Power, Profits and Inflation

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Abstract: *Our analysis seeks to look at inflation as a political economic phenomenon, based on a framework devised by Jonathan Nitzan and christened differential accumulation. The theory of differential accumulation rejects the conventional definitions of capital and draws upon Veblenian economics to integrate the definitions of power and capital by describing the ownership of capital as differential power claims over social processes. In order to maximize capital accumulation, businessmen allocate resources, in response to the socio-political environment, to beat a certain benchmark rate of return in their pursuit of maximizing capital accumulation. We find evidence for the existence of this phenomenon in Pakistan by assuming that a certain group of businessmen seeks to maximize power by maximizing relative profit, which in turn affects overall inflation. However, we have not established proof through a scientifically rigorous process due to incomplete datasets. We believe that these findings merit further investigation and propose that the maximization of relative profit as opposed to absolute profit, may, in fact, be a behavioral phenomenon. Such a finding will merely be the doppelganger of the maximization of relative utility, as opposed to absolute utility, in consumer decision-making models.*

1. Introduction

The economy of Pakistan presented a sobering picture at the end of FY09. Inflation reached an unprecedented level of 25.3 percent in August 2008 and rested at 17.2 percent (year-on-year) as of April 2009. GDP growth had slowed to 3.7 percent for 2008 and 1.2 percent for 2009. Supply side shocks could be used as one explanation for the levels of inflation. Such shocks included rising global fuel prices and rising food prices. It would seem that this recent bout of inflation can be adequately explained through supply side economics. In April 2009, sharp declines in the global prices of both fuel and food, amongst other commodities,

were witnessed. Inflation, however, is still hovering at near-record levels. Perhaps even more worrying is the fact that core (non-food, non-energy) inflation has hardly changed in the past year or so. Inflation was proving to be more resilient than expected.

In response, the State Bank of Pakistan increased the discount rate, while keeping a stringent check on money supply. The policy begs the question: Is inflation a purely monetarist phenomenon in Pakistan? There have been a number of empirical studies carried out in order to determine the relationship between money supply and inflation. However, they have yielded wildly contrasting results. Chaudhry and Chaudhary (2006) contrasted the GDP deflator with M2, real GDP and import prices and reached the conclusion that M2 is insignificant. Using data from almost the same years (albeit quarterly), Bokil and Schimmelpfennig (2005) contrasted CPI inflation with M2, GDP and an LSM index and concluded that M2 is, in fact, highly significant. We can, therefore, tentatively conclude that the hypothesis that inflation in Pakistan as a pure monetary phenomenon has its fair share of proponents and opponents. Of course, the question of if, and how much of, inflation is a monetary phenomenon remains unanswered.

Mainstream neoclassical economics also argues the incidence of business cycles in an economy. Over time any economy goes through periods of high growth and high inflation, while low growth is accompanied by low inflation. On the contrary, stagflation i.e. low growth and high inflation has been a conundrum for staunch advocates of the business cycle. In Pakistan, our analysis[1] revealed that inflation and growth shared an extremely weak, but *negative* and statistically insignificant, relationship. A cursory review of the literature on the topic does little to prove the notion that inflation in Pakistan is pro-cyclical. While not discounting the validity of either supply side economics or monetarism, we sought to explain inflation in Pakistan as a syndrome of a politico-economic phenomenon called differential accumulation.

To this end, the paper first introduces in Section 2 the theory of differential accumulation that has been put forth by Nitzan. The section introduces Veblen as the forerunner of the theory and builds upon the dissociation of management and ownership of businesses in a largely capitalist economy to suggest an alternative lens for the basis of the political economy. It then presents differential accumulation as an evolution of Veblen's hypothesis and attempts to draw parallels with the Pakistan case. Section 3 outlines the assumptions incorporated and methodology employed for data collection and analysis. Section 4 presents the

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[1] A simple correlation test for the period 1990-2009.

findings of the analysis and Section 5 discusses the results and attempts to paint a likely picture of the Pakistani political economy. Section 6 discusses the limitations of the theory and the model, discusses further avenues for research and presents the possibility of the application of behavioral economics in the producers' function and policy implications.

2. Differential accumulation

A case of Veblenian sabotage

The height of the industrial revolution and the birth of modern day capitalism coincided with the birth of neoclassical economics. However, Veblen was less than impressed by the emphasis neoclassicists placed on factor productivity. In *The Theory of Business Enterprise*, Veblen (1904) , there was a clear dissection between "technicians" and "businessmen". While the former strived for maximum productivity, the latter were solely concerned with pecuniary gain and the outcome was usually "an accumulation of wealth". Money for the modern businessman, he argued, was not a medium of exchange, but a "negotiable instrument". Furthermore, the classical notion of the entrepreneur as the factor responsible for "the coordinating of industrial processes with a view to economics of production and heightened serviceability" had nothing but "sentimental value". Since the motives of the businessmen were solely pecuniary gain, notions of "workmanship" and "serviceability" served only to distract from business efficiency.

Veblen, therefore, established two distinct spheres of society. "Industry" represented the entire societal process of production, while "business" represented the absentee owner(s). In years gone by, he claimed, "captains of industry", who owned and managed production, found it in their self-interest to "make and maintain business conditions which shall facilitate the smooth and efficient working of the industry" because "the gains… in the way of the industrial plant are greater the higher and more uninterrupted its industrial efficiency." Unfortunately, with the advent of the 19th century, the captain of industry no longer remained the owner and manager of his industrial unit. In Veblen's eyes, "the material processes of industry are under the control of men whose interest centers on an increased value of immaterial assets". A dissection between ownership and management had developed.

The businessman did not share the captain of industry's drive for productive efficiency. The control of such properties was primarily "as a basis for further transactions out of which gain is expected". Therefore, Veblen argues, his motives are not aligned with "maintaining the permanent efficiency of the industrial equipment, but to influencing the tone of the market for the time being…" The

expected gain is decidedly pecuniary in nature, but such gains are not an ends unto themselves. Rather, these gains may be used as a form of "pecuniary coercion" in pursuit of their strategy. Struggles between rival businessmen often culminate in "pecuniary damage", which derails the industrial system at large.

These struggles are little more than the antagonist business sphere flexing its power in the industrial sphere. In our times (and indeed Veblen's), it is businessmen with the incentives of pecuniary gain and power, not technicians, who operate industry. Veblen argued that the pecuniary gains of business were only dependent on the extent of control it could exercise over the industry. More precisely, the gains were limited to the extent business could control the distribution of income from industry, a concept that finds similarity with Marxist economics. Thus, increases in productivity and efficiency could potentially threaten to erode their gains and reform the existing distribution of income. Veblen used the term "industrial sabotage" to describe "the right [of businessmen] to keep the work out of the hands of the workmen and the product out of the market". Therefore, the symptoms of Veblenian sabotage are underutilization (waste) of capital, declining production and rising prices.

This argument would necessarily mean that there is an optimal point for nominal profit. Deviance from this peak would result in either too much production or too little production. While too little production leaves potential for more profit, it is too much production that businessmen are often wary of. The latter causes excess output, falling prices, excessive price competition and inevitably, falling profit. Thus, the degree of control that the business sphere can exert over the industrial sphere dictates their pecuniary gain.

A dominant sphere of businessmen with stakes in almost every aspect of Pakistan's economy was first pointed out by Mahbub ul Haq, a former deputy chairman of the Planning Commission, in an address in Karachi in 1967 during which he referred to the 22 families that controlled 86 percent of the country's banking assets and 68 percent of the country's manufacturing assets.[2] Pakistan's economy has also gone through stagflation (in the sense of low growth and high inflation), although inflation has generally never progressed into the realm of hyperinflation. Furthermore, the documentation of infamous cartels in various industries has left little room for doubt on the pricing practices of certain

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[2] See Haq (1973) at http://www.mhhdc.org/html/speeches.htm

enterprises.[3] The conditions for Veblenian sabotage seem to be in place. On this note, we would like to point out Nitzan's objections to both classical and Marxian definitions of capital (included in Appendix 1) and present the theory of differential accumulation.

The theory of differential accumulation
Nitzan presented an alternative model for the political economy that contained Veblen's institutionalist critique at its heart. Nitzan argues that although the spheres of power and capital have historically remained distinct, the two are intrinsically linked. Thus, Nitzan attempts to integrate power into the very definition of capital. He hypothesizes that "the value of capital represents *a distributional claim*" (Nitzan, 1998). The claim is manifested partially through ownership and "more broadly through *the whole social spectrum of power*". Thus, for the absentee owner, as proposed by Veblen, the ultimate aim is NOT the maximization of profit. Rather, according to Nitzan, the ultimate goal of the absentee owner is to "beat the average". Thus, he concludes, that the ultimate gain of business is differential gain. The differential aspect of accumulation is then used to integrate power into capital.

