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The *Social Science and Policy Bulletin* is published quarterly by the School of Humanities, Social Sciences and Law at LUMS. It provides a forum for debate on the economic and socio-political issues pertaining to the formulation and conduct of public policy as well as its impact. The Bulletin aims to disseminate, to a wider audience, high quality research and policy-oriented work being done by social scientists. The editors of the Bulletin welcome short essays, either analytical or quantitative, that are relevant as well as intellectually stimulating.

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Editors' Note

This edition of the Social Science and Policy Bulletin (SSPB) has a diversity of articles and opinions. The bulletin's main focus is on electrification and availability of power in Pakistan. Frequent power outages have created insurmountable problems for people all over the country. Resultantly, people are constrained to find alternatives to ensure uninterrupted power supply. While the demand for generators and UPS has soared in the previous few years, they remain unaffordable for many. Power outages have not only had a significant negative impact on industrial growth and production but have also affected worker productivity primarily because of sleep deprivation due to frequent electricity breakdowns during the night. Moreover, people working in offices and other places are unable to cope with the persistent hot climate for a greater part of the year in most areas of the country thereby reducing their performance levels significantly. Despite many ideas for alternative energy and solutions for this burgeoning problem, little seems to happen. The Government of Pakistan needs to adopt some of these ideas and reach a solution for this pressing issue before it engulfs the entire industrial and tertiary sector and besieges growth and performance.

The first article focuses on rural electrification since it is considered crucial for human well-being as well as being critical to social resource development. For this aim, SSE at LUMS has developed a DC Microgrid Initiative which shall engage lesser resources to output power to a greater area thereby facilitating rural areas. Rural electrification is perceived a catalyst for poverty reduction and a health and education enhancer for rural areas which are devoid of development within Pakistan.

The second article is a contribution from outside of LUMS by Aqdas Afzal where he reviews the theory and works of Adam Smith concluding that he is not a man having produced a singular idea promoting unfettered markets and/or capitalism but has also deeply considered issues of distributive justice and inequality. Afzal describes this work by Smith against the backdrop of the State having the power to do justice whilst maintaining market equilibrium.

The third article is from a LUMS alumnus, Hamza Siddiq Khan, which concludes that the role of the State is indispensable as it is responsible for development of the market rather than only providing lucrative conditions for the market to flourish. Even in the highly market-driven States such as the US, the State plays a critical role in driving innovation led-growth and sustainability.

The last article by Hadia Majid focuses on power outages and their effects in slums in Lahore. Based on surveys conducted in various slums located in the centre and peripheral areas of Lahore, Majid concludes that the electricity crisis remains one of the biggest developmental hurdles currently faced by Pakistan especially because these power outages are not even-handed. While low productivity levels on-the-job have been recorded and studied, household performance has been ignored greatly which she tends to highlight through this article.

Revealing Facts is based on a survey conducted with employed professionals regarding the chronic power outages in Pakistan and its impact on productivity. The results of the survey have been exhibited through charts and figures. While a majority of workplaces rely on back-up power,

there is still an alarming 9 per cent which have no power back-up forcing several employees to sit idle for numerous hours at work every day. With similar or worse power outages at home, as a majority does not have power back-up at their residences, significant productivity losses have been reported. The most disconcerting fact though is that if nothing is done in this regard soon, these productivity losses would continue to widen, resulting in rising losses for our economy. It could well be argued then that this makes power supply disruption the most pressing issue for the Government of Pakistan at the moment.

DC Microgrids Initiative at LUMS for Rural Electrification

by Dr. Hassan Abbas Khan, Prof. Nauman Ahmad Zaffar and Mashood Nasir



Ease of electricity access is one of the key indicators for the estimation of quality of life as well as economic standing of any community (Peters and Sievert, 2015). The significant availability of electricity is crucial for human well-being and social resources development. The lack of availability of electricity hampers basic human rights like access to clean water, health care unit and schooling facilities, therefore, declines the socio-economic status and enhances poverty. Substantial provision of electricity can contribute for improved standards of living including better health, education, agricultural, industrial and employment opportunities (Peters and Sievert, 2015)(Reiche et al., 2000).

Around 1.3 billion people throughout the world that constitute nearly 18 per cent of the global population lack access to electricity (Niez, 2010) (IEA Database 2014). It is also estimated that

around 85 per cent of the people lacking access to electricity are the residents of rural areas (IEA Database 2014). As per World Bank statistics, 93.6 per cent population of Pakistan has access to electricity, while the remaining 6.4 per cent is still deprived of electricity. One such remote school near the valley of Naran is shown in the figure below, where students are deprived of the basic right of access to electricity. Being human, these children have the very right of access to well lighted, heated and ventilated class rooms. Moreover, basic computing facilities that are a key to advanced learning are also contingent on the availability of electricity. Therefore, rural electrification is the need of the hour to attain the social benefits associated with easy access and reliable availability of electricity.

In SSE at LUMS, we believe that rural electrification is one of the powerful tools and a catalyst for poverty eradication, health care and education enhancement, employment creation and climate adaptation. Therefore, Energy and Power system cluster at SSE is determined to provide advanced technological solutions to enhance the rural electrification rate with optimal utilization of localized resources.

Figure 1: Remote Area School without the access of electricity



A microgrid is an interconnected network of localized generation, distribution and utilization of electrical energy without much dependence on the national grid. In such remote areas, due to unavailability of national grid and electric utility, a micro grid is considered as a most promising means for generation, distribution and utilization of electricity. Due to green nature and abundant availability of solar energy in most of the non-electrified areas, Photovoltaic (PV) power plants are highly suitable. The main emphasis of research at SSE is the design and development of efficient, smart, reliable and fault tolerant models of microgrids, which may provide electric power to the local community beyond their subsistence, catering to the needs of community loads such as schools and health care units. Another salient feature of the developed models is their capability of resource sharing such that each individual house may transfer power to the grid as well as its neighboring house, thus enhancing community strengths with the available installed power capacity.

In a novel model developed at our lab microgrid is formulated as an interconnected combination of households in a village. Each Individual house is modeled as a nanogrid, therefore, every nanogrid is connected to other nanogrids and collectively they formulate a microgrid. Each household has its own local generation in the form of PV panel, its own local storage in the form of battery and resource sharing capability in the form of interconnection with the microgrid. Therefore, each house may generate, store, distribute as well as demand power from the grid depending upon its requirements. The pictorial representation of a nanogrid i.e. a basic household unit is shown in figure below (Nasir et al., 2016).

