*—in not doing prescribed duties.

TRANSLATION

You have a right to perform your prescribed duty, but you are not entitled to the fruits of action. Never consider yourself the cause of the results of your activities, and never be attached to not doing your duty.

Water gives life and sustains it. It is required everywhere, for life, as we know it, to exist. In a similar vein, it is hard to imagine an economy without money or money-equivalents. This comparison is only partly valid, since life, as we know it, would cease to prevail without water, while we can essentially have a barter economy without money-equivalents. Barring this key limitation, the smooth functioning of a practical modern economy requires the flow of money-equivalents (Mises, 1963).

Just as we have constructed devices and machines to control and divert the flow of water to maximize the growth of life, we have the financial services sector that has to control and divert the flow of money-equivalents to maximize the growth of an economy. Taking the analogy a step further, our central reservoirs, irrigation canals,

water tankers, pumping stations, pipes and water sprinklers are devised to keep water flowing around; similarly, centralized and regional financial institutions, wire transfers, credit cards, cheques, bank drafts, the Internet, and related technologies are meant to keep money-equivalents sloshing around. Beck, Demirgüç-Kunt, and Levine (2000) introduced a set of indicators of financial structure and financial development across countries and over time, that includes both banks and non- bank financial institutions.

We could construct different examples to elucidate instances where different amounts of water are required to fulfill various needs related to the growth of living creatures; likewise, different amounts of money-equivalents are required to satiate various needs of an economy. Watering the garden is like running a small store or business; a large irrigation system is like running an enterprise, the size of a manufacturing plant; or a fire truck sending water to a fire is like giving funds to a business that is in distress and could go bankrupt. Water is useful for many other purposes, like running industries that either directly or indirectly support life; while money, other than the odd instances we hear of someone using it for sleeping or bathing or as an item of decoration, is solely useful for economic activity. The uses of water for life like, cooking, drinking, cleaning, are similar to the uses of money for businesses like buying computers, paying salaries or rent. We can consider the different types of money-equivalents as different flavors of water pertaining to human life: bottled-water, soda, or juice. The people that come up with designs for devices that control and regulate the flow of water and keep it flowing are the engineers, hydrologists, water-plant operators, water-meter readers, plumbers, gardeners, farmers, fire-fighters, and so forth, collectively referred to as water handlers. Similarly, the people involved in designing mechanisms for the flow of money-equivalents and maintaining the flow are the financial engineers, traders, bankers, accountants, lawyers, and other financial-services staff, collectively referred to as the fiscal janitors.

Let us *imagine a situation where the civil engineers and other water handlers have an insatiable appetite for water, and instead of building a system that keeps the water flowing, wish to retain as much of the water for themselves as possible*, without raising a lot of eyebrows. The result would be that the growth and sustenance of life elsewhere is thwarted. The systems they design to carry water would be non-optimal, and instead of maximizing flow, it would have mechanisms built in, that would divert the water towards storage for themselves, or the mechanisms would send water to places from which the chances of the water coming back to them are higher. In essence, the water would not reach the places where it is most needed, but it would reach places from where the likelihood of it flowing back or getting diverted for alternate storage is higher. Imagine the consequences on the garden if the gardener, in return for services rendered, starts taking large swigs off the watering hose, equal in amount if not more, than the water tended to the plants; or an irrigation canal built to collect back or divert a high percentage of the water that is supposed to flow through it into the fields; what of a fire truck that will spray large amounts of water into a hidden storage tank instead of sending it entirely towards a raging fire. A micro analogy here can be regarding blood flow within organisms; imagine the aftereffects on the life of the organism, if the heart had a quenchless thirst for blood.

The natural system, of rainfall, or snowfall; accumulation of water in lakes; snow on the mountains or ice in the ice caps and glaciers; the snow melt or lake fed flow of rivers into the sea; the process of evaporation; condensation and the forming of clouds; and the dispersion of clouds by the wind; is a watering network, we should someday hope to emulate and has no strict parallels for now in our economy. The largest store of water in the oceans, with its saltiness, renders it useless for most purposes, acting as a natural deterrent for anyone who wishes to hoard it. The question of whether we have as much wealth as there is water in the oceans is a can of worms better left unopened for now. A quote by Mahatma Gandhi can be modified to infer that there is enough to satisfy every man's need, but not enough to satisfy one man's greed. Suffice it to say, without getting too philosophical, the Earth has enough resources to nourish all life on it. An affiliated concept is the expiration of money-equivalents. While inflation works like aging and weakens the value of money-equivalents, pragmatic methods of systematically perishing stockpiled reserves need to be explored.