Nitzan argues that the power of capitalists must be measured relative to other capitalists. The notion of maximizing profit is one that is derived from the notion that profit provides a means of consumption and hence, greater profit allows for greater consumption and greater utility. However, beyond a certain point, and with the rise of the absentee owner, profit has become an end in itself. Thus, the capitalist's motive is not to maximize profit. Rather, in congruence with the integration of power into the definition of capital, the capitalist's incentive is to surpass a normal rate of return or to beat the average level of profit. This benchmark is dependent on the sphere that the capitalist considers himself to be a part of. Therefore, Nitzan defines capital as "*differential power claim over the social process*".

Amongst the avenues of obtaining and retaining abnormal profit is the tacit formation of coalitions within sectors of industry. Such coalitions derive their power from the exclusion of others from claims over the societal process of production. These coalitions form the "dominant" sphere in Nitzan's analysis: the core of the capitalist process that strives to sustain its power over social processes. Beyond the core, lies the periphery of capital; smaller, more disintegrated units of

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[3] The Competition Commission of Pakistan (previously the Monopoly Control Authority) has found numerous instances of anti-competitive price practices in the sugar, cement and textile industries, amongst others. A comprehensive list may be found on: http://www.cc.gov.pk/index.php?option=com_content&view=article&id=168&Itemid=41

capital that pose a constant challenge to the core. Only by keeping the periphery at bay can the core exercise its power over the political economy.

This differential process of accumulation is one by which the core grows over time as it acquires greater power to achieve larger re-distributional ownership claims over social resources.   Another way to consider the process of differential accumulation, according to Nitzan, is the acquisition of crystallized streams of future earnings not for the pure hedonistic ends, but for the crystallization of power, via ownership of social resources that such an acquisition implies, that these streams represent.

It is only a matter of time then that the core expands and dominates its sphere to such an extent that beating the average is inconsequential since the core is the average. When this happens, the core seeks to expand its sphere of reference to other comparables.

The sphere that the core works in, or the reference point the core sets as a benchmark, then assumes greater significance in this model of political economy. Nitzan explains that this sphere is dynamic and is a function of how the core views itself in the larger economy. As an example, let's start off with a large sugar mill owner. The sphere the mill owner will operate in will be the sugar industry and his reference point will be the average profit of the sugar industry. If the mill owner acquires a flour and rice mill, then his reference point will change to the average profit of the overall agricultural milling sector and his sphere of operation will be enlarged. As the businessman progresses to operating in other unrelated industries, his reference point changes again. If the businessman invests abroad, his sphere of operation will then be a more global one and his reference point will change to a regional or perhaps an international benchmark. Nitzan call the phenomenon of the core entering a new domain, having saturated the old one, and shifting its reference point and sphere of influence, "breaking the envelope" (Nitzan, 2001).

Nitzan further hypothesizes that differential accumulation operates in different "regimes": breadth and depth, both of which have two separate subcategories of internal and external (Nitzan and Bichler, 2001). In his analysis, Nitzan breaks profit into number of employees (or generally, the quantity of factors of production employed) and profit per employee (Nitzan and Bichler, 2000). Dominant capital can engage in differential accumulation by increasing the number of employees faster than average or by increasing their profit per employee faster than average or some combination of the two. The former process has been labeled as an increase in breadth by Nitzan and the latter has been labeled as an increase in depth.

A brief explanation of each combination is in order:

1. *External breadth:* A firm can expand production faster than the average. This can be achieved by adding new capacity, hiring more employees, etc. faster than the average firm in the economy. The upper limit of this method is the extent of hiring or capacity that is logistically possible. A more serious concern of adding capacity or increasing employment is the probable downward pressure it exerts on prices and as a consequence, on profit per employee. Metaphorically speaking, an external breadth regime represents an increase in the size of the pie, with the core firm acquiring more of the increase than the average firm.
2. *Internal breadth:* A firm can indulge in internal breadth by acquiring other resources, thus building up capacity and employment without affecting the average. By engaging in internal breadth through mergers and acquisitions, a firm can increase its control over existing resources and potentially increase relative pricing power. Engagement in internal breadth is limited by possible legal and social barriers.
3. *External depth:* A firm or a coalition of firms can achieve increasing differential profits by increasing the prices of their goods and services faster than the general growth of prices in the economy. Increasing prices naturally involves restricting or curtailing output to a certain extent. The increasing prices of the core's products and decreasing output from the core will result in stagflationary pressures on the general economy. According to Nitzan, a coalition of firms can benefit from stagflation since the gains from increases in price can more than offset the reduction in output. A single firm will probably not be able to derive the same benefit from rising prices and falling output as the coalition can. For this to become a continuous process, it is necessary that the integrity of the coalition remains intact and other firms also join the coalition. Apart from the risk that members of the coalition renege on their implicit obligations, this mode faces social barriers as prices rise and the economy slows.
4. *Internal depth:* Firms can also achieve differential accumulation by reducing costs of production faster than the average. This requires considerable cost-cutting measures and investing in efficiency gains. Unfortunately, there can be no ownership claims or exclusivity associated with most, if not all, of these measures or gains especially in a country with intellectual property protection. This means that other firms can easily mimic any such measures and the core will need to constantly engage in cost-cutting measures in order to engage in differential accumulation. Such a process is unsurprisingly, expensive, unsustainable and does not result in extensive differential accumulation.

Furthermore, Nitzan proposes some characteristics of these regimes that need to be given due mention before any analysis.

The most important feature of these characteristics is the socio-economic environment that each regime is associated with. Breadth is only pursued by the core if the socio-political conditions are stable and conducive for new investment. Depth regimes are pursued if breadth is not an option because of unstable political conditions and fluctuating economic policies. The socio-economic conditions required for and the socio-economic impact of each regime must be noted. For a breadth regime in general, the economic environment must be conducive towards investing in new capacity and labor. This implies political stability, social calm and consistent policies. Within a breadth regime, an external breadth regime requires access to cheap new capacity or an expansion in the labor market e.g. a sudden flow of immigrants. An internal breadth regime requires potential expansion targets within the industry and once again, a steady investing environment. However, as a result of an internal breadth regime, the dominant core might find itself saturating its current sphere of operation and exhaust all possible merger and takeover targets. In the absence of possibilities for breadth and in the absence of politico-economic stability, the dominant core might choose to pursue a depth regime.

A depth regime, on the other hand, can bring about exorbitant increases in differential profits for the core. However, the core's increase in prices will eventually leak into overall inflation and as stated earlier, the core must consistently keep increasing its prices in order to remain abreast of inflation. The socio-economic impact of a depth regime is immense. Neither the economy nor the society can sustain a continuous upward spiral of prices. The ultimate consequence is a restructuring of the economy and society either through revolution or evolution. In most cases, given stable economic and social reforms and the potential for green-field investment, a depth regime normally subsides and gives way to a breadth regime. In some scenarios though, the depth regime leads to hyperinflation and drastic economic and social restructuring (Israel, South Africa). Although a depth regime might follow an internal breadth regime, it is also possible that an internal breadth regime gives way to an external breadth regime. We mentioned earlier about the possibility of the saturation of the dominant core's mode of operation. The core can, instead of pursuing a depth regime, choose to "break the envelope", operate in an entirely new sphere and change its reference average profit.

As we move on towards applying this framework to the political economy of Pakistan it is worth mentioning that combining Mahbub ul Haq's assertion regarding the dominance of 22 families in the economy of the country with the link that Khan and Saqib established between political uncertainty and inflation (Khan and Saqib, 2011), we believe that Nitzan's model of differential accumulation may offer insights into the political economy of Pakistan with a special lens on the cogs of power, capital and profit.

3. Method

A case of Veblenian sabotage
For initiating the analysis, the method employed by Nitzan in "Inflation and Accumulation: The Case of Israel" was used as the starting point. For purposes of the analysis, profit is divided into resources employed and profit per resource. Nitzan has pointed out that firms can increase profit by employing more resources or increasing profit per resource. Thus, the first rudimentary identity is:

$$\prod = L \cdot \left(\frac{\prod}{L}\right) \tag{1}$$

where $\prod$ is total profit and L is units of resource employed.