The model developed in the lab consists of 40 such houses where each house has the provisioning of 40W of lighting, fan and charging load. During the day, when natural light is available, lighting needs are reduced; therefore, extra power is fed to the community load such as schools or health care units.

Figure 2: Model of a nanogrid (Nasir et al., 2016)

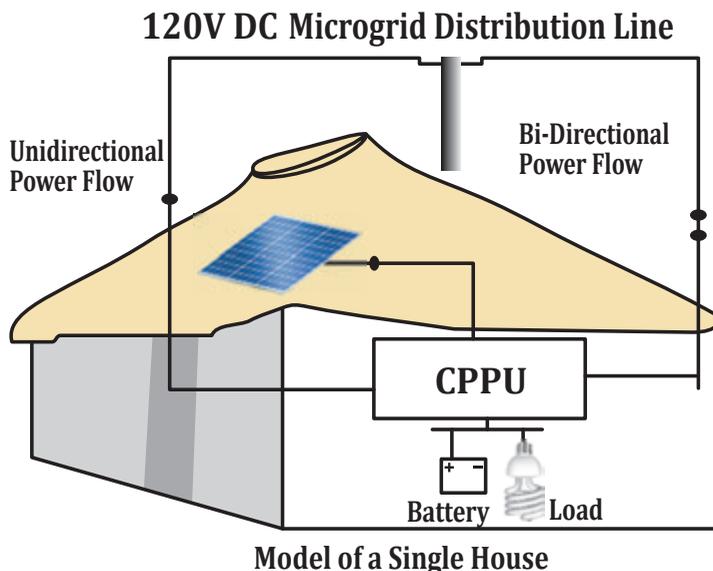
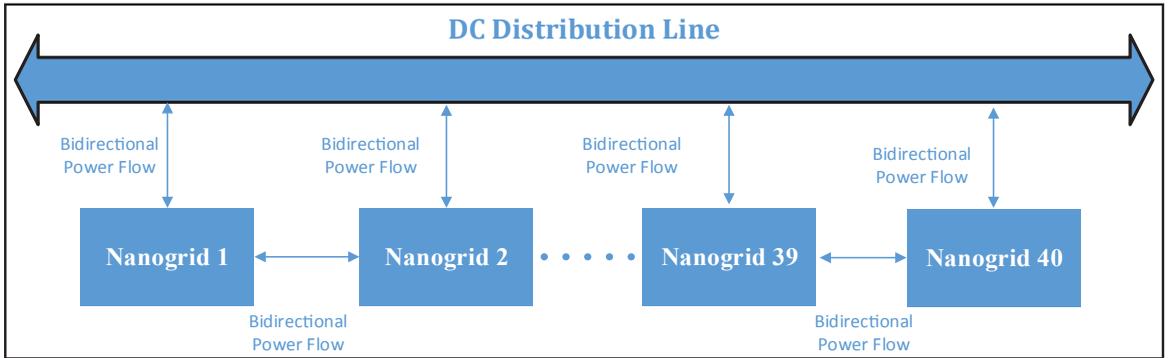


Figure 3: Block Diagram of a nanogrid

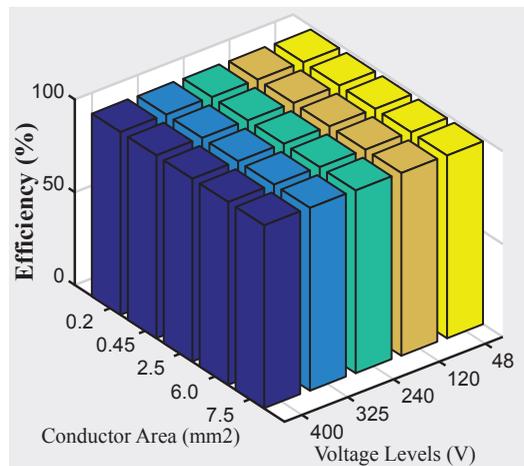
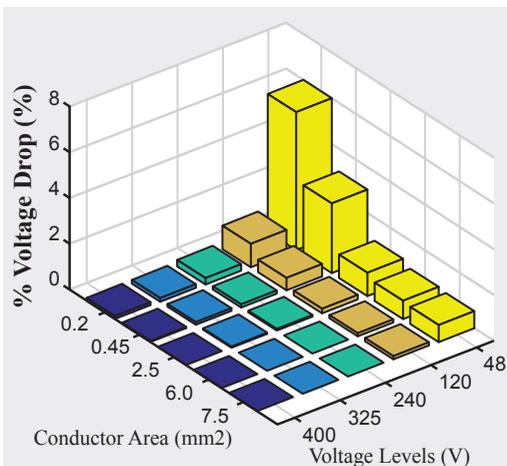


PV Panels generate direct current (DC), while battery stores DC, therefore, for such a remote location based microgrid, DC microgrid is more viable than alternating current (AC) microgrid. Moreover, DC loads are generally more efficient than AC loads. Keeping in view the distribution losses and safety factors, various levels of DC voltage have been tested in lab via simulation and practical experiments. It has been concluded that 120V DC is viable for the proposed microgrid with respect to efficiency as well as safety. For the system level implementation and design of microgrid, various sizes of the conductors are also tested for efficiency and distribution losses.

It has been concluded that with the average sized conductor of 120mm², reasonable power transfer efficiencies may be achieved. In order to enable the resource sharing feature, various scenarios of power sharing between different houses were tested. The results of analysis for peak and average power sharing are shown in figure below (Nasir et al., 2016).

The scaled down version of the microgrid is practically implemented on hardware in the laboratory. Very sophisticated bidirectional power electronic converters are designed to ensure the bidirectional flow of power to and fro the

Figure 4: Analysis results for voltage drop and efficiency at average power sharing between houses (Nasir et al., 2016).



microgrid. The intelligent controlling feature dictates the flow of power and decides the state of charge of the battery depending upon the available power on the microgrid. Therefore, even if one house needs power above its dedicated generation, it may be provisioned via intelligent controller. In the very similar manner, if one house has access to electricity generation, more than its requirement, the extra power is fed back to grid via intelligent controller. The system level implementation is shown in the figure below.

Since, every power system is vulnerable to faults, therefore, in order to ensure continuous supply of electricity from generation to the consumer, protection schemes are designed to cope up with all possible faults.