This is a key problem of the financial-services industry. The people that are supposed to keep money-equivalents flowing around want to withhold as much of it for themselves as possible. Instead of finding ways to keep money circulating around, they are devising ways to attract and retain it. They are building money magnets as

opposed to building ways to pump money and keep it streaming around. Once the flow starts getting diverted away from productive endeavors, a vicious cycle sets in, creating more opportunities for people to enter the business of diverting the flow, to make a living, rather than being the recipients of the flow, and using it for other activities. The brightest people get drawn, perhaps involuntarily, to design flawed systems that retain most of the flow, instead of sending it where it is needed most.

There are four ways to circumvent this issue; one, by having people in the financial-service industry that do not want to earn exorbitant compensations. This stricture is rather hard to assuage, since the financial industry, currently known for high salaries, tends to attract people who wish to earn huge sums of money. The claim that most people have an insatiable appetite for money and are eager to earn large sums, making this a harder option to implement, wouldn't be entirely untrue. Two, financial services could operate against the profit-maximizing ideal of businesses, with the danger that we might have large inefficient bureaucracies. Three, centralized institutions can keep printing new money, or introducing new money-equivalents, whenever the circulation dries up. This brings with it a whole host of other problems, and again leads to more proliferation in the hands of those with the more powerful money magnets. Four, restrict the amount of flow that a certain financial institution has access to; since the lesser the flow, the lesser will be the amount available to divert or retain. This premise naturally leads us to consider the need for smaller financial organizations.

(3) Need for Smaller Organizations : Beck (2008) mentioned that bank size is positively correlated with complexity so that large banks are harder to monitor than small banks. De-Nicolo (2001) argued that bank consolidation is likely to result in an average increase in bank's insolvency risk. Beck and Demirguc-Kunt (2006) found that small firms face larger growth constraints and have less access to formal sources of external finance, potentially explaining their lack of contribution to growth. This highlights the issue that larger organizations could crowd out smaller ones, since the pseudo-stability they display, will guzzle away resources from smaller organizations. De-la-Torre, Martínez Peria, and Schmukle (2010) questioned the common wisdom that SMEs are neglected by most banks because their chronic opacity makes them substantially (if not entirely) dependent on relationship lending, for which niche banks have a natural comparative advantage, yet they are unable to answer the bigger question - whether SMEs are receiving adequate financing. Opaqueness here means that it is difficult to ascertain if firms have the capacity to pay (have viable projects) and/or the willingness to pay (due to moral hazards). This opaqueness particularly undermines lending from institutions that engage in more impersonal or arms-length financing that requires hard, objective, and transparent information.

Acs and Varga (2005) highlighted two important proxy measures of the existence of entrepreneurial opportunity, the tendency of people to engage in self-employment, and the tendency of people to start new firms. Using data from the Global Entrepreneurship Monitor (GEM) project, they examined the relationship between entrepreneurship, knowledge spillovers, and economic growth. There are manifold ways to measure entrepreneurial activity. One overbearing dissimilitude is between opportunity-based entrepreneurial activity and necessity-based entrepreneurial activity. Opportunity entrepreneurship represents the voluntary nature of participation, and necessity reflects the individual's perception that such actions presented the best option available for employment, but not necessarily the preferred option. Opportunity entrepreneurship differs from necessity by sector of industry and with respect to growth aspirations. Opportunity entrepreneurs expect their ventures to produce high-growth firms and provide more new jobs. Measures of entrepreneurial activity need to factor in this distinction. Bockstette, Chanda, and Putterman (2002) constructed an index that captures the length of state experience. Countries that have a longer experience with state-level institutions have higher political stability, institutional quality, and economic growth. A measure that captures the depth and history of entrepreneurial culture is a welcome supplement to the level of entrepreneurial activity.

Acs and Varga (2002) hypothesized that any spatialized theory of technology led regional economic growth needs to reflect three fundamental issues. First, it should provide an explanation of why knowledge related economic activities start concentrating in certain regions, leaving others relatively underdeveloped; second, it needs to answer the questions of how technological advances occur and what the key processes and institutions

involved are; and third, it has to present an analytical framework in which the role of technological change in regional economic growth is clearly explained.

