

Are Some Groups More Vulnerable to the Business Cycle Shocks than others? Regional Analysis from Pakistan's Labor Market

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Summary - 1

- Objective
 - Identify the extent of vulnerability of various socioeconomic groups to the aggregate business cycles fluctuations.
 - Asymmetric behavior of economic growth (gain less during recovery and boom phase and face strict implication of recession)
- Aggregate Economic Fluctuations
 - HP filter method is applied to find out the underlying trajectory of real economic growth and inflation in Pakistan, which also indicate happening of recessions, trough, expansions and boom in last 20 years
- Socioeconomic groups and income classes Determination
 - Socioeconomic groups (gender, location, employment status, and age cohort.)
 - Income groups (lower, lower middle, middle, upper middle and higher income classes)
- Vulnerability Measurement Strategy
 - Index is derived from the standard normal probability distribution of the real earnings of the individuals

- Panel GMM Estimation
 - Real earnings of 66 groups is determined by economic opportunities, inflation and demographic factors across various spatial entities. Endogenous covariate and instruments
- Data Sources
 - Labor Force Survey and Pakistan Social and Living Standard Measurement Survey economic survey
- Findings
 - The results indicate that food inflation have strong negative impact whereas the non food inflation increases real earnings. The findings from GMM estimation and vulnerability index are consistent.
- Policy implications
 - Policy implications are provided on the basis of existing public social safety net programs and prospective private social innovation programs targeting vulnerable and poor households

Introduction

Asymmetric behavior

- Business cycle display marked asymmetries (Keynes, 1936).
- unemployment rates present unconditional asymmetry in US and UK. Cyclical contractions have much stronger effect on unemployment than expansions. On the other hand for UK males unemployment is more sensitive to the cyclical variations than females (Frank and Peiro, 2015).
- Asymmetries and non-linearities, Okun,s law (Viren 2001,Crespo 2003, Huang and Chang 2005, Silvapulle et al. 2004)

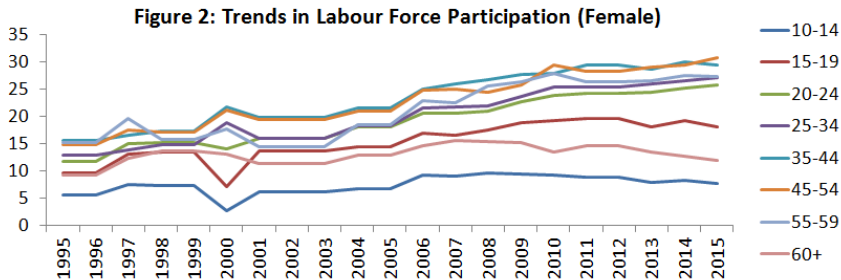
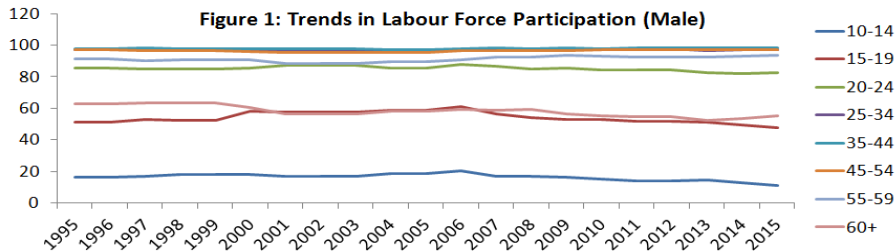
Introduction

Labour Market and Business fluctuation

- Labour supply is pro-cyclical. (Mincer, 1966, Pencavel, 1986, Heckman and Killingsworth, 1986)
- unemployment gap and output gaps are somehow equal (Erceg and Levin, 2014)
- Preferences, Ageing and Economic activity are important determinant of Labour force Participation
- Encourage female participation and discriminate them simultaneously? Reduction in discrimination is core determinant of LFP
- Cyclical movements in ratio of earnings per hour either due to the changes in the characteristics of the workers in each group or changes in pure wage discrimination over the cycle (Biddle and Hamermesh, 2013).