The developed microgrid model ensures optimal utilization of the installed resources, with maximum power flow efficiency, therefore, highly suitable for rural electrification. The practical installations on the proposed pattern will enhance

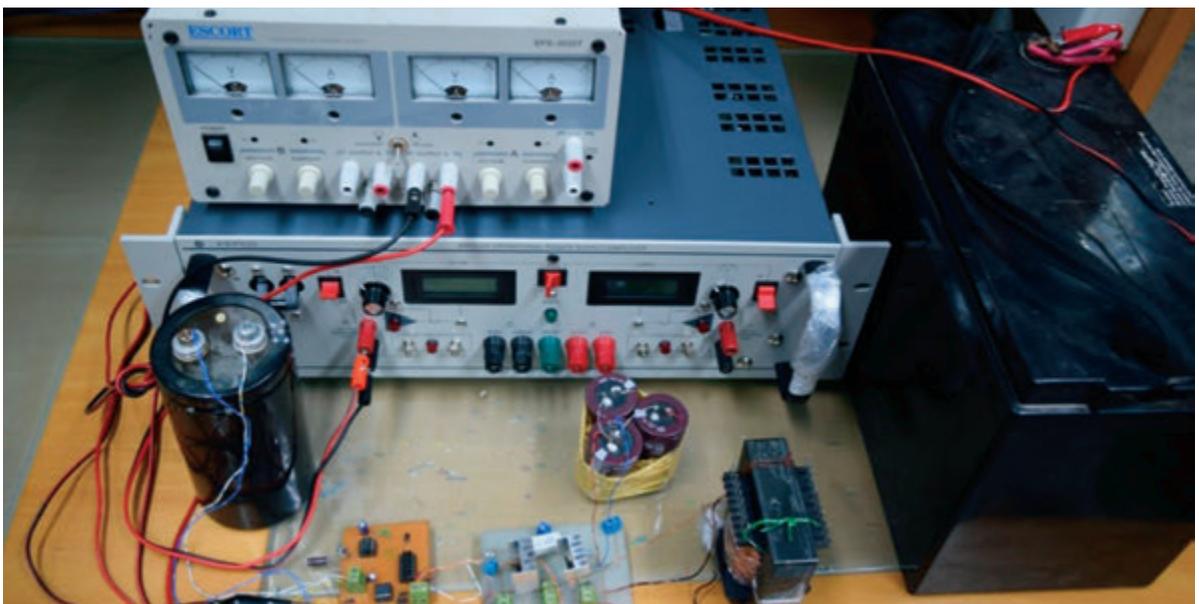
the power quality and availability of power to consumers with no electricity. Therefore, the technological development of such microgrids is a stepping stone towards enhanced rates of rural electrification that will ultimately lead to a better and prosperous community.

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Figure 5: Hardware Implementation of the Microgrid Model



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Reimagining Adam Smith: Poverty, Inequality and the State

by Aqdas Afzal



Adam Smith is often hailed as the intellectual godfather of modern capitalism. Smith is most widely known for forwarding the notion of the Invisible Hand—a metaphor for unfettered markets. Simply stated, Smith’s Invisible Hand alludes to the notion that unfettered markets—markets free from state regulation—deliver the best economic outcomes. For this reason, Smith is often painted as a veritable economic conservative, whose sole purpose in life was the promotion of capitalism through ostensibly self-regulating unfettered markets. In other words, according to Sen (2010), there is a popular conception regarding Smith as “...a one-idea man propagating only the excellence and self-sufficiency of the market” (p.52).

This short essay, however, challenges the popular conception of Adam Smith as a one-idea man obsessed with promoting unfettered markets. This essay makes a case for reimagining Adam Smith. Smith was a profoundly deep social thinker who, among other things, pondered over the issues of distributive justice and inequality. A child of the Enlightenment, Smith was also a keen observer of economic and social currents during the time the Industrial Revolution rolled out in Britain. He specifically captured the impact of those currents on the lives of the poor. This essay also argues that there is no dichotomy between the market and the state in Smith’s work. That is to say that Smith’s views were not anti-state, as his Invisible Hand

was firmly entrenched in the political institutions of the state—if no state, then no market.

Distributive Justice and Inequality

Adam Smith, according to Samuel Fleischacker (2004), is one of the first theorists in the Western intellectual tradition to include assistance for the poor in the definition of distributive justice. Prior to Smith, distributive justice was understood more with respect to ideas of what people deserved, or merited, and came into play only in the distribution of public office. Aristotle, for instance, made a case for a just selection for public office under the banner of distributive justice. Social movements like the Levellers framed their arguments for universal suffrage in the language of distributive justice. However, prior to Smith, assistance for the poor was never brought under the banner of distributive justice. Specifically, to quote Fleischacker (2004):

Not a single jurisprudential thinker before Smith—not Aristotle, not Aquinas, not Grotius, not Pufendorf, not Hutcheson, not Blackstone or Hume—put the justification of property rights under the heading of distributive justice. Claims to property, like violations of property, were matters of commutative justice; no one was given a right to property by distributive justice (p.213).

Smith was also alarmed by the rising tide of inequality in late 18th century Britain. According to Hont & IngatiEFF (1983, p.3) one of the earlier drafts of the *Wealth of Nations* (1776) contained the following: “[T]he poor provide both for

themselves and for the enormous luxury of their superiors. The rent which goes to support the vanity of the slothful landlord is all earned by the industry of the peasant." Though the average laborer in "commercial society" Smith noted, had more possessions than an "African king" the laborer still rewarded with only a "... 'very small share' from his own productive labour [sic] and was 'buried in obscurity', 'thrust down into the lowest parts of the earth' (Hont & Ignatieff, 1985, p. 25)."

Empathy for the Poor

Smith shows remarkable empathy and understanding for the poor of his time. In certain places, Smith comes across almost as an ethnographer with respect to his detailed observations —creating a multidimensional picture of the poor during the late 18th century through his detailed observations on social customs (children, education and diet), marriage and reproductive behavior as well as world-views. In more than one place, Smith's empathy for the poor is palpable:

No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable. It is but equity, besides, that they who feed, clothe, and lodge the whole body of the people, should have such a share of the produce of their own labour as to be themselves tolerably well fed, clothed and lodged. (WN, I.viii.)

It may be argued that Smith's greatest achievement lies in forcing his audience to see the poor in a new light by creating a relatable image of the poor. Until the end of the 18th century, a majority of people in the Christian world believed that God had created their hierarchical society that

contained the most virtuous at the very top, occupying positions of wealth or power. The wealthy and the powerful were supposed to assist the poor but only in times of grave crises like famines but never to raise the poor above their "proper" station in life. Within that context, Smith presents the poor as remarkably dignified. "Smith urges his readers to see the average poor person as much like themselves: equal in intelligence, virtue, ambition, and interests with every other human being..." (Fleischacker, 2004, p. 207). In other words, one of Smith's novel contributions is in forcing a shift in the moral imaginations of the poor.

