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Indonesia Development Forum 2017

## **Fighting Inequality for Better Growth**

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# Two Decades of Structural Transformation and Dynamics of Income Inequality in Indonesia

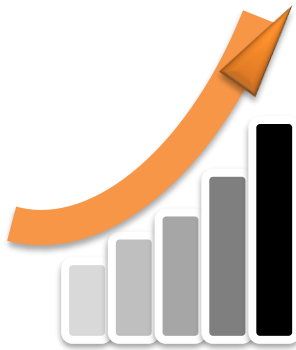
# Two Decades of Structural Transformation and Dynamics of Income Inequality in Indonesia

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In the past three decades, *along the structural transformation*, the socio-economic conditions in Indonesia has been improving rapidly...



...with GDP per capita increases almost 4-fold between 1980 – 2015...

...and massive decrease in the absolute poverty incidence more than half, in headcount ratios...



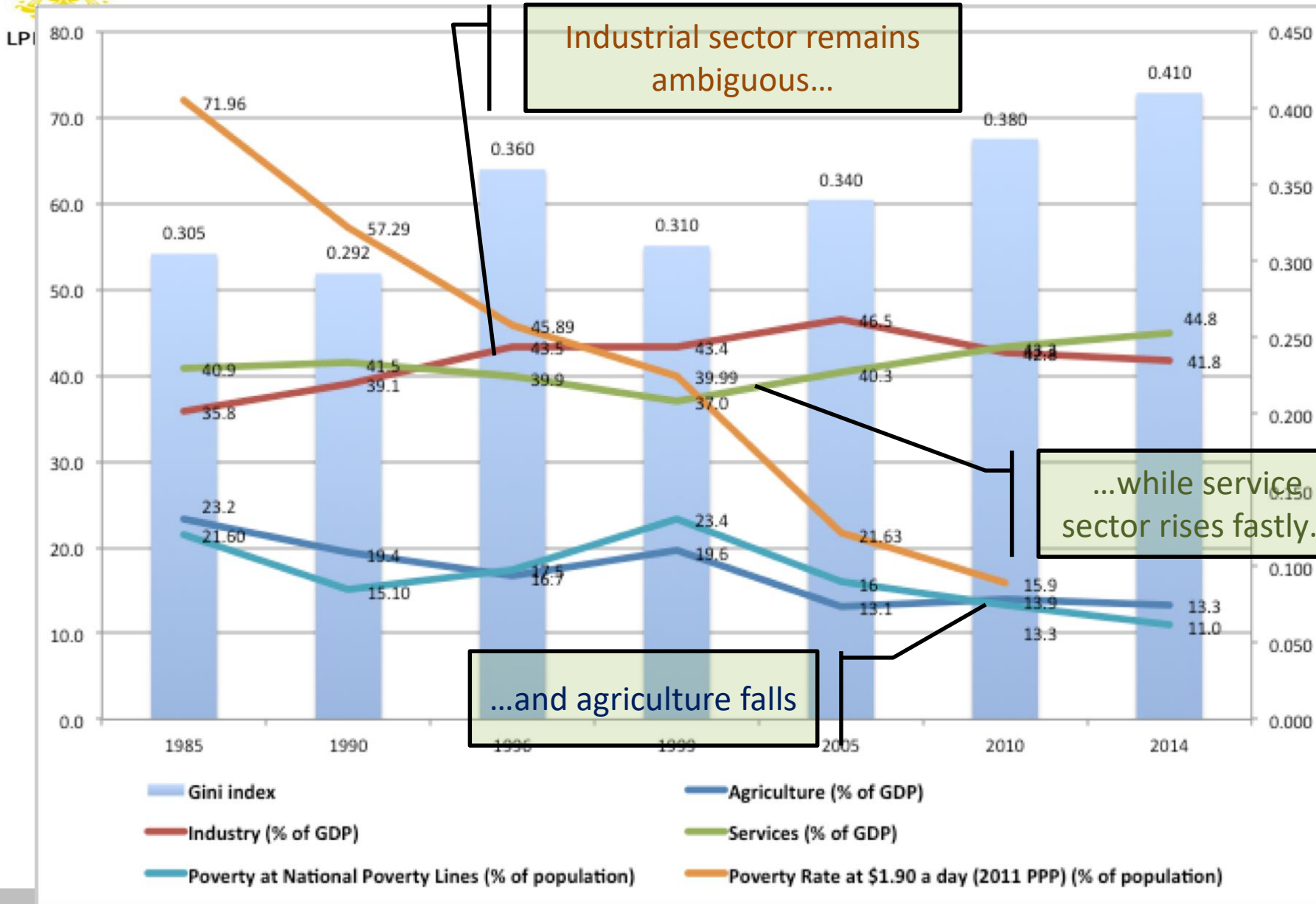
**...BUT...**



...these growth is not inclusive, as the *inequality has been increasing* and steady, ever since.



