

# The Incidence of Fiscal Policy in Ghana

presentation at  
Alisa Hotel  
Accra

October 29, 2015

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This project has been made possible thanks to the generous support of the  
Bill & Melinda Gates Foundation



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# Introduction

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- What is an incidence analysis?
  - Who pays taxes, and who benefits from government spending?
  - Defined by population sub-groups, usually income-based
- Can do this for very specific budget items
  - e.g. LEAP or tobacco excises
- Or the entire budget (more or <much> less)
  - Problem of public goods
  - Problem of survey information
- CEQ tries to do the latter, and provides useful information on the former, too.



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# Introduction

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- Three big questions:
  - How much redistribution and poverty reduction is being accomplished through social spending, subsidies and taxes?
  - How progressive are revenue collection, subsidies, and government social spending? and
  - Within the limits of fiscal prudence, what could be done to increase redistribution and poverty reduction through changes in taxation and spending?
- *A caution on equity and efficiency*



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# Methods

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- Data to describe the distribution of income come from GLSS-6, 2012/13
- The CEQ income concepts (figure next slide)
- Note: we are not using the welfare variable that GSS uses in poverty analysis
- For each CEQ income concept, we calculate Gini coefficients and FGT poverty measures
- For each social expenditure and tax, we calculate concentration coefficients



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# CEQ Income Concepts



# What's Included in the Study?

Taxes	Expenditures
<i>Direct Taxes</i>	<i>Direct Transfers</i>
PAYE	LEAP (simulated)
Presumptive taxes (informal)	School feeding program
Presumptive taxes (formal)	Pensions*
<i>Indirect Taxes</i>	<i>Indirect Transfers</i>
VAT	Electricity subsidies
Import duties	Fertilizer subsidies
Cocoa duties	Kerosene cross-subsidy
Excises	
Petroleum products	<i>In-Kind Benefits</i>
Beverages	Public schooling (various levels)
Tobacco products	Public health services, inpatient
Communications services	Public health services, outpatient



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# First Main Result

How much redistribution and poverty reduction is being accomplished through social spending, subsidies and taxes?

Income Concept	poverty line: Gini	GH¢1314 per year		GH¢792 per year	US\$1.25 per day at PPP	US\$2.50 per day at PPP	US\$4.00 per day at PPP
		Headcount index	Poverty Gap	Headcount index	Headcount index	Headcount index	Headcount index
Market Income + Pensions	0.437	0.240	0.077	0.083	0.042	0.197	0.407
Market Income	0.438	0.243	0.080	0.086	0.044	0.200	0.412
Gross Income	0.436	0.238	0.076	0.081	0.039	0.195	0.405
Net Market Income	0.425	0.244	0.079	0.086	0.043	0.202	0.417
Disposable Income	0.424	0.242	0.078	0.084	0.040	0.200	0.415
Disp. Income + Indirec Subsidies	0.424	0.234	0.074	0.079	0.038	0.191	0.402
Disp. Income - Indirect Taxes	0.423	0.272	0.089	0.100	0.047	0.225	0.454
Consumable Income	0.423	0.261	0.085	0.093	0.045	0.217	0.440
Cons. Income + In-Kind Education	0.409	0.201	0.057	0.053	0.220	0.163	0.394
Final Income	0.402	0.185	0.050	0.046	0.019	0.144	0.363