State and Market

Though Smith's Invisible Hand has been interpreted as a vote of confidence for only unfettered markets, Smith's actual views were not anti-state. Smith believed that the state must provide certain essential services that are not going to come about via unfettered markets. The state must provide rule of law, defense against foreign aggression and the "...erecting and maintaining of certain public works and certain public institutions, which it can never be for the interest of any individual...because the profit could never repay the expence [sic] to any individual..."(as cited in Heilbroner, 1987, p.289). The crucial importance of the state for Smith can also be judged from the fact that Smith's Invisible Hand is firmly entrenched in the political institutions of the state, meaning that Smith seemed fully cognizant that without state enforcement even the idea of property rights—a necessary condition for unfettered markets and capitalism—would not exist. In other words, if no state then no market. Mark Blaug (1997) has underscored this important point:

So frequently accused of Harmonielehre, the vulgar doctrine of the spontaneous harmony of interest, Smith instead seems to be forever emphasising [sic] that the powerful motive of self-interest is only enlisted in the cause of the general welfare under definite institutional arrangements. (p. 61; emphasis in original)

Economic Growth and its Discontents

Given that Smith placed his Invisible Hand within the political institutions of the state, the Invisible Hand, or unfettered markets, appears to be only a means for achieving individual well-being. Smith checks his support for unfettered markets and the ensuing economic growth. Smith opines in the Theory of Moral Sentiments (1757):

Power and riches appear then to be what they are, enormous and operose machines contrived to produce a few trifling conveniences to the body... [t]hey are immense fabrics, which it requires the labour of a life to raise, which threaten to overwhelm the person that dwells in them, and which... can protect him from none of the severed inclemencies of the season... sometimes more exposed than before to anxiety, to fear and to sorrow; to disease, to danger and to death. (as cited in Heilbroner, 1982, p.432; emphasis mine)

In addition, Smith lists the negative social outcomes of engaging in acquisition. At one point, Smith mentions how the process of acquisition causes utter intellectual ruination of the working classes by turning the working classes "...stupid and ignorant as it is possible for human creature to become..." (as cited in Heilbroner, 1987, p.155).

Finally, Smith does not have encouraging words for the capitalists of his time, either. Smith believed that the interests of the capitalists and that of the public always worked at cross-purposes. Smith pens his feelings towards the capitalists specifically in his *magnum opus*, the *Wealth of Nations*:

[F]rom an order of men whose interest is never exactly the same with that of the public, who generally have an interest to deceive and even oppress the public, and who accordingly, have, upon many occasions, both deceived and oppressed it. (as cited in Heilbroner, 1987, p.155)

Conclusion

In light of the preceding evidence, it is clear that Adam Smith was not a one-idea man, only interested in promoting unfettered markets or capitalism. Smith pondered deeply over important social issues like distributive justice and inequality. Moreover, Smith did not ignore the poor of his time as is shown by his detailed observations as well as his pushing his audience to shift their moral imaginations of the poor. Finally, Smith was also not antipathetic to the state as he placed the Invisible Hand squarely within the political institutions of the state.

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Do states have relevance in a market-dominated world?

by Hamza Siddiq Khan



We live in a market-dominated world. Order of the day dictates that states should take a back seat and focus on creating an enabling environment for markets rather than taking a more activist approach. The optimism in markets is grounded in Adam Smith's idea of 'invisible hand'; free markets lead to efficiency as if guided by unseen forces. Proponents of free-market criticise states as inherently sluggish and bureaucratic and subsequently advocate a minimalist view. This ideology of market fundamentalism lies at the core of modern day capitalism. The resurgence of free-market doctrine was fuelled by the rise of a particular economic order called Neoliberalism in the 1980s. The spectacular rise of China and India, largely driven by market-oriented model, lifted around 600 million people out of extreme poverty and has further given credence to market ideology. The triumph of free-market doctrine has raised concerns whether states have any scope and relevance in the neoliberal era. This debate, however, underwent a dramatic shift as the biggest crisis of capitalism since the Great Depression unfolded. The global financial crisis of 2008 has challenged the credibility of the free-market model and revitalised the idea of an active state. Yet, post-crisis recovery efforts continue to rely on markets. This article explores whether states have any relevance in a market-driven world. I shall demonstrate that despite the resilience of free-market ideology, states have become increasingly

relevant in the 21st century. I argue that contrary to neoliberal demands, there is a huge scope for effective state intervention. This article first considers the wider state vs market debate. It will then explore opportunities and possibilities for a more proactive public sphere in the context of new challenges.

Market vs the state has long been one of the central themes of development discourse. Proponents of free market approach oppose intervention on the grounds that states are bureaucratic, corrupt and inefficient. They support their viewpoint by citing numerous development failures in third world countries which were caused by malfunctioning states. Krueger (1997) pointed to the notion of 'rent-seeking' to describe how states could become captured by special interest groups leading to policies that benefit a privileged minority. For instance, Latin American and African states engaged in rent seeking behaviour during Import Substitution Industrialisation policies in the 1950s and 1960s. Governments are likely to be motivated by private gains rather than wider public welfare. This is particularly true for neopatrimonial states such as Nigeria where politicians have appropriated scarce resources for personal motives. The relationship of the state and the private sector in such contexts have been mutually corrupt. Political instability, inconsistent policies and abuse of public resources for personal gains have hindered state-led efforts to promote development (Kohli, 2004). From this perspective, the more we can restrain government action, the better. The government role should only be limited to creating the right conditions for markets. This is based on the assumption that the market is the

best way to ensure innovation and growth and state's role is only to ensure smooth functioning of markets. So long as the state maintains stable property rights and an environment of low transaction costs and low expropriation risk, the market will work efficiently.

This basic polarity has shaped development thinking and policy which has swung between state-centric and market-oriented models of growth. During the 1950s and 1960s, big push, intervention and Import-substitution were prominent. These ideas lost momentum during the 1970s as stagflation kicked in. As the crisis deepened during the 1970s, state-led model lost ground to more market-oriented thinking that emphasised deregulation and an outward orientation. By the late 1980s a convergence of ideas had developed around a set of policy principles that John Williamson termed the 'Washington consensus' (Rodrik, 2009, p.16). This marked a paradigm shift in development history with the emergence of a new economic and political order called neoliberalism.