# Trend of Structural Transformation, Poverty and Inequality during 1985-2014



Latest Data 2016Q2 (BPS, 2016)

% of Agriculture = 14.32%

% of Industry = 38.90%

% of Services = 46.78%

Poverty Index = 10.86%

Gini Index = 0.396

# Static Decomposition

Partition	Year			Change	
	1996	2005	2014	1996-2005	2005-2014
<b>Sector of Occupation</b>					
Within Group (lw)	0.207	0.219	0.241	0.013	0.022
Between Group (lb)	0.046	0.024	0.031	-0.022	0.007
Theil Index (IO)	0.253	0.243	0.272	-0.010	0.029
Ratio (lb/IO) in %	18.29	9.84	11.39	-8.45	1.55
<b>Employment Status</b>					
Within Group (lw)	0.233	0.221	0.252	-0.011	0.031
Between Group (lb)	0.020	0.022	0.020	0.002	-0.002
Theil Index (IO)	0.253	0.243	0.272	-0.010	0.029
Ratio (lb/IO) in %	7.97	9.01	7.32	1.04	-1.69
<b>Location</b>					
Within Group (lw)	0.191	0.190	0.235	-0.001	0.045
Between Group (lb)	0.061	0.053	0.037	-0.008	-0.016
Theil Index (IO)	0.253	0.243	0.272	-0.010	0.029
Ratio (lb/IO) in %	24.24	21.88	13.60	-2.36	-8.28
<b>Education Attainment</b>					
Within Group (lw)	0.198	0.176	0.246	-0.022	0.071
Between Group (lb)	0.055	0.067	0.025	0.013	-0.042
Theil Index (IO)	0.253	0.243	0.272	-0.010	0.029
Ratio (lb/IO) in %	21.63	27.71	9.37	6.09	-18.35
<b>Household Member</b>					
Within Group (lw)	0.229	0.224	0.253	-0.004	0.029
Between Group (lb)	0.024	0.019	0.019	-0.005	0.000
Theil Index (IO)	0.253	0.243	0.272	-0.010	0.029
Ratio (lb/IO) in %	9.56	7.76	6.86	-1.80	-0.90

- Pure inequality effect (unexplained) dominated the explanation of growing inequality in Indonesia;
- During 1996-2014, increasing income of those working in agriculture, and informal sector, and living in rural area has contributed to curb inequality in Indonesia, but its impacts has been cancelled out by other components.

Partition	Pure Inequality	Allocation effect on within group component	Allocation Effect on between group component	Income Effect	Pure Inequality	Allocation effect on within group component	Allocation Effect on between group component	Income Effect	Pure Inequality	Allocation effect on within group component	Allocation Effect on between group component	Income Effect
	Period of 1996-2014 ( $\Delta$ Theil = 0.019)				Period of 1996-2005 ( $\Delta$ Theil = -0.009)				Period of 2005-2014 ( $\Delta$ Theil = 0.029)			
<b>Sectoral Occupation (Total)</b>	0.020	0.017	-0.005	-0.010	0.024	-0.010	-0.001	-0.021	0.001	0.021	-0.003	0.009
Agriculture	0.017	-0.019	-0.138	-0.314	0.033	0.013	0.087	-0.200	-0.010	-0.039	-0.223	-0.100
Industry	-0.003	0.008	0.029	0.032	-0.007	0.015	0.060	0.048	0.004	-0.007	-0.030	0.018
Service	0.005	0.028	0.104	0.272	-0.002	-0.038	-0.148	0.131	0.007	0.066	0.250	0.091
<b>Location (Total)</b>	0.022	0.022	0.004	-0.026	-0.013	0.013	0.003	-0.011	0.037	0.008	0.000	-0.016
Rural	0.019	-0.025	-0.167	-0.389	-0.001	-0.013	-0.099	-0.234	0.018	-0.010	-0.068	-0.168
Urban	0.003	0.047	0.171	0.363	-0.013	0.026	0.102	0.223	0.019	0.018	0.068	0.152
<b>Employment Status (Total)</b>	0.022	-0.001	0.000	0.000	-0.006	-0.004	-0.001	0.003	0.029	0.002	0.001	-0.003
Informal	0.027	0.002	0.009	-0.251	0.001	0.009	0.045	-0.144	0.027	-0.008	-0.036	-0.111
Formal	-0.005	-0.003	-0.009	0.251	-0.006	-0.013	-0.046	0.147	0.002	0.010	0.037	0.108
<b>Education Attainment (Total)</b>	0.037	0.013	0.023	-0.046	-0.029	0.008	0.008	0.005	0.060	0.011	0.021	-0.055
Not Completed	0.041	-0.010	-0.050	-0.153	-0.005	-0.014	-0.102	-0.136	0.040	0.010	0.050	-0.062
Compulsory (SD-SMP)	-0.007	0.006	0.029	-0.135	-0.020	0.007	0.040	-0.066	0.014	-0.002	-0.012	-0.088
Secondary (SMA)	-0.002	-0.017	-0.080	0.109	-0.004	0.009	0.044	0.106	0.000	-0.026	-0.121	0.045
Tertiary (University)	0.005	0.035	0.124	0.132	0.000	0.006	0.027	0.100	0.006	0.029	0.103	0.049
<b>Household Size (Total)</b>	0.024	0.003	0.001	-0.006	-0.004	0.002	0.001	-0.006	0.029	0.000	0.000	0.000
<=2 HH Member	-0.004	0.015	0.054	0.192	-0.007	0.011	0.041	0.105	0.003	0.003	0.013	0.084
>2-<=5 HH Member	0.018	0.012	0.053	-0.087	-0.003	0.008	0.038	-0.045	0.022	0.003	0.014	-0.045
> 5 HH Member	0.010	-0.024	-0.106	-0.112	0.006	-0.017	-0.078	-0.067	0.004	-0.007	-0.027	-0.039