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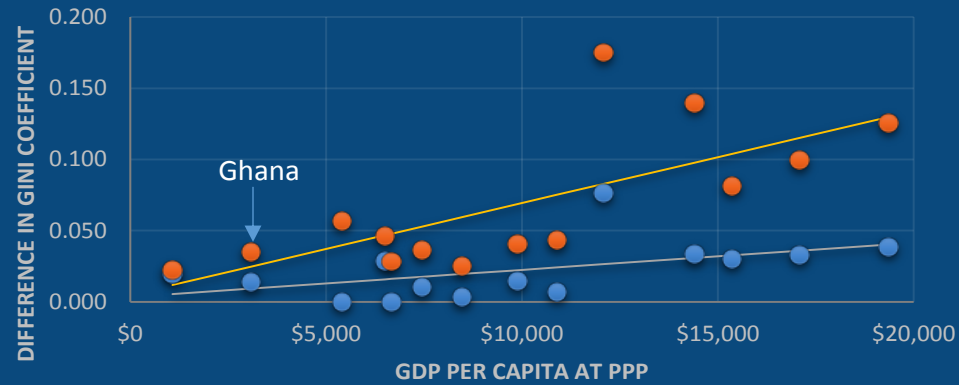
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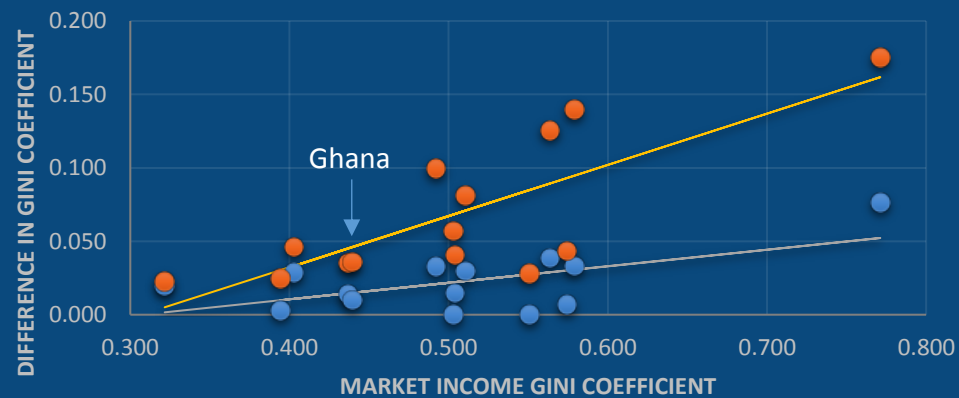
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# CEQ Income Concepts



- Difference in Gini Coefficients, Market Income minus Consumable Income
- Difference in Gini Coefficients, Market Income minus Final Income
- Regression line
- Regression line



- Difference in Gini Coefficients, Market Income minus Consumable Income
- Difference in Gini Coefficients, Market Income minus Final Income
- Regression line
- Regression line



# First Main Result

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- Social expenditures and taxes in Ghana do relatively little to redistribute income and reduce poverty
- What (positive) impact there is comes almost entirely from in-kind benefits of public schooling and, to a lesser extent, health services
- Direct taxes lower inequality a bit and have only a small effect on poverty
- Indirect taxes do not change inequality but increase poverty quite a bit



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# Why So Little Redistribution?

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- Given other countries' experience, this is typical
  - Ghana has relatively low GDP per capita
  - Ghana has relatively low initial inequality
- Intuitively, for a tax or expenditure to have a big effect on the distribution of income, it must be:
  - well-targeted, and
  - large compared to incomes
- So let's dig into those two characteristics



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# How We Measure Inequality and “Targeting”

- Gini coefficient
  - Values from zero (perfect equality) to one (perfect inequality)
  - Practical ranges from about 0.25 (Slovenia, Scandinavia) to 0.70 (South Africa, Namibia, Brazil)
- Concentration coefficient
  - Values from negative one (completely concentrated in the poorest) to one (completely concentrated in the richest)
  - Practical ranges depend on the thing we are measuring



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# Standards for “Good” Concentration Coefficients

- For taxes, they should be greater than the Gini coefficient to be “progressive”
- For expenditures meant to redistribute, they should be (strongly) negative
  - This is true even though an expenditure that has a positive c.c. that is less than the Gini will be equalizing
- For expenditures meant to be universal, they should be close to zero