The water circulation analogy highlights the need for organizations that are meant to be pumping money around to be small, since they could then keep less of it for themselves. Smaller size also means that it would be easier to check what the institutions and the people involved are doing. Linck, Netter, and Yang (2009) argued that the requirements of the Sarbanes Oxley Act have increased the demand and reduced the supply of directors, and there is a potential adverse impact on smaller public firms due to increased compensation burden. The increased monitoring burden imposed upon organizations is working to the detriment of smaller organizations, which might need lesser surveillance than their larger counterparts. We need to look at the argument that if organizations are small, there would be many such institutions, making it a harder task to monitor them.

With the reduced scope of smaller financial institutions, there would be a stronger relationship between the service provider and the served. The smaller size leads to more number of superior quality interactions between the same parties, leading to a repeated game setting, which produces more cooperative behavior. *The strengthened relationship effectively acts as an enforcement agent towards both the parties*. The smaller institution cannot extract large rents for itself, since otherwise, it would cease to be competitive against the myriad number of smaller institutions that are vying for business, and such actions would deter people from doing business with it. The people that are benefitting from the services of an institution would be under close scrutiny from the institution itself, which bears the burden of ensuring that its services are put to the best use possible, since that is integral for its own survival. Agents are driven against myopic self-motivated behavior, since maximal benefits accrue by acting with a longer-term vision.

Porta, Lopez-De-Silane, Shleifer, and Vishny (1996) argued that trust is an important ingredient to ensure cooperative behavior. They further mentioned that while trust might be easier to establish in smaller settings, where repeated games can be played that present opportunities to seek corrective actions for previous wrongs, even in larger societies with a greater level of trust, cooperative outcomes can be observed. What this tells us that all else being equal, a smaller setting is better for coordinating efforts. *Smaller size reduces complexity in many ways, and makes it harder to hide things under the rug*. This makes it tougher for corruption or other illegal episodes to happen. Systemic failures, wherein most organizations in a sector are severely affected in a negative way, are less likely, since we have many small organizations, and the degree of interconnectedness will be lower. Acharya (2009) and Acharya, Pedersen, Philippon, and Richardson (2010) looked at ways to measure systemic risk and the design of prudent bank regulations.

The actual provision of service through different forms of money-equivalents and questions regarding which one is better suited become a secondary concern, since they are simply different contractual terms, involving different parties. *Any setup where the players involved have a fundamental incentive to be on best behavior, functions better than other alternate possibilities.* The analogy about the insatiable appetite for money applies to all organizations, not just financial ones. Instead of being immersed in a pursuit that maximizes a particular kind of output, the organization and its people will engage in practices that are aimed at collecting the most amounts of money-equivalents. The current implicit consensus on this front is that maximizing the collection of money-equivalents will produce the peak amount of output. The associated growth in output might or might not end up as showing the maximum amount of GDP; even if we can make a case that it will result in the highest amount of GDP growth, we can show that it will not result in the most amount of growth that is favorable to society and does not bring welfare to most number of people.

As organizations grow bigger, a greater proportion of the individuals who are part of it become involved in just making sure things are running smoothly. This takes people away from becoming involved with the actual generation of ideas or producing a tangible output or adding to real growth. This is especially true in the financial-services sector, where the amount of innovation is empirically known to be lesser than it is in other sectors. Innovation and intelligence, despite their importance, are less important than integrity in financial-services; there is no need for geniuses to make loans or conduct other financial transactions, we simply need more transparency, which will result in more fairness and the right thing being done. Honesty is not entirely innate; it can be instilled,

and it follows from the recognition that human conduct is usually a response to the incentives and situations. While formal attempts at tracing the impact of integrity on the functioning of financial institutions are worthwhile; a simpler argument, that smaller organizations with less complexity create a better alignment of incentives and give rise to an environment where it is harder to hide immoral incidents and foster more righteous behavior, can be shown to hold water. Acharya and Richardson (2009) discussed structuring compensation and other ways to accomplish judicious incentives, though there was no direct mention of reducing the size of organizations.

We could raise the point that the compensation of executives in large firms can be monitored and going this route would be easier than having to monitor thousands of smaller firms. The rebuttal for this would be that when someone has access to large amounts of money, the chances of misappropriation are higher than when there is no access to large amounts. The recent financial crisis had instances where large bonuses were paid out even by firms that were receiving bailout funds from the government, under the excuse of retaining talent, among others. While it is not entirely inappropriate to impose limits on executive compensations, it is highly likely that clever modes of excessive compensation will be devised, when there is access to siphon large amounts of money. The story of Sergey Bubka, the pole-vaulter who broke the world record 35 times, illustrates the limits of raising the regulatory bar. Each time the pole was raised, he would jump higher. This is also about the system of governance. Simply put, should the state interfere with the specifics of how a firm is run or should the state restrict the main activities of a firm ? The later sections consider this in further detail, but without digressing much farther, we can surmise that giving the state power over everyday affairs can be disastrous.