Next, profit per unit resource can be divided into profit per sales (i.e. markup), sales per unit output (i.e. price) and output per unit resource (i.e. productivity). Therefore, the second identity is:

$$\prod = L \cdot \mu \cdot P \cdot \rho \tag{2}$$

Where μ is the markup, P is price and ρ is productivity.

Lastly, the differential component must be added into the basic profit identity. As discussed earlier, Nitzan claims that capitalists seek to maximize profit over and above a certain reference point. For the economy, it seems reasonable to assume that the reference point is the average profit of the economy. Thus, if average profit ($\prod_a$) is defined as profit ($\prod$) divided by number of firms (*n*), then differential profit ($\prod/\prod_a$) can be expressed as follows:

$$\prod/\prod_a = L/L_a \cdot \mu/\mu_a \cdot P/P_a \cdot \rho/\rho_a \cdot \tag{3}$$

Where L/L_a is differential employment of resources, μ/μ_a is differential markup, P/P_a is differential price and ρ/ρ_a is differential productivity.

If expressed in terms of growth rates, then:

$$g_{\Pi} - g_{\Pi_a} = g_L - g_{L_a} + g_\mu - g_{\mu_a} + g_P - g_{P_a} + g_\rho - g_{\rho_a}. \tag{4}$$

Note that g_{P_a} (i.e. growth in average prices of the economy) is merely inflation.

It must also be noted that:

$P_t = f(P_{a,t})$, and
$P_{a,t+n} = f(P_t)$.

For the differential prices to contribute at least positively to differential profits, $g_P \geq g_{P_a}$.

It is clear that the core will have to increase prices continuously in order to sustain its level of differential profit as increases in its prices will inevitably leak into the periphery and the general economy as increasing inflation.

Thus, according to this breakdown, L/L_a is an absolute proxy for "differential breadth" and $(\Pi/L)/(\Pi_a/L_a) = \mu/\mu_a \cdot P/P_a \cdot \rho/\rho_a$ is a measure for "differential depth". The analysis is analogous in terms of growth rates.

The next step after determining mathematical relationship proves to be the most tedious. Due to the lack of continuous, historical data on a significant number of variables, we had to resort to using a number of proxies to aid our analysis. The rest of the section details our assumptions and data sources.
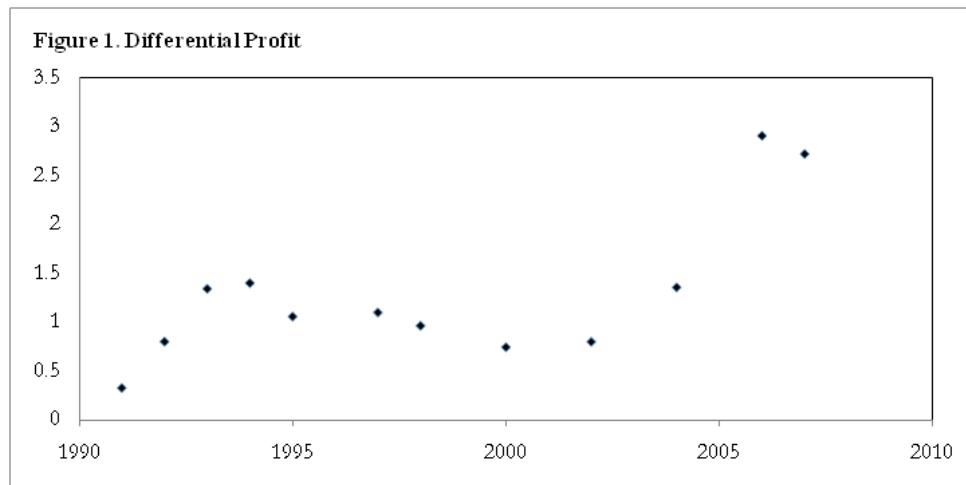
Differential profit
We identified the biggest conglomerates that have commanded a significant and consistent presence in the realms of political and economic power since 1971. The profits earned by these family-owned conglomerates according to publicly available financial statements since 1990 were recorded and divided by the number of conglomerates to get a measure of average core profit. Next, we used the difference between GNP and total wages to calculate a proxy for total profit. National income has four main components: wages, profits, interest income and rent income. Since the latter two are relatively stable, we find that the movement of total profits across time can be suitably approximated by using this measure. Nitzan himself has used this measure as a proxy for total profits in the economy in his studies (Nitzan and Bichler, 2000). Due to incomplete data on wages, we were unable to find a proxy for total profit for a few years. Additionally, there were no data or proxies available for the number of firms in Pakistan. Therefore, we

decided to divide the average core profit by the total profit of the economy to get a measure of differential profit of the average core firm.

There are two discernable peaks in the measure for differential profit (Figure 1). Before any analysis, we would first like to elaborate on the metric itself. The key difference between our metric and the one used by Nitzan is that ours is the ratio of the average core firm to total profit in the economy, while Nitzan's is the ratio of the average core firm to the average firm in the economy. The missing variable is the number of firms in the economy. The trend followed by our ratio demonstrates two peaks: 1992-1995 and 2005-2007. Both these periods were marked by substantial growth in the manufacturing sector of the economy and it would not be unreasonable to assume that the number of firms in the economy actually grew during these two time periods. Thus, if one were to translate this ratio into the one used by Nitzan (i.e. Π/Π_a), the peaks would be even higher.

Consequentially, we identified two peaks of interest in our analysis of differential profit: 1992-1995 and 2005-2007.

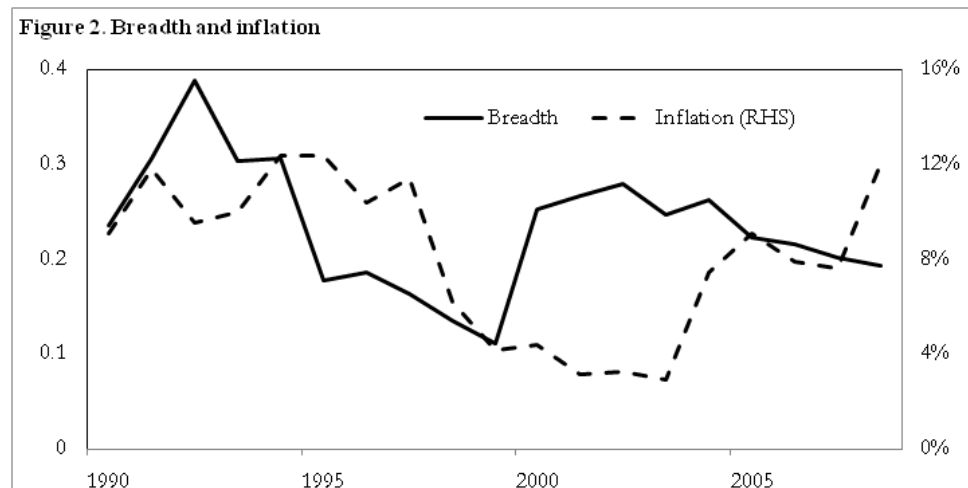Figure 1. Differential Profit

Breadth and depth
The second step in our analysis was to identify proxies for the measurement of breadth and depth. Ideally, comprehensive data on employment would have provided accurate observations of trends in differential breadth. Noting that all core businesses have a more than substantial presence in the large-scale manufacturing sector, our proxy for differential breadth was the total capital acquired and formed in LSM divided by total capital formed and acquired by the

private sector. This measure is chosen to trace a proxy for the amount of investment in capacity by the core as compared to the amount of investment in capacity made by the entire private sector of the economy. Consequentially, this metric tracks the core's behavior in differential breadth over time.

Calculating differential depth is straightforward with access to accurate figures for differential profit and differential breadth (it is simply differential profit divided by differential breadth). Since we had neither, we decided to decompose, differential depth into its components: differential markup, differential prices and differential productivity. Tackling the issue of differential productivity was a relatively easy one: there has been little or no change in total factor productivity in Pakistan over the past two decades (Khan, 2006). Moreover, differential gains in productivity are difficult to sustain since such gains can easily be mimicked by firms on the periphery. Similarly, cost-cuts (or changes in markup) are easy to mimic and have a lower bound. Thus, any differential advantages gained from such decreases are quickly eroded. However, by increasing prices faster than average firms can increase differential profits boundlessly. Differential prices, therefore, are principal to analyzing differential depth. As discussed earlier and as should be evident now, depth regimes are characterized by high inflation. However, once the core increases its own prices to increase differential gains, the price increase is bound to spill onto the rest of the economy. As a consequence, overall prices in the economy increase. To sustain the differential gain, the core has to increase its prices more. The spill-off of core prices into the economy is exacerbated in an economy like Pakistan's where the core has a considerable presence in crucial industries. Since inflation is symptomatic of a depth regime (among other economic ailments), we use inflation not as a measure of differential depth, but to test for the presence of a depth regime.