# Concentration Coefficients

Taxes	Concentration Coefficient	Expenditures	Concentration Coefficient
<i>Direct Taxes</i>		<i>Direct Transfers</i>	
PAYE	0.73	LEAP (simulated)	-0.29
Presumptive taxes (formal)	0.80	School feeding program	-0.40
Presumptive taxes (informal)	0.66	<i>Indirect Transfers</i>	
<i>Indirect Taxes</i>		Electricity subsidies	0.47
VAT	0.44	Fertilizer subsidies	-0.03
Import duties	0.41	Kerosene cross-subsidy	0.13
Cocoa duties	0.13	<i>In-Kind Benefits</i>	
Excises		Public schooling	
Gasoline	0.51	Pre-primary	-0.34
Diesel	0.48	Primary	-0.27
Communications services	0.49	Junior High School	-0.12
Bottled water	0.80	Senior High School	0.13
Soft drinks	0.62	Vocational training	0.39
Malta	0.62	Teacher training	0.36
Beer	0.61	Nursing school	0.46
Wine	0.61	Polytechnic	0.42
Spirits	0.43	University	0.69
Akpeteshie	0.13	Public health care	
Cigarettes/cigars	0.05	Out-patient	0.04
Other tobacco products	-0.17	In-patient	0.05
<i>Gini Coefficient for Market Income</i>	<i>0.44</i>	<i>Gini Coefficient for Market Income</i>	<i>0.44</i>

# Second Main Result

- Expenditures
  - Education is very progressive at lower levels, not at tertiary level
    - Vocational training is perhaps surprising
  - Health is evenly spread across the income distribution
  - Electricity subsidy is regressive; fertilizer subsidy is evenly distributed; kerosene a little less so
  - Cash and quasi-cash transfers are very progressive
    - School feeding is the item best-targeted to the poor
    - LEAP is very progressive, but less so than in other countries.
    - LEAP may be improved since 2012/13.



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# Second Main Result

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- Taxes
  - Direct taxes (PAYE and taxes paid by business owners, *including informal*) are highly progressive
  - The general indirect taxes, VAT and import duties, are neutral
  - Petroleum duties, including indirect effects, are progressive
  - Tobacco and cocoa duties are quite regressive
  - The beverage excises are progressive, except for akpeteshie
  - Communications services excise is progressive



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# Taxes in Ghana

	amount (millions)	Comparable GLSS-6 Estimate	Share of total Government Revenue	Share of GDP	Included in CEQ analysis?
<i>Total Revenue</i>	19,472			20.83%	
<i>Taxes</i>	14,467		74.3%	15.48%	
<i>Direct Taxes</i>	6,302		32.4%	6.74%	
Personal Income Tax	2,549	2,635	13.1%	2.73%	yes
Corporate Income Tax	2,734		14.0%	2.93%	no
Other Direct Taxes	1,018		5.2%	1.09%	no
<i>Indirect Taxes</i>	7,312		37.5%	7.82%	
VAT	3,317	1,891	17.0%	3.55%	yes
NHIL	648	630	3.3%	0.69%	yes
Import Duties (less exemptions)	2,231	1,059	11.5%	2.39%	yes
Cocoa Export Duties	100	39	0.5%	0.11%	yes
<i>Excises</i>	868		4.5%	0.93%	
petroleum excises	525	593	2.7%	0.56%	yes
communications services tax	174	119	0.9%	0.19%	yes
other excises	169	124	0.9%	0.18%	yes
Other Indirect Taxes	148		0.8%	0.16%	no
<i>Other Taxes</i>	1,368		7.0%	1.46%	
of which SSNIT Contributions	1,048	1,953	5.4%	1.12%	yes
non-pension SSNIT contributions (NHIL)	159		0.8%	0.17%	yes
<i>Non-Tax Revenues</i>	5,005		25.7%	5.35%	
Internally Generated Funds	2,516		12.9%	2.69%	yes
Other Non-Tax Revenues	2,489		12.8%	2.66%	no
NOTE: Share of Government Revenue Included in Analysis:			69.0%		
NOTE: Share of GDP Included in Analysis:				14.4%	