Does size matter? Does large size lead to stability? Turning to nature again for inspiration, we don't see excessively large organisms, despite some creatures that never stop growing. Similarly, organizations have a tendency to grow. We are a growth obsessed society. A mindset that tolerates the omnipresent stressor of competition and celebrates the birth and death of organizations helps prevent abnormal growth. The pseudo-stability of big organizations can cause disasters when they fail, since most systems can cope better with many small continuous demises than a few large sudden deaths. *Size does matter.* Bigger organizations could hide inefficient parts and subsidize their existence. The argument about economies of scale is not as applicable today, because we use automation and machines extensively for agriculture and producing goods. Organizations are knowledge based as opposed to traditional manufacturing, for which such a production term needs to be applied. If organizations are to be small, it is helpful to have a climate that facilitates entrepreneurial activity, allowing the easy birth and growth of new businesses, and where large organizations do not stifle smaller ones.

Diamond (1997) traced the historical development of the trend towards bigger organizations, supported by bigger communities, which leads us to the key stimulus that was the surplus generated by superior modes of agricultural production. This made possible the establishment of a non-producing class, whose members were crucial for the rapid development of writing, science, cities, technology-based military prowess, and formation of states. Dense population centers that could be supported near these lush agricultural centers had a greater exchange of ideas, bringing new innovations into force, and allowing the extraction of rents from a larger number of individuals who came to depend on these new products that were fed by the invention spree.

The blessings of large population centers, on the sciences and the arts, have been tremendous. Development of regions like Silicon Valley in California or Broadway in New York is due to the rapid exchange of ideas. While the benefits of dense populations accrue up to a certain point, the negatives of overcrowding, shortage of resources, and diminishing returns set in after a certain stage, giving rise to increasing disparities between the residents in these packed colonies. The widespread use of technology to connect people facilitates interaction among relatively far flung dwellings, removing the need for the congregation of individuals to accelerate the pace of evolution of human civilization.

This prong is the most important one, since if we get this right, the reduced size and complexity helps realize the limitations; aids in the detection of variations from the expectations; ensures that the responsibilities and incentives of the parties involved are aligned with the original targets and continue to stay aligned; and makes it easier to ascertain the unintended consequences of any efforts, which are hard to completely eliminate, as we will see next.

(4) Redirecting Growth that Generates Garbage : Tornell and Westermann (2000) found that lending booms that sometimes end in twin currency and banking crises have typically followed financial liberalizations. Lots of empirical work remains to be done to better characterize the mechanisms that underlie the boom-bust cycle, especially relating these cycles to the size of firms and across different sectors.

Paiche and Sterman (1993) showed that poor decision making in complex production systems can create pervasive booms and busts, where new products can have exponential sales increases, fuelling rapid growth, often leading to overcapacity, price wars, and bankruptcy.

Ye, Yao, and Gai (2012) confirmed the old adage, speed thrills but kills. They found evidence that increasing the speed of trading from the microsecond level to the nanosecond level leads to dramatic increases in message flow. The increases in message flow are largely due to increases in order cancellations without any real increases to actual trading volume. Spread does not decrease following increase in speed; market efficiency, in terms of price formation, does not improve; market depth decreases and short-term volatility increases, probably as a consequence of more cancellations. A fight for speed increases high-frequency order cancellation but not real high-frequency order execution. Increased cancellation generates more noise to the message flow. Low-frequency traders then subsidize high-frequency traders because only executed trades are charged a fee.

The exchanges continually make costly system enhancements to accommodate higher message flow, but these enhancements facilitate further order cancellations, not increases in trading volume. Investment in high-frequency trading with sub-millisecond accuracy may provide a private benefit to traders without consummate social benefit; therefore, there may be an overinvestment in speed.