Neoliberalism unleashed an unprecedented era of free market supremacy. Inspired by liberal principles of liberty and freedom of the eighteenth century, the view that human freedom was guaranteed by market freedom became the cornerstone of neoliberal thinking. Harvey (2005) argues that ideas of economic freedom underpinning neoliberal thinking had long been in circulation, promoted by Friedrich Hayek and Milton Friedman. But they were actively pursued as policy when Ronald Reagan and Margaret Thatcher preached free market ideology in the US and Britain in the 1980s. So, both Thatcher and Reagan are seen as heroes in the emergence of neoliberalism. Although neoliberal thought developed in Europe and America, it quickly

spread throughout the world marking a free market revolution. International institutions including the IMF, World Bank and WTO played a vital role in this process. While originally designed to finance the rebuilding of Europe after the devastation of World War 2 and to ensure global macroeconomic stability, these institutions became mouthpieces of neoliberal ideology (Stiglitz, 2002). They promoted neoliberal policies of liberalisation, austerity and deregulation by repackaging lending in the form of the infamous Structural Adjustment Programs. Structural Adjustment Programs are policy prescriptions that encourage structural changes in an economy by encouraging recipient countries to open up their markets and reduce government intervention. These programmes were adopted widely by many African, Latin American and Asian countries as a way out of the debt crisis. This way, free-market revolution was brought around the world.

In short, today the dominant narrative is that of market fundamentalism. It implies that the market can resolve almost all social, economic and political problems. The less the state regulates, the better off we will be. Public services should be privatised, public spending should be cut and business should be freed from regulation. This story has dominated development policy and practice for around 35 years. In 2008, however, the global economy saw its worst crash since the Great Depression of 1930. This has challenged the neoliberal economic orthodoxy as absolute confidence in markets suffered a blow of epic proportions. The crisis has brought the state back on the stage.

Recent literature is replete with scholarship on the causes of the global financial crisis of 2008. While detail of how the 2008 crisis unfolded will simply be beyond the scope of this paper, in simple

terms it was a manifestation of unprecedented market failure. It challenged the idea that markets always get things right. In certain circumstances, unfettered markets do not work especially in finance (Cassidy, 2009). Extension of free-market doctrine into financial markets was a step taken too far, which culminated in the big crash. Besides market failure, it was a major failure on part of regulators and politicians. Regulators failed at enforcing an effective regulatory apparatus, providing a fertile backdrop to disaster. Politicians were naively distracted by happy voters engaged in mass consumption due to easy access to mortgages.

The Great Crash of 2008 has drawn renewed attention to Keynesian ideas which dominated development thinking in the post Second World war period. John Maynard Keynes, one of the most prominent economists of the twentieth century, noted that market failure can be so socially destructive that regular state intervention may be justified. Following the widespread slowdown of the Great Depression in 1930, Keynes advocated a greater role of the state in preventing a future crisis through fiscal intervention and counteracting market instability. What followed his ideas was a new model of 'embedded liberalism'; embedding markets in a whole set of institutional restraints and regulatory structures (Harvey, 2005). This model of managed capitalism became widely accepted in the post-war period and delivered high economic growth and stability during the 1950s and 1960s. While these ideas have regained credibility in the aftermath of the crash, the recent crisis has failed to restore the economic model of managed capitalism as pressure to resume markets or an early return to business as usual are very great. While the great financial crisis may have weakened its foundations, neoliberal capitalism is still very much intact. Rather it has come out of

the crisis as even stronger. Markets reign while states continue to shrink.

Even the 'good governance' agenda advanced by the World Bank is informed by neoliberal thinking which diminishes states (Khan, 2012). According to this approach, all that states must do is ensure well-functioning markets by protecting property rights, lowering corruption and ensuring stability. However, I show, states can play a key role in stimulating economic development beyond enabling markets to function well. This view is supported by evidence from East Asian countries where rapid growth is largely attributable to state intervention. East Asia exhibited significant departure from the 'Washington Consensus' model as neither country undertook significant deregulation or liberalisation of its trade into the 1980s. What was unique about East Asian experience was selected support from state in targeted sectors in the form of directed credit, subsidies and trade protection. From the perspective of East Asian miracle, growth requires specific governance capabilities on part of states to identify productive sectors and maintain political stability. Even the recent success story of China supports this view. While china growth was driven by market-oriented reform, government played a key role in terms of addressing the most damaging forms of corruption and developing specific capabilities.

Despite widespread free market rhetoric, states remain important players. Karl Polanyi, the world-renowned economic historian and critic of Adam Smith, challenges the idea that markets and governments are separate and autonomous entities. Polanyi (cited in Somers and Block, 2014) maintains there is no such thing as a free market and the very idea of an economy independent of state interference is a 'stark utopia'. He further

warns that the attempt to create a free market society is bound to fail and will inevitably produce undesirable consequences. The financial crisis is a case in point. Even in a market-dominated world, there simply is no economy without government rules and institutions. It is not just that society depends on infrastructure, legal courts and other public goods that only government can provide. It is that all of key inputs into the economy—land, labor and money—are only created and sustained through continuous government action. The employment system, the arrangements for buying and selling real estate and the supplies of money and credit are organised and maintained through the exercise of government's rules, regulations and powers (Somers and Block, 2014).

While emphasising the role of state in fostering long-run innovation led economic growth in her groundbreaking book "The Entrepreneurial State: Debunking Public Vs. Private Sector Myths", Mazzucato (2013) illustrates that the role of government in the most successful economies has gone way beyond creating the right infrastructure and setting the rules. She challenges the common myth of an inefficient, bureaucratic state versus a dynamic, innovative private sector. She argues that Silicon Valley and the emergence of the biotech industry are usually attributed to brains behind the small high tech firms like Facebook. Europe's lag behind the USA is often attributed to the relatively longer arm of the state which they see as stifling the private sector. Success stories of these high tech sectors in the USA are used to make a case for a minimal state and dominant market. Contrary to the popular view, the author demonstrates how the much-celebrated dynamism in private sector has been in fact driven by huge backing from the state in the form of high-risk investments. Every technology behind the smart iPhone was government funded such as the internet, GPS,

its touch-screen display and the voice-activated Siri. Even more startling is the revelation that the algorithm that led to Google's success was funded by a public sector. Hence, even in the most 'market-oriented' society like that of the US, it was the government that made innovation-led growth possible by actually developing strategic mission and directing public investment in potential areas. This shows a huge scope for state action in spurring growth in the post-crisis global economy.