There are two notable features of this analysis (Figure 2). Firstly, as hypothesized earlier, breadth and inflation seem counter-cyclical to each other. An increase in breadth is marked by a marked decrease in inflation and vice-versa. An important exclusion to this seems to be the recent spike in inflation (2007 onwards), which is not accompanied by a drop in breadth. Later, we demonstrate that this spike in inflation was actually concurrent with a fall in differential breadth in the banking sector (note that we have used LSM as a proxy for differential breadth). Secondly, a summation of the two trends shown should and does provide a crude approximation of differential profit. A summation would provide us with the two peaks of differential profit (1992-1995 and 2005-2007) and a period of relatively constant differential profit for the ten years between 1995 and 2005. It is also important to note that this period can be divided into two periods of high breadth, low inflation (1995-2000) and low breadth (2000-2005), high inflation

respectively. It is also important to note that between these two periods, differential profit might have dipped since differential breadth did not rise immediately with fall in inflation.

Figure 2. Breadth and inflation

This analysis provides credibility to our proxy for breadth and using inflation as a marker for depth. Noting that a summation of the two trends provides a fair emulation of differential profit as calculated earlier, the analysis has allowed us to draw the following conclusions:

- There have been two spikes in differential profit: 1992-1995 and 2005-2007
- Differential profit has remained constant between 1995 and 2005
- Differential breath (as measured by the LSM proxy) and inflation have moved counter-cyclically (except for 2007 onwards)
- The summation of trends in breadth (as measured by the LSM proxy) and inflation provide a fair impersonation of the trend in differential profit.

We will now dig a little deeper and look at specific sectors in the economy using Nitzan's framework, while presenting a narration of key historical events simultaneously.

4. A lesson in history

The spikes in differential profit
The first peak of 1992-1995 was characterized by growing profits, a sharp but temporary fall in inflation and a sharp rise in breadth. This peak coincides with the first wave of privatization in Pakistan. Under the first Benazir Bhutto and Sharif terms, a privatization framework was developed and units from the cement,

engineering, fertilizer, sugar and financial sector were privatized. The core acquired most of these assets and managed to expand its capacity faster than average without raising the overall capacity of the economy. Thus it would seem a fair conclusion that the first peak of differential profits in the Pakistan economy was driven by an increase in internal breadth i.e. increasing the core's capacity by means of acquisitions and mergers instead of investment in new capacity.

However, the slight decrease in inflation was only slightly outlived by the increase in breadth as the core quickly constricted capacity in response to overall political and economic – especially policy – instability. Assets were either divested or lay idle. As a consequence the sharp drop in breadth was sustained from 1995-2000 and inflation remained stable albeit relatively high and in double digits. These five years were symptomatic of a depth regime: a combination of high inflation and low differential breadth to stabilize the core's differential profits.

Ultimately, depth regimes are barely sustainable due to the inevitable socio-economic upheavals associated with sustained price increases, decelerated growth and underemployment of resources. Consequently, the military came into power once again in 1999 and the depth regime spluttered to an end. The economic reforms and relative politico-economic stability ushered in by the military, the sudden inflow of funds for participation in the war on terror that propped up the fiscal side of affairs and the Musharraf regime provided the impetus for renewed investment in capacity by the core and the resultant increase in differential breadth. At the forefront of these reforms was another wave of privatization. Firms from the banking, telecommunications and energy sectors were privatized. With the PEMRA ordinance, businesses in the electronic media found unparalleled opportunity to grow. Simultaneously, massive growth in the communications sector spurred business growth. With the increase in differential breadth, economic growth picked up, inflation fell and remained low till late 2004.

However, the latter half of the 2000s started with political unrest and greater security concerns. The economic conditions of the country deteriorated at a frightening pace; stagflation, currency and foreign reserves crises and a stock market crash hit the economy in quick succession. However, differential profit soared after 2005. As is evident, differential breadth was actually declining steadily in this period whilst inflation rose sharply first in 2005 and then in 2008. An investigation into the surge in differential profits reveals that the banking sector (dominated by the core) contributed towards most of these profits whilst profits in the sugar and cement industries were elevated as well. This would seem to suggest the presence of a depth regime, but given the absence of a sharp decline in breadth, it appears to be in contradiction of our hypothesis that depth regimes

and breadth regimes move counter-cyclically to each other. A possible reconciliatory argument may be that depth regimes and breadth regimes cannot happen simultaneously, but the presence of one ensures that the other cannot exist. Another argument is that our metric for breadth concentrates solely on the core's activity in the LSM sector and the depth regime of the later 2000s was initiated and maintained by the abnormal profits of the core's banking operations. Perhaps, a metric for breadth that incorporates the core's investment in both labor and capital as a proxy for investment in new capacity would have had a counter-cyclical property. Regardless, it is evidently clear that the late 2000s was characterized by the politico-economic conditions conducive for a depth regime, with record-high levels of inflation and a large increase in the core's differential profit.

To further our knowledge of the drivers of differential profit and to dissect and understand breadth and depth regimes, we shall look at the sectors that have driven growth in differential profits. All core conglomerates have a significance presence in at least the textile, sugar, cement, fertilizer, vegetable oil and banking sectors. Sectors that have driven growth in differential profits have been the LSM sector (with a substantial contribution from the textile, sugar and cement sectors) and the banking sector. We shall look at each in turn.

Differential profits: manufacturing
Most Pakistani conglomerates have maintained a substantial presence in the manufacturing side of the economy with capacities in the textile, sugar, cement, fertilizer, vegetable oil, jute (pre-1971) and engineering sectors.

Here, we seek to investigate the contribution of differential profits in manufacturing to that of overall differential profits of the core. For that end, we revised our metrics to concentrate solely on the manufacturing sector. Firstly, differential profit in manufacturing was calculated by using the core's average profit from the manufacturing sector and dividing it by the average profit of companies listed on the Karachi Stock Exchange. We believe the average profit of publicly listed companies is an appropriate measure for the sphere that the core compares itself to since all of the core's manufacturing firms analyzed are publicly listed as well. We also included differential profit in the manufacturing sector for a single randomly selected conglomerate as another measure. Finally, we used the same measure of breadth as before since it proxies the relative investment by the core in manufacturing capacity by using capacity investment in the LSM sector as compared to capacity investment in manufacturing.

Figure 3. Differential profits - LSM
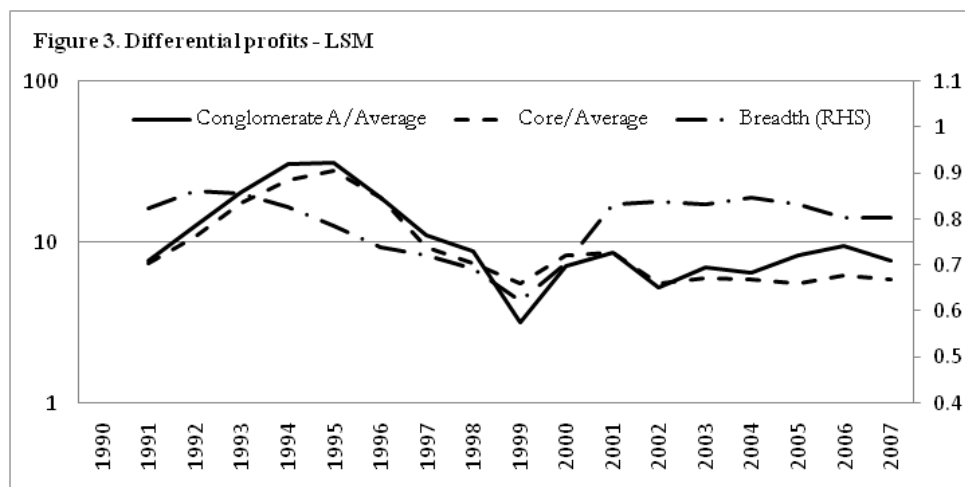
Differential profits in manufacturing started rising sharply (note the logarithmic axis on the left hand side axis in Figure 3) from 1991 onwards and continued rising sharply in spite of the fall in differential breadth. It is important to note that the core was able to sustain an elevated level of differential profit in the manufacturing sector throughout the late nineties. When breadth increased sharply thereafter, differential profits from manufacturing stabilized but did not increase substantially. The most notable conclusion that can be drawn from this is that differential manufacturing profits contributed towards the first spike in differential profits and towards stabilizing differential profits till the late 1990s. Since breadth increased only initially and then kept decreasing till the year 2000, it is relatively straightforward to conclude that the elevated levels of differential profits were sustained by a depth regime. Additionally, this conclusion could explain the relatively high inflation throughout the nineties.