The water propagation analogy alerts us to the aspect that flow could get diverted not where it is required most, but where certain parties might retain most of it. This could lead to growth that does not produce the most amount of welfare, which means, if all the growth is not leading to welfare, there must be some growth generating garbage. A part of the growth, as we currently measure it, results from the back and forth flow of either water or money-equivalents, away from the intended destination, wasteful to the final goal of maximizing welfare. This can be compared to the trading of assets frequently, which does not result in real growth, but appears to give the illusion of progress. High frequency trading (HFT) then becomes a higher speed of water flowing back and forth, not helping growth happen in the places where it supposed to happen.

The point that requires further consideration is whether HFT leads to benefits by either directly providing additional liquidity or indirectly via the spawning of numerous technological innovations in computer networking hardware, software, or other items used to facilitate HFT, which can then be beneficial to other sectors. An example that concerns high speeds is from the car racing industry, which comes up with innovations that produce faster and safer cars. Many of these innovations slip into the mainstream automobile industry over time. Completely restricting any endeavor is not ideal since it is hard to know where the next life-changing idea might spring up; however, regulating the dangerous or unfavorable ones is prudent. Learning further from this example, we do not see race cars cruising down our town streets (though, it is not something to rule out entirely in the not too distant future); they hustle around in an exclusive arena, indicating that perhaps we need a similar mandate for the HFT industry.

Another example regarding growth that does not add significantly to the welfare bottom-line is set in a hypothetical country where everyone is buying a certain kind of new cup, which, in addition to its benefits as a holder of fluids, looks nice and is bought just as a curio. This cup has become such a huge success that people are buying it, in multiple quantities, just to keep it in their living room bookshelves along with their other collectibles. A lot of effort will go into making such cups and selling them. Dozens of copycat manufacturers enter this business, and soon we have a thriving economy running on cup making and selling. This increased purchasing of the cup will raise the GDP growth in two ways, one directly through the higher number of cups being sold; the other through the increased price of the cups, as more demand pushes the price up. A safe assumption would be that other ancillary industries like graphic-design, material research, and so forth would spring up to support this cup making. This continues for a while, the GDP and economic growth increase by leaps and bounds, eventually leading to a bubble, when the prices of cups reach a point, prompting the question, "Is this cup too expensive?"

This is a rather involved topic since the state of pseudo-equilibrium, with increasing prices and selling of cups, can continue for long periods of time, without the realization of being in a bubble. One indicator of a bubble is - price increases in any sector have outpaced price increases in other sectors and the median wage growth of the corresponding population.

Some participants in the cup making industry - the manufacturers and sellers of the cups, the people that finance the growth of this industry by lending credit for new entrants and for subsequent expansions - accumulate a large share of money-equivalents. When the bubble bursts, the same economy will be selling fewer cups at lesser prices, and probably even show a recession. Given the simplified nature of the example, let us ignore that the money stashed by certain participants could get used in other areas, fuelling growth elsewhere. This again could be the growth that leads to welfare or the other kind of growth that generates garbage, both literally and figuratively.

Any claim that a collapse of this cup economy is having a severe negative effect on the lives of its citizens is dubious. We can consider three scenarios: One with a completely closed economy, with no exports or imports; one that is partly closed; and one that is entirely open. *Under all three cases, the presence or absence of a few extra cups will not create a delightful paradise or lead to abject misery*. What would differ is the extent of deficit in the imports of food and other must-haves, fueled by the purchasing power of cup exports. Instead of a cup, our example works equally well with any number of items like cell-phone covers, drink-umbrellas, watch-straps, or even cell-phones or watches, *since the question of what is absolutely imperative to lead a good life is a constantly changing one, as luxuries end up becoming necessities*. If we take a moment to evaluate what really brings welfare, we can make the affirmation that welfare results mostly from the increased production of essential consumption goods and from the reduction of uncertainty in their procurement. Hence, any growth that is happening in certain sectors of the economy is more vital to the well-being of the masses than certain others.

To determine what is intrinsic to well-being, requires acknowledging its subjectivity. *Poverty is a state of mind.* Layard (2010) talked about surveys in the United States that showed no increase in happiness over the past 60 years, reflecting the fact that higher national income has not brought a better quality of life that many expected. The science of subjective well-being is young, but it is developed enough to know that we need to collect data, and make it a prime objective to quantitatively study the determinants of well-being, so that it can be used in policy analysis.