The scope of state action becomes even more credible and extensive in the wake of the present-day global threats and challenges that require a far more proactive role of states. The problem of rising global income inequality is an example that demands immediate government action. A new report by Oxfam (2016) has focused attention to the alarming extent of wealth inequality in the world, showing that the 62 richest billionaires own as much wealth as the poorer half of the world's population. The gap between the rich and the poor has widened considerably. Behind the dramatic rise in inequality are the pro-capitalist neoliberal policies that limit state budgets and promote free markets. The rise in the fortunes of the ultra-rich is the direct result of policies such as the reduction of tax rates for the wealthy, the privatisation of public assets and cuts in public spending. In the final part of the report, Oxfam has outlined a three-pronged approach to tackle inequality; a crackdown on tax dodging, higher investment in public services and higher wages for the low paid. All three measures require a more activist state approach. There is a strong case for the state to redistribute wealth and make society more equitable.

Perhaps the greatest challenge requiring effective government action is climate change. Climate change is the greatest concern of our age,

threatening to undo decades of development efforts by threatening health, food security and infrastructure. People are already experiencing the adverse effects of climate change which include increased variability in weather patterns, rising sea levels and more extreme events. The enormous scale of the threat requires urgent and well-coordinated global response. While efforts of private sector and civil society are vital to combat dangerous impacts of climate change, states will have to play a leading role.

To address climate change, countries around the world signed a historic global climate treaty in Paris this December. The agreement requires developed and developing countries alike to cut their emissions to limit temperatures to 1.5 Celsius above pre-industrial levels. This means a huge task for national governments in terms of achieving substantial reductions in greenhouse gas emission. This also means redefining how we approach development by mainstreaming climate change in national development planning and policies. So for example, when a road is being built in a country, the planners need to ensure that it is resilient to the floods that have become increasingly regular. More important, investments in clean, renewable energy are needed for creating a low-carbon future. This will take effective commitments from national governments to divest from fossil fuels. Finance will be critical in this process. National climate action plans submitted by more than 180 countries will require huge public funding. All of this requires a strong role of state in mitigating impacts of climate change and transitioning to a green economy. This wouldn't be possible under the current economic doctrine which promotes a minimal state.

Naomi Klein in her powerful latest book has articulated this problem forcefully. She draws

attention to the widespread denial of climate change amongst powerful rightwing think tanks and lobby groups which has resulted in lack of effective political response. The timing of the climate crisis is lamentable as it has descended in an era where public sector is marginal, leaving little scope for hope. Environmental concerns and climate change have been marginalised in the wake of the logic of austerity. Whereas what we need in this critical time is extensive state action. NHS, one of the the UK's most cherished institutions faces a similar dilemma. Hospitals face huge deficits and their financial situation is deteriorating rapidly, pushing the institution to an existential crisis. This crisis has been driven in part by austerity measures which shrink the state. As a result, social services are disproportionately hurt. Given the pressing challenges, dismantling the brutal logic of austerity is need of the hour.

Given the gravity and urgency of latest challenges, the role of states is simply indispensable. I have shown that states have played an important role in spurring development rather than simply providing the conditions for markets to flourish, questioning the minimal role prescribed by neoliberal ideology. This has been supported by evidence from East Asian and China. Even in countries such as US, viewed as purely market-driven, states were critical in driving innovation-led growth. Present-day challenges such as inequality and climate change provide a legitimate backdrop for the continued relevance of the states. Lessons from these experiences are important. For ensuring a safer, sustainable and more equitable future, an expansion of public sphere will be necessary.

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Power cuts: is the load shared equally? Evidence from the Slums of Lahore

by Hadia Majid



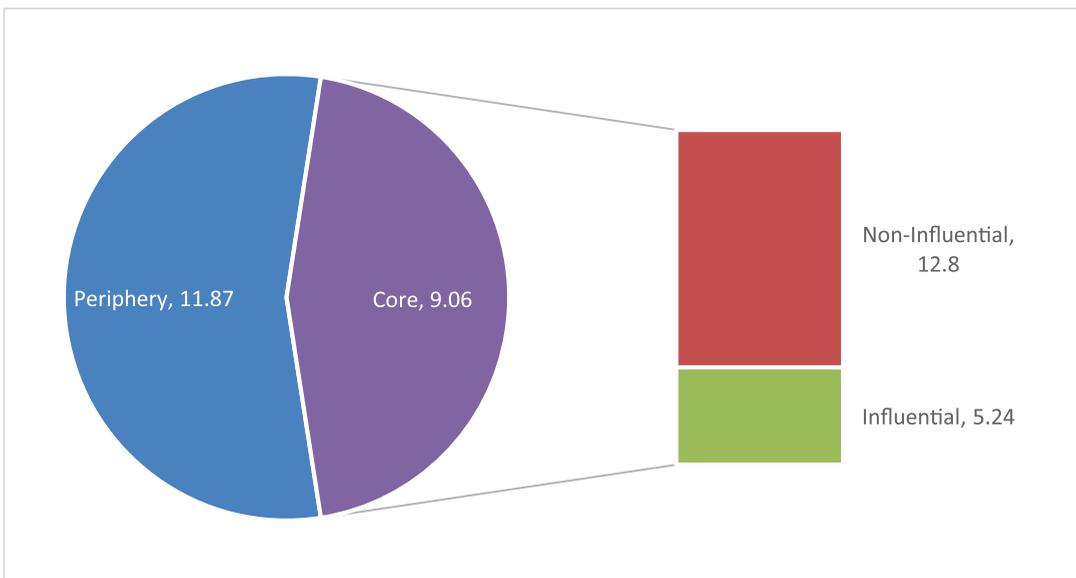
Pakistan has been in the grips of a major electricity crisis for nearly a decade. While its devastating effects have eased in more recent years, at its peak, some communities reported as little as only one hour of electricity in the day. And there was tremendous variation in the frequency and length of power outages across the country, particularly between rural and urban areas. With the Supreme Court ruling of June 2013 it became mandatory for regulatory authorities to ensure equal hours vis-à-vis power outages in rural and urban areas. However, despite the USAID real-time data monitoring program in place to oversee numerous key grid stations, there is yet to be

complete compliance. It also remains unclear whether 'equal' simply translates into playing a game of averages.

Data indicates that while on average the gap between rural and urban outages may have closed, there continues to be substantial variation in electricity outages across different regions of the country. Additionally, anecdotal evidence suggests that even within cities the length of power cuts varies depending on the area of residence. I explore the factors driving the variation in frequency and length of power cuts, as well as the consequences of and the coping methods used by households in case of electricity outages during a field exercise conducted in Lahore in 2015.