However, following 2000, differential profits from manufacturing stabilized and differential breadth were sustained at a comparably higher level. In contrast, overall differential profits did rise appreciably following 2005. The most logical conclusion here is that the second spike in differential profits was not instigated by the manufacturing sector. Rather, the manufacturing sector sustained relative profits in the face of high overall inflation, political instability and a deteriorating economic climate. The rise in differential profits of the core in the latter half of the 2000s was a product of a rise in differential profits in other sectors. For the moment, we shall restrict our focus to a more in-depth analysis of certain sectors within the manufacturing domain. These sectors have gained substantial notoriety due to their alleged indulgence in anti-competitive practices: sugar and cement.
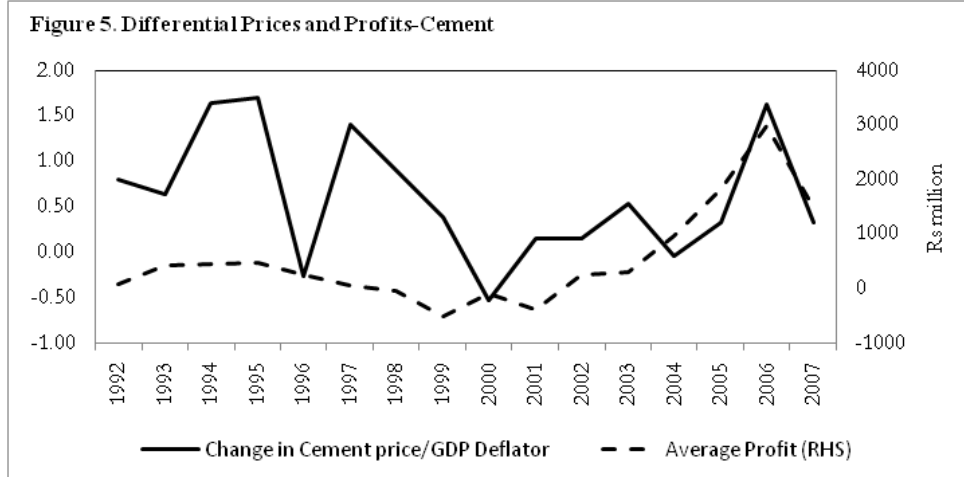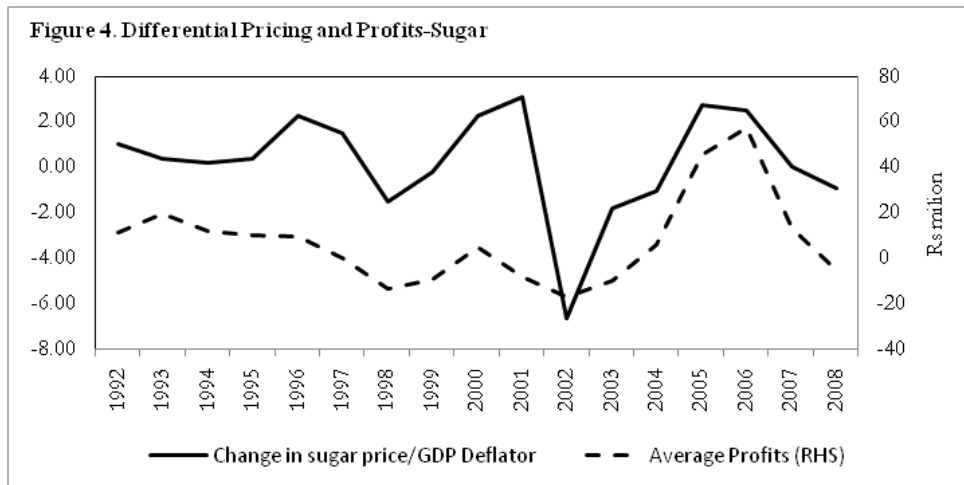
Differential profits: sugar and cement

The sugar and cement sectors were selected for analysis not only for their notoriety, but because most units are publicly listed and the conditions are appropriate for generation of differential profit via Veblenian sabotage (i.e. capacity constraints). Producers in each sector are few and their markets are insulated from entrants. These conditions are missing in the textile sector since there are a relatively large number of producers and a significant portion of their income is from exporting to markets where they are able to exercise little influence by any form of capacity restriction. Other sectors that do have the ingredients of Veblenian sabotage in place, unfortunately, do not have publicly listed companies or units. Therefore, our analysis is confined to the case studies of the sugar and cement sectors.

For each sector, we traced the total profit against each respective differential price. Differential price for sugar is defined as the price of sugar divided by the GDP deflator, while a similar metric is used for differential price of cement. The relationship between the variables here is quite simple: according to our hypothesis, during depth regimes, the core's profits are driven by differential prices. Thus, taking the trend in sugar and cement sectors' prices profit as indicative of the core's behavior, the profits should be correlated with differential prices during depth regimes.

The resultant trends for each sector are in Figure 4 and Figure 5 (the depth regimes are highlighted).

It is relatively straightforward to see that profits' trends in both sectors followed the trends in differential prices extremely closely during the highlighted depth regimes. The only exception is that cement profits did not move with differential cement prices during the first depth regime. Our hypothesis for this is pretty simple: The second period of depth contained enormous increases in demand for construction materials, most notably cement, on the back of a real estate boom and rebuilding after the war in Afghanistan. We hypothesize, that up to that point, there was hardly any demand to merit the significant constriction of capacity that constitutes a depth regime. Thus, sugar profits moved with changes in differential prices in both depth regimes whilst cement profits moved with changes in differential prices in the second depth regime. No such similarity in trends is found between profits and prices for either product during the other years.

Figure 4. Differential Pricing and Profits-Sugar

Change in sugar price/GDP Deflator   - - Average Profits (RHS)

Figure 5. Differential Prices and Profits-Cement

Change in Cement price/GDP Deflator   - - Average Profit (RHS)

The fact that differential prices and profits for these two sectors moved in tandem during periods of high inflation, stunted growth and socio-political unrest renders support towards the existence of differential accumulation and profits within the manufacturing domain. However, as we mentioned earlier, the spike in differential profits in the second depth regime was not triggered by the manufacturing sector. We now turn to a second sector where the climate was ripe for the core to exercise its power via differential accumulation: the banking sector.

The banking sector
It was important to demarcate the core from the periphery in the banking sector. Supplementing the complication was the increase in merger and acquisition

activity in the banking sector since the second privatization wave that focused on banks. To simplify matters, we decided to include five largest banks of Pakistan and banks that have been owned by the core in the core of the banking industry. Our investigations revealed that most of the banks owned by the core either merged with each other or were acquired by the larger banks. Thus, the trend followed by the five largest banks mimics the trend followed by our definition of the core.

Figure 6. Differential Accumulation-Banking
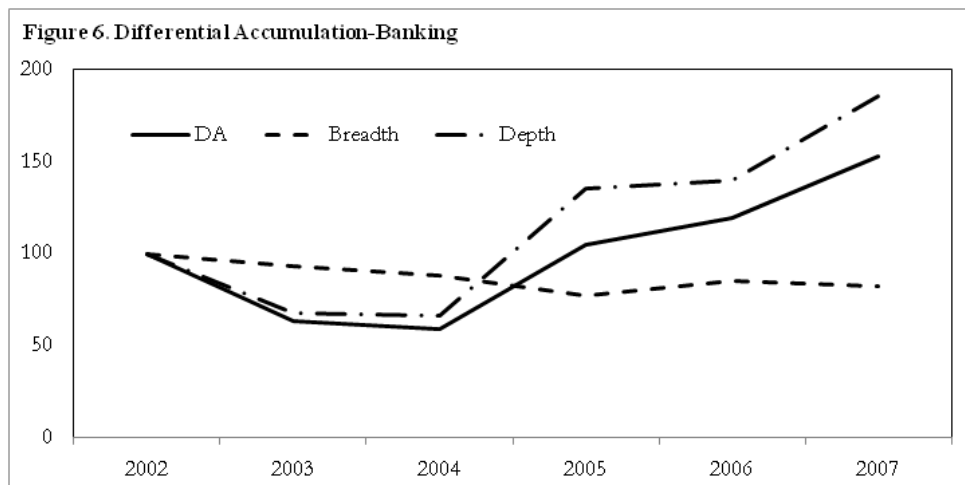
We used the average profit of the core divided by the average profit of the banking sector as a measure of differential profit instead of having to resort to justifiable proxies. Similarly, differential breadth was measured as average the number of employees hired by the core divided by the average number of employees hired in the banking sector. Employment data for banks (which is available only from 2002) allows us to ascertain the capacity investment undertaken by banks. Differential depth is measured by dividing differential profit by differential breadth. All figures are indexed at the year 2002. The result is illustrated in Figure 6. The growth in differential profits of the core from the year 2004 onwards is noteworthy. Another observation is the fact that differential breadth has declined steadily during the period under inspection. This indicates that the core has not invested significantly more in capacity as compared to the sector as a whole. If anything, the core has invested less in capacity as compared to the sector as a whole.