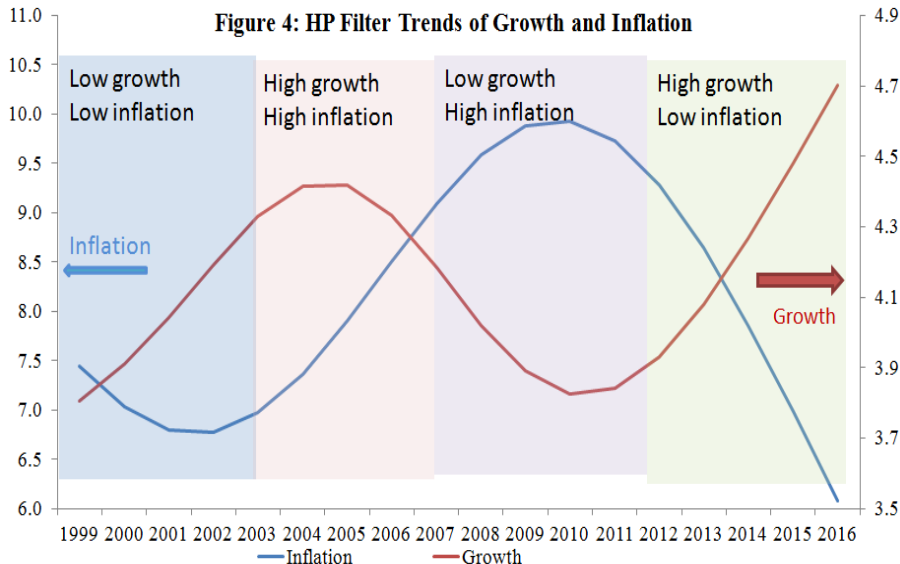
Introduction

Labour market developments in Pakistan



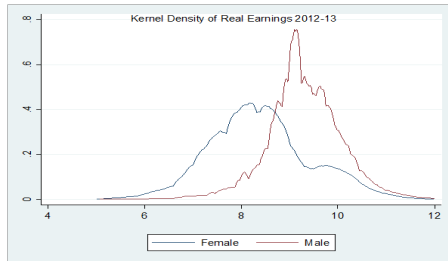
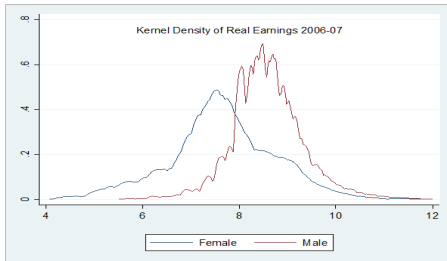
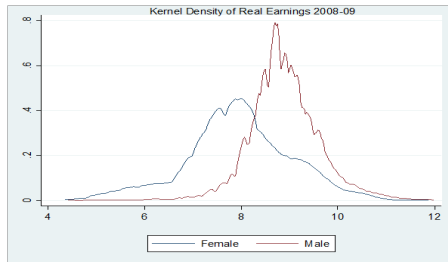
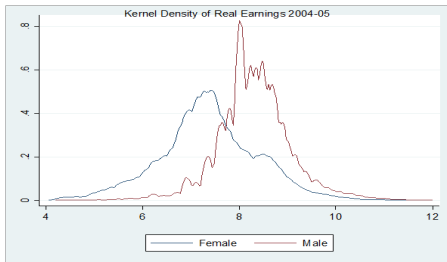
Introduction

Business Cycle Fluctuations



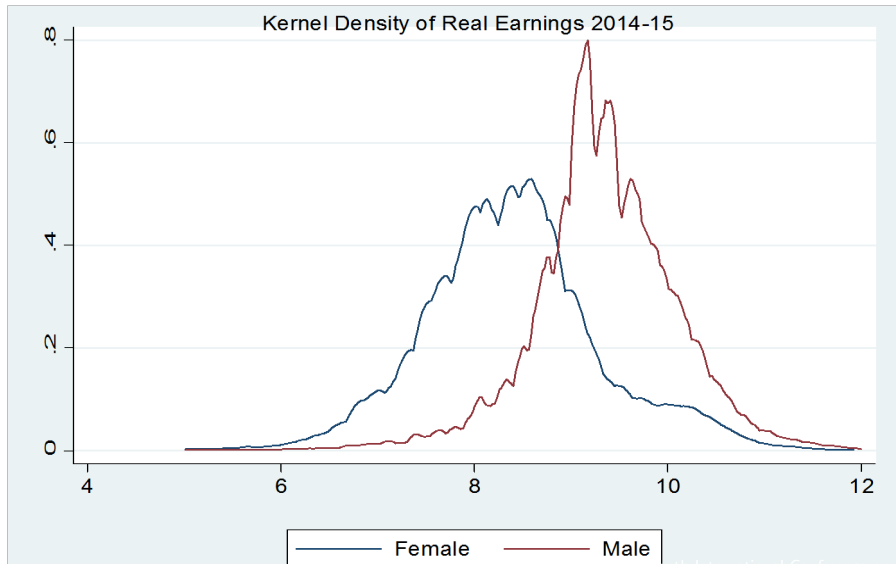
Introduction

Distribution of real income in Pakistan



Introduction

Distribution of real income in Pakistan



- Real income growth of individuals is close to aggregate economic growth is considered as normal and all the other situation indicate Vulnerability
- To compute probabilities / Likelihood of an individual in a specific socio economic group of invulnerability
- Standard Normal distribution of Z score of real earnings growth provide these probabilities, after testing the hypothesis of vulnerability.