My field team conducted quantitative and qualitative community and household level surveys in a total of eight electrified slums in

Figure 1: Average Hours of Load-shedding



Lahore that varied in terms of their location – four were located in the centre of the city, with the rest located in peripheral areas.¹ Additionally, three of the slums were in an industrial area or near a gated community such as an army colony or judges/governmental officials’ residences, which I classify as ‘influential’ neighbourhoods, and were on the same electricity grid as them. It is worth noting here that, as expected, all of the slums near influential communities were in the centre of the city.

The primary hypothesis driving the fieldwork and the selection of slums was that while the slums themselves may be poor income areas, do their residents see an ostensible improvement in their electricity supply by virtue of being: 1. in the centre of the city, and 2. close to a more ‘influential’ neighbourhoods?

The short answer is, yes.

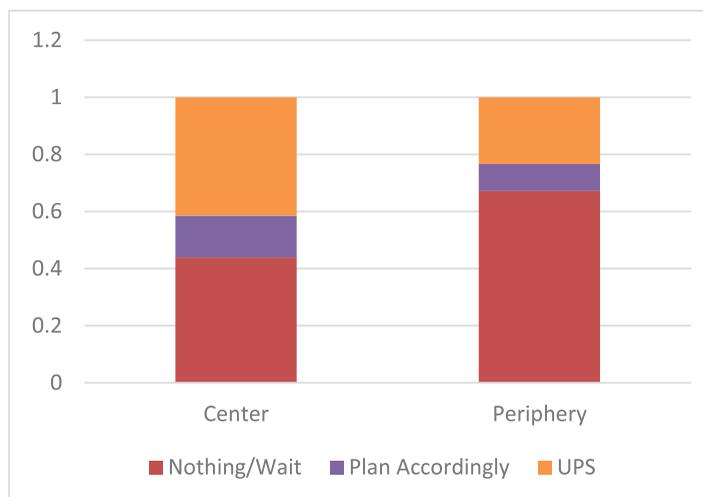
Figure 1 below depicts the average hours of electrical outage experienced by the residents of the slums at the peak of the past summer. While the peripheral slums saw an average of about an

additional three hours of load-shedding when compared to those in the centre, within the centre or core of the city there was a mammoth difference of about eight hours depending on the status of the neighbourhood surrounding the slum.

Clearly then it is the slums in non-influential areas, be they in the centre or the periphery of the city, that are bearing the brunt of the burden of the electricity short-fall. Additionally, I find that within the core, where grids are likely to have the greater load, it is the slums in non-influential neighbourhoods that see the disproportionate share of power outages – reporting longer hours, on average, of load-shedding that even the peripheral ones.

Not only do the average hours of load-shedding vary depending on the location of the slum, but so do the households’ coping mechanisms – most households that live in slums located in periphery tend to simply wait for the electricity to be restored while UPS ownership is more common in centrally located slums. Curiously, despite the lower average number of hours of load-shedding in central slums, the dwellers in these

Figure 2: Coping Mechanisms



communities report planning ahead more when compared to the residents of peripheral slums i.e. the use of candles, torches, emergency lights and fans etc. is higher in the former slum type. These disparities are likely driven by the difference in average household incomes between the two types of settlements.

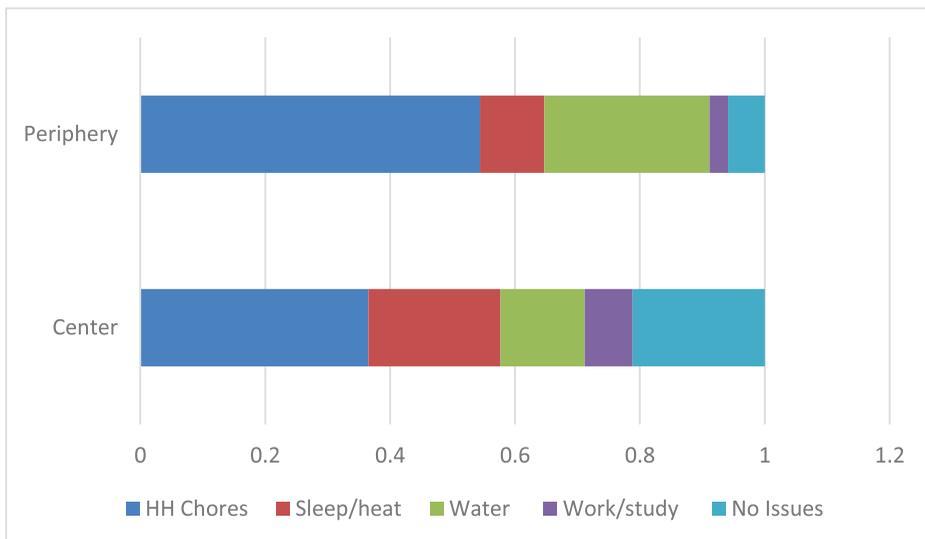
The differences in hours of power cuts and the consequent coping mechanisms are reflected in the primary issues faced by households in the case of power breakdowns. Thus, I find that households in the periphery who generally face longer outages are less likely to report facing ‘no issues’. Moreover, since most such households typically tend to simply wait for the power to be restored, they report being unable to complete household chores more regularly than those in central slums.

Similarly, peripheral households report water shortage issues caused by a lack of electricity with more than twice the frequency reported by centrally located households. Interestingly,

despite facing fewer hours of load-shedding, households in central slums report lighting and cooling issues more often. And also seem more concerned about the effects of power breakdowns on particularly work productivity.

Overall, my findings indicate that the duration of power cuts is not even-handed. Rather, there is tremendous variation across slums depending on the location of the community both in terms of its distance from the centre as well as its proximity to influential neighbourhoods. This inequitable distribution in length of power outages clearly points at issues of injustice. At the same time, I find that the negative effects of longer hours of electricity outages are compounded by the lack of access to adequate alternate means of electricity such as UPS devices or even emergency lights or fans. And while the survey respondents typically tended to state problems in completing day-to-day household tasks as the primary issue faced in the case of power break-downs, sleep deprivation – and therefore lower on-the-job productivity – was cited by one in five of all surveyed households. This

Figure 2: Coping Mechanisms



is especially revealing since while direct output losses at the firm level due to power outages have been studied, these indirect effects on worker efficiency because of problems faced at the home have not been carefully examined. Clearly then, the electricity crisis remains one of the biggest developmental hurdles currently faced by Pakistan both in terms of its effects on household welfare as well as its impact on firm output and therefore long-run economic growth.