Next, we observe the movement of the core banks' interest rate spreads. The interest rate spreads are calculated by subtracting the banks' average borrowing rate from the banks' average lending rate. The average borrowing rate is

calculated by dividing interest expenses by deposits and the average lending rate is calculated by dividing interest earned by advances and investments. The spread indicates the amount of profit earned by the bank for each rupee it receives as deposit and advances as a loan. On this note, it is important to point out that the bank's revenue is hedged against inflation and consequently, there should be theoretically no link between inflation and a bank's spread. However, Figure 7 and Figure 8 tell a different story.

Figure 7. Depth in Banking and Spreads

Figure 8. Banking Spread and Inflation
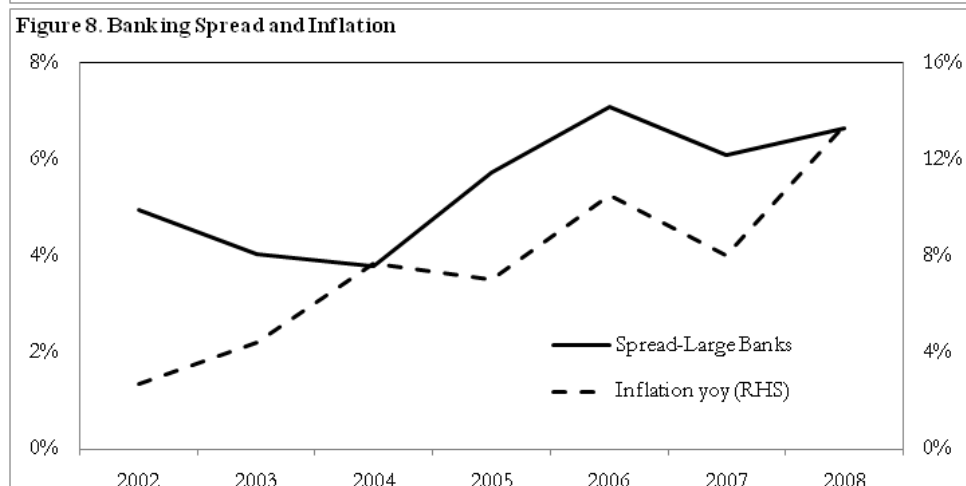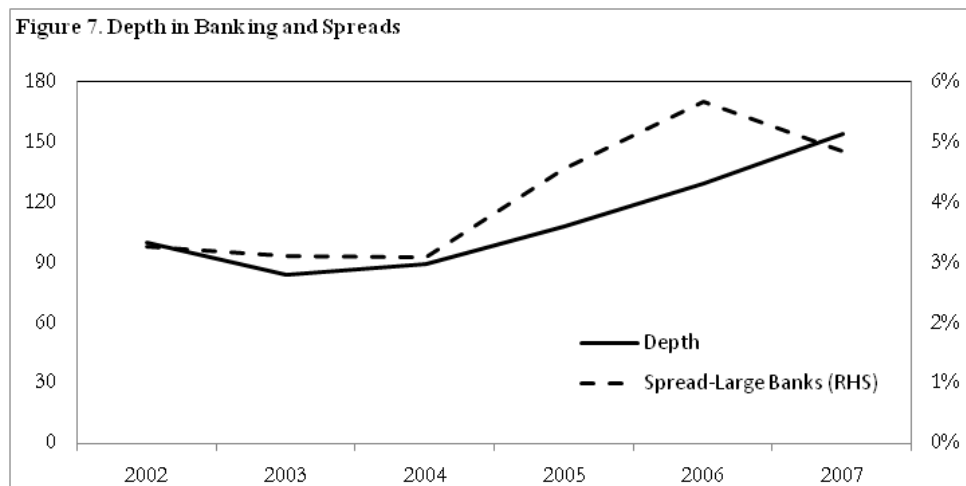
As is evident now, differential depth, banking spread and inflation increased substantially during the second depth regime. The only possible justification banks have for this increase in spread is that the continuous increases in minimum capital requirement by the State Bank of Pakistan in an effort to fortify the financial

markets necessitated the increase in spread as banks sought to raise the necessary reserves. Unfortunately, this argument crumbles if one realizes that the banks under consideration are the largest financial institutions in Pakistan and have maintained relatively extremely healthy liquidity and profitable statements since the beginning of the depth period. The smaller banks, on the other hand, do have an argument towards increasing their spreads to facilitate the process towards maintaining the necessary capital requirements. However, the spreads for smaller banks actually declined during the period under consideration and, with the banks being constricted by the capital requirements, plunged into a wave of mergers and acquisition strategy.

Thus, this section has demonstrated that the second spike in differential profits was instigated by the rise in profits of the larger banks (most of which are under the ownership of the core). This rise in profits was not due to a rise in capacity or expansions, as measured by banks' employment, but rather by increasing their spreads. This period was also marked by sharply increasing inflation and increasing differential depth in the banking sector. The presence and influence of the core in the banking sector was undoubtedly potent enough to launch the second depth regime in an effort to maximize differential profits.

Inflation and redistribution of wealth
Having noted the presence of differential accumulation regimes of breadth and depth over the past two decades and having attempted to determine the mode of propagation of the regimes, the question of causality still remains. Does a depth regime lead to inflation or does inflation trigger the start of a depth regime? What exactly is the relationship between the core's differential profits, inflation and various regimes? The first question we shall seek to address though is basic: how does inflation redistribute wealth in Pakistan's economy? In answering that question, we hope to discover how higher inflation redistributes wealth between labor and capital and if the core can achieve higher differential profits during times of higher inflation.

Data on KSE's movements can provide us with a suitable proxy for gains on the ownership of capital. Figure 9 demonstrates the relationship between market capitalization of the KSE divided by the nominal GDP and CPI inflation.

The bar charts represent the value of equity per output in the economy. Note that since both metrics increase in tandem with price changes, the quotient is independent of inflation. Mathematically, market capitalization is the average share price multiplied by total number of shares, while nominal GDP is the average price in the economy multiplied by the total real output of the economy.

Figure 9. Market Capitalization /GDP and inflation
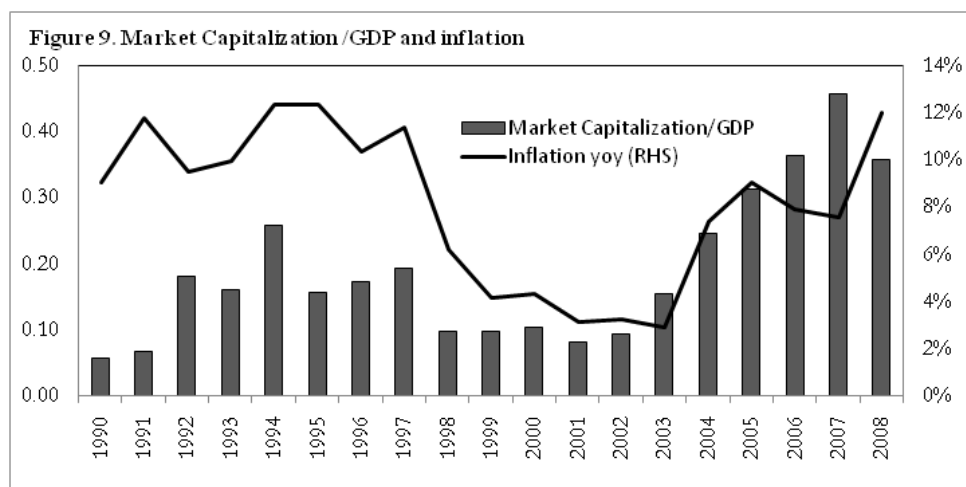
Since inflation will affect both price levels equally (at least theoretically), the quotient of the two variables is independent of inflation. However, it is apparent that this does not seem to be the case. High periods of inflation are associated with a rise in the metric of market capitalization divided by GDP. Thus, in periods of high inflation, the numerator (market capitalization) increases faster than the denominator (GDP). Thus, a 1 percent rise in GDP leads to more than 1 percent rise in market capitalization in periods of high inflation. Thus, owners of capital earn greater returns per unit increase in output during periods of high inflation. However, this does not automatically connote that owners of labor are worse off than before. An increase in GDP is analogous to an increase in the size of the pie. The increase is divided primarily between owners of labor and capital. We can demonstrate that owners of capital have acquired a large enough fraction of the increase in the pie to make them better off than before. Whether owners of labor have been made better off or not (and by what extent) are questions that cannot be answered in the absence of sufficient data on wages. Thus, it would be imprudent to advance any notions of equitability of division of gains during periods of high or low inflation (or alternatively, periods of breadth or depth).