- For each group: Real earnings are explained by economic activity, type of inflation and demographic factors
- Economic activity indicated by economic opportunities measure by labour force participation
- Food and non food Inflation
- Rural areas

Methodology

Estimation Procedure for Endogeneity

- Labour force participation
 - Instruments (Discouraged worker hypothesis, Past Inflation, Marital status)
- Non Food inflation
 - Instruments (Past values of Non Food Inflation)
- Food Inflation and fraction of rural areas are exogenous
- GMM method
- Cross sections of districts
- Time series
 - real earnings (2004-05, 2006-07, 2008-09, 2012-13 and 2014-15)
 - Inflation (1999-2016)

Results

Vulnerable groups by Gender

- Females are more vulnerable to economic shocks
- Employed females are 63.3% more vulnerable to economic shocks than employed males.
- Middle income earner females are 150% more vulnerable to economic shocks than same income class males.
- Extent of vulnerability of females is lower in KPK as compared to rest of the Pakistan.
- Employers are highly vulnerable to economic growth shocks.
- High income earner female employers are less vulnerable to economic shocks than males of the same category

Results

Vulnerability of groups by Age and Education

- Young and old are more vulnerable as compared to middle age earners.
- New entrants and about to retire paid workers are more vulnerable to the economic shocks.
- The females in twenties and fifties are comparatively more vulnerable
- Extent of vulnerability is highest for individuals with graduate level education and lowest for secondary and matriculate level educated workers
- Males with intermediate level education are found to be more vulnerable than females

Results

Vulnerability over time

- Vulnerability is highest during 2006-07 that reduces in 2008-09 by almost 60% and then witness an increase of 80% in 2012-13 and then witness a slight decline of 10% in 2014-15.
- It is increasing for near senior citizens
- The vulnerability of the highly educated workers become more over time whereas the same decreases in case of secondary and matriculation qualified workers.

Results

Asymmetries - Benefited less in recovery and lose more in recessions

- Overall
 - Baluchistan
 - Employer
 - Graduate Workers
- Females
 - All female earners except KPK
 - Employment status: Employer and Self Employed in non agriculture Sector
 - Education: intermediate and graduate level

Results

Panel GMM Results

- Coefficients of employed labour force, food inflation and non food inflation are higher in case of females. The coefficient of economic activity of female is 64% higher than male
- Impact of economic activity is higher in Punjab and Baluchistan.
- Female workers residing in Sindh are more sensitive to the economic fluctuations.
- Employment status wise regressions results confirm that the employers are more sensitive to the economic shocks.
- Self employed females in agriculture sector are less sensitive to economic shocks.
- The sensitivity of real earnings with employment opportunities increases with the level of education.
- Impact of food inflation on the real earnings increases with education but reverse relationship is observed in case of nonfood inflation.

Conclusion and Policy Implications

- Both the methods confirm that the vulnerable groups in Pakistan are Female, Graduate, Baluchistan, Employer
- Require serious efforts for financial innovations in the social transfer system.
- Innovative support program that target the vulnerable population during the downturns will not only reduce the welfare losses to the vulnerable segment of the society but also helps the economy to come out of recession due to relatively higher consumption by the same group.
- Benazir Income Support Programme provides a better platform to address the issue of vulnerability.

Percentage Difference of Vulnerability Index (Females Vs Males)

Earners Groups	Lower Income	Lower Middle Income	Middle Income	Upper Middle Income	Higher Income	Overall
Pakistan	40	52	151	20	90	63.3
Punjab	48	99	161	170	114	111.1
Sindh	124	231	252	72	123	134.4
KPK	171	21	64	101	41	70.7
Baluchistan	428	299	222	115	69	224.1
Employer	160	44	44	-11	-16	20.2
Self Employed NA	86	144	135	-10	51	76.9
Paid Employee	-7	67	59	45	79	48.7
Self Employed agri	198	-29	15	68	63	35.2
Age 10-19	141	-17	19	-7	43	38.7
Age 20-29	67	27	144	114	53	74.8
Age 30-39	64	8	-13	106	89	54.1
Age 40-49	3	-26	16	60	147	42.2
Age 50-59	110	14	17	45	177	71.5
Age 60 +	3	9	41	71	24	25.1
Illiterate	88	88	21	-33	-50	24.7
Primary	89	148	140	85	186	116.7
Secondary	214	173	82	-10	168	132.1
Metric	39	63	479	36	88	99.8
Intermediate	4	-22	58	-37	-58	-12
Graduate	42	23	52	28	6	30
Professional	94	54	-8	30	41	38.6