## Structural Transformation and Income Inequality: Fixed Effect Estimations

Dependent Variable	Inequality											
	Agriculture-Industry transition						Agriculture-Service transition					
	(1)		(2)		(3)		(4)		(5)		(6)	
Independent Variables												
Agriculture share in GDP	-1.627 ***		-0.784 **		-0.789 *		-1.436 ***		-0.603 **		-0.408	
	<b>0.196</b>		<b>0.339</b>		<b>0.397</b>		<b>0.178</b>		<b>0.238</b>		<b>0.331</b>	
Industrial share in GDP							-0.571 ***		-0.181		-0.139	
							<b>0.082</b>		<b>0.117</b>		<b>0.155</b>	
Service share in GDP	0.689 ***		0.291		0.389 *							
	<b>0.100</b>		<b>0.188</b>		<b>0.221</b>							
Economic growth			0.069 *		0.086 *				0.069 *		0.063 *	
			<b>0.036</b>		<b>0.043</b>				<b>0.037</b>		<b>0.036</b>	
<b>Socio-demographic factors</b>												
Poverty rate			-0.006 ***		-0.002				-0.006 ***		-0.004	
			<b>0.001</b>		<b>0.003</b>				<b>0.001</b>		<b>0.002</b>	
Senior high school net enrollment					0.001						0.001 *	
					<b>0.000</b>						<b>0.000</b>	
Log of foreign direct investment					0.004 **						0.005 ***	
					<b>0.002</b>						<b>0.002</b>	
<b>Government factors</b>												
Infrastructure share in expense					-0.077 **						-0.073 **	
					<b>0.033</b>						<b>0.033</b>	
Human capital share in expense					0.078						0.095	
					<b>0.092</b>						<b>0.109</b>	
Intercept	0.309 ***		0.442 ***		0.261 **		0.873 ***		0.648 ***		0.471 ***	
	<b>0.039</b>		<b>0.069</b>		<b>0.103</b>		<b>0.064</b>		<b>0.077</b>		<b>0.119</b>	
R-square (within)	0.513		0.567		0.502		0.495		0.559		0.481	
F-stat (Wald-chi)	36.64 ***		40.13 ***		22.45 ***		34.17 ***		51.01 ***		25.08 ***	
No. obs	288		288		171		288		288		171	



# Concluding remarks

- The Inverted-U Kuznet curve exists in Indonesia;
- The root of increasing inequality in Indonesia is still “mysterious” since pure inequality effect (unexplained effect) is dominated the explanation of increasing inequality;
- The static decomposition also confirmed the similar one that Between Group inequality could only explain less than 25% of inequality;
- Population shifts from agriculture sector to either industry to service sector, from rural to urban and from informal to formal is the second contributor to increase inequality during the last two decades;
- The contribution is cancelled out, the growing income of those working in agriculture sector, in informal sector, those living in rural area and those without formal education and with compulsory education has curbed inequality increasing;
- Our econometric estimations could provide evidence that support the idea of structural transformation lead inequality increasing in Indonesia.