5. Differential accumulation in Pakistan?

Evidence for the presence of differential accumulation is not overwhelming, but merits notice. The presence of the socio-political elements necessary for such phenomenon, however, cannot be doubted. This includes the presence of an influential core and periods of severe political instability and uncertainty. The presence of a strong core has been well-documented. Since the mention of 22 families controlling most of Pakistan's economy originated during the years of

Ayub Khan, there has always remained a set of powerful industrialists that have maintained a strong presence in certain strategic sectors of the economy. As Mahbub ul Haq noted, however, the 22 families were "a symptom and not a cause" of "the system that created them". In other words, they were just a reaction to the political and economic framework they operated in.

It must be emphasized that the core is not a static set of industrialists. Structural changes in the economy such as the division of East and West Pakistan, nationalization and privatization waves have destroyed and created circles of power within the core. Secondly, Pakistan has remained no stranger to political instability. Only twice have elected premiers successfully completed their tenures and martial law has been imposed on the country four times. Economic policies and reforms have been initiated and reversed incessantly and consequently, an air of economic instability and unpredictability has been cast. Such conditions are necessary for the instigation of Nitzan's hypothesized depth regime. Thus, the ingredients for the instigation and consolidation of differential accumulation regimes are and have been in place in Pakistan for a few decades.

Next, evidence for the symptoms of differential accumulation is undeniable. Inflation and unemployment in the economy has close to no correlation. More importantly, however, periods of politically unstable civilian rule have coincided with high inflation and stagnating output and periods of relatively stable military rule have coincided with relatively lower inflation and some semblance of economic growth. These two phenomena are symptomatic of Nitzan's hypothesized depth and breadth regimes respectively. Finally, Mahbub ul Haq described the power of the 22 families as: "For all practical purposes, the 22 families had become by 1968 both the planning commission and the ministry of finance for the private sector. They preempted most investment permits, import licenses, foreign credits and government patronage because they controlled or influenced most of the decision-making forums handing out such permissions. They had virtually established a stranglehold on the system and were in a position to keep out any new entrepreneurs." The resemblances to the symptoms of Veblenian sabotage and differential accumulation are uncanny.

Thus, according to the framework presented by Nitzan, the differential profit of a core group of corporations has seen two major peaks in the previous two decades. The first occurred during the first privatization of the early 1990s and the second occurred during the late 2000s. By disintegrating differential profit into differential breadth and depth, four different regimes of breadth and depth were identified. The first was a breadth regime initiated by the privatization of large portions of the LSM sector. The second was a depth regime that coincided with

the extreme political instability of 1990s. The third was a breadth regime that coincided with the second wave of privatization (in the financial sector) and relative political stability of the early Musharraf years. The fourth was a depth regime that concurred with the turmoil of the latter half of the Musharraf years.

Analysis of the LSM sector (one where the core has always maintained a strong presence) reveals that differential breadth was relatively high during the privatization years, but started falling steadily till the turn of the millennium. The core's differential profit did not start declining till much later which supports the hypothesis that the differential profits of the first half were due to the rise in differential breadth associated with the first wave of privatization while the latter half of the 1990s was a depth regime since profits did not decline to the extent of differential breadth. However, at the tail end of the millennium, differential profits had started declining (both overall and in the LSM sector) and the renegotiation of social equilibrium led to another imposition of martial law. At the start of the new millennium and the third breadth regime, breadth in the LSM sector rose appreciably and the core's profits stabilized. However, it was clear from this analysis that the LSM sector could not explain the second peak observed in the analysis of differential accumulation and the fourth regime in our analysis.

The LSM sector itself merited further investigation. The sugar and cement industries within the LSM sector have historically been strongholds of the core and recipients of allegations of price fixation and hoarding. Using the differential accumulation model, we tracked the average profits of each sector and compared them with differential prices (a component of differential depth). During depth regimes, average profits of the sugar sector and the differential price of sugar moved in tandem. One could hypothesize that average profits in the sugar sector (a stable component of the core's profits) are *driven* by differential prices of sugar. Similarly, profits in the cement sector moved in tandem with the differential price of cement during the second depth regime. This result is insightful since the demand for cement (and thus the core's ability to manage capacity) rose substantially with the housing boom and the rebuilding of Afghanistan following the war on terror. Thus, profits of the sugar and cement industries, which are dominated by the core, have moved concurrently with their respective differential price during depth regimes. Profits of both industries have been small, but significant contributors to differential profit.

6. Does differential accumulation exist?

While evidence for differential accumulation exists, a thorough literature review on Nitzan's theory of differential accumulation will present the following: the

theory of differential accumulation is, at best, on the periphery of mainstream economics. There is little empirical evidence to support the theory, but the trends presented in Nitzan's analysis make for interesting hypotheses. Contemporary theories that seek to explain long-term inflation and growth trends are based largely on neo-classical or neo-Keynesian theories. These theories do little to integrate the concept of power into economics, a facet that Nitzan has criticized repeatedly in his theories. Most worryingly, the theory of differential accumulation has received little attention, even in the form of criticism, from academic circles.

The reason we chose to test the theory, even in the absence of substantial econometric support for the theory, is simply because the assumptions that lay the foundation of this theory seem to hold in the case of Pakistan. The presence of a core group of industrialists within considerable influence in the social and political spheres is well-known. The question of correlation, and if possible, causality, between the behavior of such a core as it seeks to maximize its utility and macroeconomics variables needs to be answered.

Nitzan's theory of differential accumulation attempts to answer that question by first rejecting the conventional notion of capital and tying the definition of capital with the accumulation of power. He hypothesizes that power can be achieved through the concept of private ownership of resources in the economy that may be visualized as crystallized streams of cash flows. He then hypothesizes that the core is concerned not merely with the accumulation of such resources, but the accumulation of power. Power is the relative accumulation of such resources and the core will need to outstrip a certain benchmark in order to "beat the average". The benchmark is subjective, but Nitzan believes that for the core of a single economy, the benchmark is the performance of the economy. Nitzan's empirical analysis thus starts with the proposition that the core seeks to maximize not absolute profit, but relative profit.

Nitzan's path towards establishing a relationship between the behaviors of a select group of industrialists and trends in the macroeconomic environment is not the only path. His proposition that the core seeks to profit with reference to a benchmark is strikingly similar to a number of conclusions in the field of behavioral economics, which has, to date, largely focused on consumer decision-making processes. The notion of maximizing relative profit finds its counterpart in maximizing relative utility.

Although mainstream economics rests on the assumption that consumers seek to maximize utility, which is a function of *absolute* wealth, behavioral economics has

inducted other variables into measures of utility. Most notably, the presence of a reference point while measuring wealth and utility is visible across behavioral finance. Well-documented phenomenon such as the *Easterlin Paradox* (which notes that happiness, or utility, has not changed significantly despite consistent increases in private wealth) and the equity premium puzzle (Mehra and Prescott, 1985) have been supposedly solved by behavioral economics. More specifically, the solution to the Easterlin Paradox hypothesizes that happiness has not increased significantly with increases in absolute wealth because individuals draw utility from relative and not absolute wealth. Similarly, one of the solutions to the equity premium puzzle (Thaler and Benartzi, 1995) draws upon a modified version of *Prospect Theory* by Kahneman and Tversky (1979), which contains amongst its salient features, the proposition that in decisions involving risk, individuals frame outcomes relative to their current status (or current wealth) in terms of gains or losses and that individuals are risk-averse in the domain of gains and risk-seeking when the same outcome is framed as a loss.