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Note

¹ The fieldwork was funded by the LUMS Faculty Initiative Fund.

Revealing Facts Page – Dealing with Power Outages

In spite of changing regimes and political governments, the underlying problem of power outages in Pakistan has not met with a permanent and lasting solution. Electricity production has been increased, capital has been invested, scheduled distribution has been put in place but yet we continue to see a gap between the demand and supply of electricity and power outages continue to plague the country significantly reducing industrial and tertiary growth in Pakistan. To combat frequent power outages, alternatives for uninterrupted power supply have been made available. While generators and Uninterrupted Power Supply (UPS) have soared in demand, the installation and operational cost deters many users. The survey in discussion hereunder was conducted by Rozee.pk during the summer of 2012 with about 3000 respondents over 193 cities in Pakistan.

The first figure shows through a color-coded scale intensity of power outages in various regions of Pakistan. From Upper Central Punjab to Khyber Pakhtunkhawah, Gilgit and Kashmir – around 42.17 per cent of Pakistan – there is an estimated

load shedding of an average of four to eight hours every day. In Central and South Punjab till northern parts of Balochistan, power outages have been reduced to an average of two to four hours. Central parts of Sindh and lower Balochistan, comprising of 19.44 per cent of Pakistan, face a steep outage of an average of eight to twelve hours every day. 8.88 per cent of the lowest tips of Pakistan bordering with India have the highest outage exceeding twelve hours every day.

Constrained by frequent power outages during office hours, most offices and institutions – large, medium and small – have resorted to alternative power back up. Generators and UPSs are being used by 51.32 per cent and 15.08 percent offices in the survey respectively. 24.17 per cent offices are using both forms of power backs up to ensure uninterrupted power supply. Despite this, there are a whopping 9.43 percent of offices and institutions with no power back up meaning their employed workforce and peripheral workers sit idle during the numerous hours of power outages every day.

Figure 1: Hours of Load-shedding in different regions of Pakistan

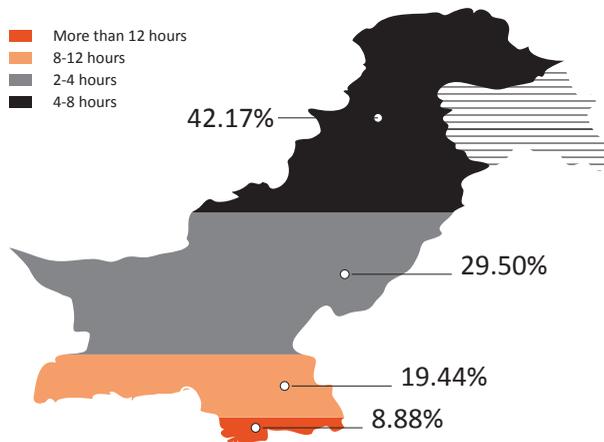


Figure 2: Power Backup at Offices

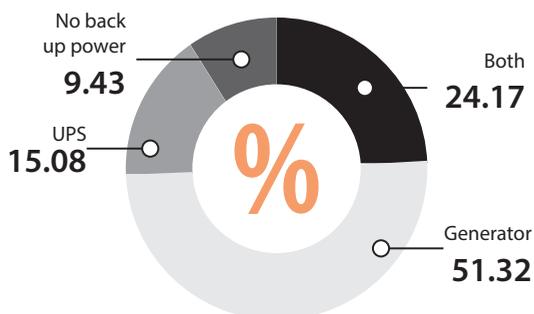
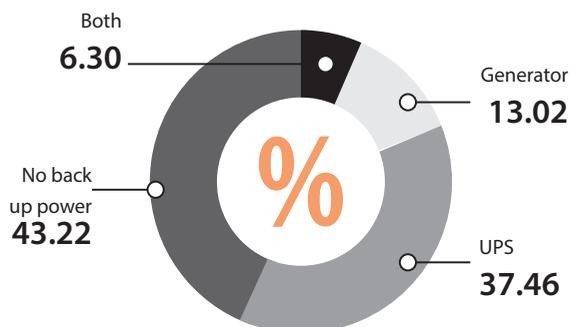


Figure 3: Power Backup at Residences



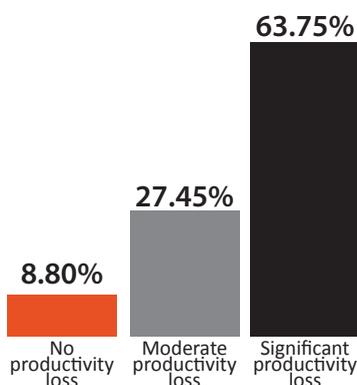
The same group of professionals also disclosed that at their homes, chronic power outages have been dealt with by similar means. 37.46 per cent of the survey’s respondents use UPS while 13.02 per cent use generators whilst 6.30 per cent use both. That leaves a mammoth 43.22 per cent who have no power back up at their residence. This manifests as tardiness, lethargy, and even disruptive behavior at work due to poor quality of sleep and general inefficiency of workers. Figure 4 indicates that more than 91 per cent of employed respondents report moderate to significant productivity losses at the workplace due to excessive load shedding at home and no back up power being available.

which any attempt towards development shall be derailed. The high prices of generators and UPS/inverters do not allow these alternatives to be explored and even when used come at the expense of their detrimental impact on the environment. Renewable energy sources, such as solar power, are overpriced at the moment to pose any viable alternative to electricity. As significant productivity losses grow, growth and development shall plummet rapidly.

Source:
<http://tribune.com.pk/story/420012/impact-of-load-shedding-power-outages-sap-pakistans-productivity/>

Such statistics only continue to show that uninterrupted power supply is a necessity without

Figure 4: Reported Productivity Losses due to Power Outages at home



Notes:

Guidelines for Authors

All submissions will be handled electronically and should be sent to sspb@lums.edu.pk. Submitted articles, not exceeding 3500 words in length, should be in UK English, and should be in the form of plain text or a word editor document. The Editorial board will review all submissions to determine their suitability for publication. Articles should not be simultaneously submitted for publication to another journal or newspaper. If a different version of the article has previously been published, please provide a copy of that version along with the submitted article. All correspondence, including notification of the editorial decision and requests for revision will take place by email. In case the author(s) do not respond in a timely manner, the Editors reserve the right to make final revisions before publication.

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