We need to scrutinize the metrics we have to measure welfare. Surely, GDP is insufficient and misleading (Stiglitz, Sen, & Fitoussi, 2010b). We need metrics that measure the distribution of consumption goods and supplement those with measures that gauge how quality of life improves. The level of health and education would be important. In addition, we need sound measurement of employment security; the amount of leisure spells people have; environmental factors relating to air, water, noise pollution; personal safety against crimes and conflicts; social factors like availability of support in case of need; freedom to express oneself; political participation ; and lastly, sustainable ways of production, which boils down to making sure that what we produce today can continue to be produced with minimal impact to the environment and being able to maintain the current level of well-being for future generations.

If governments or any organizations start intervening to set strict limits on production, on the amount and manner in which people consume and live, the results could be catastrophic and lead to too much state control, or socialism, or even communism (Hayek, 2009; Marx & Engels, 1848 are seminal works). The other extreme is completely free markets, or capitalism, which as we are realizing, will lead to huge inequalities in society. While it is hard to draw a strict line between these two modes of governance, we need elements from both models of governance and economic policy. Our earlier discussion on the advantages of smaller size firms applies here, wherein, with the prevalence of smaller organizations, incentives would be aligned such that it becomes easier to spot wrongful conduct, and identify deviations from intended outcomes, leading to better governance with lesser monitoring.

Research Implications, Limitations of the Study, and Scope for Further Research

We looked at several analogies that have substantiated the coherence of the four-pronged approach. By considering each prong in isolation and then integrating the findings, it becomes relatively less effortful to establish different aspects of what would be crucial to increasing welfare and the limitations of any such recommendation.

By recognizing the gap that exists between the fundamentals that drive the behavior of social entities, and the expected outcomes of their actions, primarily in the financial-services, it becomes comparatively straight forward to set incentives that can maximize welfare. If we start by reducing the size of institutions, it becomes easier to monitor them, and a certain level of self-governance is put into place. The other prongs then follow somewhat naturally. Where there are diversions from what is desired, the reduced complexity allows corrective mechanisms to be administered with less effort.

It is worthwhile to mention that for most assertions made above, numerous counter examples and alternate hypothesis can be produced. These are strictly attempts at tracing the essentials rather than getting bogged down with a specific instance. However, any study requires forming a conceptual framework based on the more common observations, yet being highly attuned to any specifics that can stray from the usual. Furthermore, for the sake of brevity, a number of finer points have been omitted and certain simplifying assumptions have been made. Given the breadth of the hypothesis, future versions will continue to amplify these affirmations ; also, drawbacks are hard to avoid and future iterations will seek to address these as they are discovered.

Sticking to the conceptual nature of the paper, the attempt is to clarify what needs to be done. If we agree on this, the rest becomes easier, since a huge part of any achievement is knowing what exactly to accomplish. Even if the how to do it part becomes less hazy, much work needs to be done on how to go about fulfilling these objectives. An appendix with the groundwork to create a rigorous theoretical framework and formal empirical verifications of these declarations is publicly available. For the sake of completeness, we need to consider as many relevant questions as possible and undertake the efforts to answer them. We need to be mindful of the fact that it will be a mammoth effort to answer all the questions; hence, we need to start with the questions that have an immediate connection with the financial services sector and welfare; and weave in the others as the various constraints dictate.

We need to probe the effects of the four prongs by exploring existing models and building new ones. Once data from various sources have been assembled into a suitable panel, and various econometric checks have been done, it is a relatively mechanical process to keep spitting out different models required to uncloak the patterns and relationships among the variables. The data-gathering aspect, given the different types of data and length of history of the variables, becomes a highly important part of subsequent studies, and given that we will not be able to collect all the required data at any given point in time; this will be an ongoing process. It is also highly improbable to think that we will be able to identify all the required data at any point; but the key takeaway for next steps is that we need to work with what we have, and supplement the data set as new data elements become available or get constructed. A certain amount of creativity is warranted in selecting the right variables or modified forms of the variables in the analysis; however, the method of operation will be quite unambiguous.

Are the above problems simply manifestations of human nature, in seeking insurance or protection for the uncertainty in our lives and for the constant need we have to move from our current state to a so called better state? To find the answers, perhaps, we need to probe further, into related areas of sociology.

The dynamic nature of any social-science system, like the financial-services sector, means that the limited predictive ability of any awareness will necessitate periodic reviews and the prescription of corrective programs. It is hoped that this work will set the stage for an investigative methodology using the four-pronged approach, specifically in economic activity and the social sciences in general, and will lead to the formulation of appropriate policies. While this seems like a lofty ambition, the saying "aim for the stars or the skies and you will reach the tree tops" is the driving force behind this composition.

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