Thus, it would come as no surprise that producers' utility above and beyond a certain point is unaffected by increases in absolute profit. Behavioral economics has yet to delve into the mechanics behind the producers' allocation of resources. Is it possible that producers' decisions are affected by his peers' decisions? Could one conjecture that producers do not allocate resources within a vacuum, but rather look for cues from other producers? The notion of maximizing relative profit as opposed to absolute profit may be worth investigating.

In summary, without launching into an academic critique of Nitzan's theory of differential accumulation and his definition of capital, it is important to note the prevalence of evidence that producers may be maximizing profit relative to a certain benchmark. While this may or may not prove Nitzan's hypothesis in Pakistan's case, the method itself draws parallels with concepts embedded within the foundations of behavioral economics. Unfortunately, most advances in behavioral economics, and specifically, in decision theory have focused on consumers' perceived maximization of utility (or happiness). We indicate that there is immense potential in investigating the behavioral aspect of producers' decision making processes with respect to the allocation of resources. Moreover, if such a diversion away from conventional economics can be proven in the light of behavioral economics, then the repercussions on the overall macro-economic indicators would be huge. For policy makers, such a link between producers' behavior and the allocation of resources will endow them with a channel to tweak the economy more effectively. The potential of a foray into the behavioral aspect of resource allocation in an economy is huge, both for academics and policy makers.

In summary, through our investigations into inflation in Pakistan and its causes through the lens of a contemporary political economics theory, we stumbled upon a more exciting prospect for explaining macroeconomic variables. The theory of differential accumulation, based upon the rejection of the current notion of capital by incorporating the definition of power into capital, provided a framework in which the ultimate aim of the producer is to maximize relative profits. While testing this simple hypothesis using data from Pakistan, we noticed encouraging trends emerging within the data in support of the hypothesis. Unfortunately, econometric analysis was impeded by the lack of complete data for major macroeconomic variables. However, we would like to underline the likelihood that producers' decisions regarding the allocation of resources might be subject to the same biases that consumers' choices are, given that the maximization of relative profit, as assumed in our analysis, seemed, at a cursory level, to contain the potential to explain the price level of the economy and various commodities. While the consumers choices and their biases have been studied in great depth in the field of behavioral economics, the mechanics of the producers' decision making process is still a black box. We recommend a foray into testing the hypothesis that maximization of relative profit may supersede the producers' desire to maximize absolute profit beyond a certain level of profit. Finally, our analysis suggests that either inflation in Pakistan may have been a means to an end for a group of influential producers or a natural consequence of producers' reaction to sustaining relative profits in the light of tectonic shifts in the politico-economic landscape. Both outcomes deserve to be investigated.

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APPENDIX 1. Defining and re-defining capital – Nitzan's objections to Neoclassical and Marxist economics

The notion of capital has been central to capitalism and the idea of capital goods central to classical and neoclassical economics. Although the definition of capitalism seems debated amongst economists, political scientists and social scientists, the existence of a privately-controlled free market for factors of production and output remains a common theme. The factors of production contain capital goods, *measurable* and *distinct*, to facilitate their use in a production function. It is exactly the notion of the production function, which forms the fundamental supply curve in economics that is the bone of contention between neoclassical economists, Marxists and institutionalists (led by Veblen). We shall go through each definition in turn and consider the impact each has had on present day economic models of capital.

Capitalism finds its foundations in Adam Smith's "invisible hand". Classicists acknowledged the existence of a link between capital and output, but struggled to or were unwilling to quantify the relationship between capital and output. Such a link was born out of necessity with the advent of the industrial revolution and subsequent importance of non-land and non-labor factors of production. Eventually, these machines were elevated to the category of a factor of production, thus making them a requisite for any form of output. However, the heterogeneity amongst these newly christened factors of production made them extremely difficult to measure, unlike the relative homogeneity of land and labor. Nitzan cites Clarke's book "The Distribution of Wealth" in Ronen's *Global Political Economy – Contemporary theories* (2000) as one of the major works that mathematically united capital as a unique factor of production with output. Clarke asserted that output was a direct function of factors of productions. Furthermore, the quantity, contribution of and interaction between the factors of production can be observed and measured in homogenous units. It also asserted that the income earned by these factors of production was proportionate to their marginal contribution in the production process. This formed the basis of neoclassical economics. Clarke also included capital as a factor of production, defining it exactly like land and labor. To elaborate, capital was as measurable as land or labor, capital's contribution was as unique as land or labor and its price was also as measurable as that of land or labor.

The incorporation of capital as a factor of production was in stark contrast to Marxism, which claimed that capitalists managed to exploit the value that labor creates during the production process. Nevertheless, a discussion of Marxist

economics is featured in due course. Nitzan's critique of neoclassical economics' definition of capital is in order here.

With Clarke's definition of capital, it became necessary to develop a tool to measure the amount of capital. Economists and financial analysts now value any asset by discounting its contribution to profit (or cash flows) by a discount rate. The argument seems sensible: An asset's value is only equal to the value it provides over time. Using the principle of time value of money, it is only logical to discount these flows of value by a suitable interest rate. Thus, a measure for the value of capital is calculated which may then be used in a production function, which the capitalist uses to maximize profit. Remaining within the simplified realms of neoclassical economics (where each factor of production is distinguishable and measurable), this provides us with a circular argument which was the basis of the Cambridge controversy. The value of capital was partially dependent on time, and hence a rate of interest. Unfortunately, this was the very rate of interest that the quantity of capital is supposed to determine. Essentially, the Cambridge controversy remained a debate regarding causality between capital and the rate of interest. Therefore, with heterogeneous capital goods the rate of interest depended on an endogenously determined interest rate. This circularity is best illustrated in Wicksell's reswitching example. Mathematically, it became possible for the same capital-labor ratio to be optimal for two different given rates of interest in the presence of more than one heterogeneous capital good that is valued using a time variable. The predecessor of the Cambridge controversy was in fact, the debate between Veblen's and Marx's definition of capital and surplus value and Clarke's definition of capital as a factor of production. Nitzan cites this circular argument as evidence of neoclassical theory's failure to explain the nature of capital and consequently, the structure of prices and production and distribution of income. Ultimately, Nitzan believes that neoclassicists' greatest fallacy is their reduction of capital to a *distinct* and *measurable* factor of production. In turn, Nitzan also believes that this fallacy allowed for the justification of current distribution of income and power.

The Marxian view of the production process is derived from Marx's own explanation of class struggle and the balance of power on society. As a consequence, Marxian economics views capital not as a measurable or distinct object, but as a culmination of complex social processes that provides value in the production process. However, Marx also argues that the avenue capital uses to create power is the surplus-value of labor. Marxian economics states that the value of a product is the sum of the value of its raw materials and the labor time required to produce it. It also states that labor itself has a value, which is equal, at its minimum, to the sustenance required to keep labor functioning at maximum

capacity. The capitalist pays wages to labor, which is equal to the value of labor, and gets a certain amount of labor time from labor. The difference between labor time and labor value is called surplus value in Marxian economics and is appropriated as profit by the capitalist. Thus, the power of the capitalist, according to Marx, was derived from his ability to exploit the surplus value of labor. Marxian economics, however, faced some serious challenges in the form of the Transformation Problem and Sraffa's *Production of Commodities by means of Commodities*, which pointed out some serious contradictions in its framework (Sraffa, 1975). It is no surprise then that Marxian economics has never managed to find its way into mainstream economics and public policy.

However, Nitzan's critique of Marxian economics lay not with the contradictions inherent in its framework. Nitzan believes that both Marxian economics and neoclassical economics err in modeling the production process and then building up to a theory of distribution of wealth and capital accumulation. He argues that the production process is far too complex in today's socio-technological setting and as a result a bottom-up analysis of the economy, i.e., starting with the production process does not provide a robust explanation of today's political economy. Specifically, he argues that the notion of power needs to be integrated into the definition of capital to facilitate a top-down analysis of the political economy.

Such an analysis was inherent in Veblen's critique. As described earlier, Veblen argued that the dissection of ownership from production was critical in molding incentives to facilitate the integration of power into capital. Capital, Nitzan infers, can therefore be understood as "the power to control societal production for business ends". Capital accumulation as a consequence is defined as "abstract power claims on the entire process of societal reproduction". Nitzan extends this institutionalist critique and then presents his theory of differential accumulation.