# Expenditures in Ghana

	amount (millions)	Comparable GLSS-6 Estimate	Share of total Government Spending	Share of GDP	Included in CEQ analysis?
Total Government Spending, including SSNIT pensions	26,729			28.60%	
Primary Government Spending	22,332		83.5%		
Social Spending	6,906				
<i>Direct Transfers /1</i>	70		0.3%	0.07%	
LEAP	18	1	0.1%	0.02%	yes
School Feeding Program /2	52	61	0.2%	0.06%	yes
<i>Total In-kind Transfers</i>	6,893		25.8%	7.38%	
<i>Education /3</i>	5,282		19.8%	5.65%	
Pre-school	147	122	0.6%	0.16%	yes
Primary	1,243	1,270	4.6%	1.33%	yes
Junior High School	532	534			
Senior High School	546	629	2.0%	0.58%	yes
Vocational	34	45	0.1%	0.04%	
Teacher Training	96	104	0.4%	0.10%	
Nursing School	319	196	1.2%	0.34%	
Polytechnic	121	128	0.5%	0.13%	
University	520	1,261	1.9%	0.56%	yes
Other Education Spending	1,724		6.5%	1.84%	no
<i>Health</i>	1,555	1,916	5.8%	1.66%	
Contributory /4	159		0.6%	0.17%	yes
Noncontributory	1,396		5.2%	1.49%	yes
In-patient services	??	625			yes
Out-patient services	??	1,291			yes
Housing and Urban	56		0.2%	0.06%	no
<i>Contributory Pensions</i>	1,234		4.6%	1.32%	
SSNIT pensions /5	443	201	1.7%	0.47%	yes
Other pensions, gratuities, and end-of-service benefits	791	264	3.0%	0.85%	yes
Non-Social Spending					
<i>Indirect Subsidies</i>	1,231		4.6%	1.32%	yes
On Final Goods (electricity lifeline tariffs)	1		0.0%	0.00%	yes
On Inputs (electricity and petroleum products)	1,158	1,268	4.3%	1.24%	yes
On fertilizer	72	122			yes
<i>Other Primary Spending</i>	11,692		43.7%	12.51%	no
Debt Servicing	5,609		21.0%	6.00%	no
Interest payments	4,397		16.5%	4.70%	no
Amortization payments	1,212		4.5%	1.30%	no
NOTE: Share of Government Spending Included in Analysis:			34.4%		
NOTE: Share of GDP Included in Analysis:				9.8%	



# A Note on Coverage

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- “Coverage” measures the share of the target population that a particular expenditure actually reaches or benefits
- This is a way to measure targeting of an expenditure
  - Errors of exclusion
  - Errors of inclusion
- Different for each expenditure
- Not the same concept as “incidence”



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# Coverage of Social Spending

	y < US\$1.25	US\$1.25 < y < US\$2.50	US\$2.50 < y < US\$4.00	US\$4.00 < y < US\$10.00	US\$10.00 < y
Pre-school, public	0.547	0.555	0.478	0.345	0.213
Pre-school	0.600	0.703	0.819	0.895	0.951
Primary, public	0.661	0.659	0.620	0.484	0.333
Primary	0.692	0.764	0.831	0.871	0.906
Junior high school, public	0.347	0.400	0.414	0.385	0.338
Junior high school	0.355	0.456	0.519	0.600	0.725
Senior high school, public	0.114	0.227	0.245	0.348	0.508
Senior high school	0.123	0.246	0.287	0.437	0.609
School feeding	0.180	0.094	0.080	0.043	0.026
Outpatient, public	0.065	0.081	0.108	0.113	0.129
Outpatient	0.036	0.043	0.058	0.052	0.046
Inpatient	0.004	0.005	0.007	0.007	0.006
LEAP	0.003	0.001	0.001	0.001	0.001
Social security	0.000	0.004	0.022	0.038	0.079
Pension	0.003	0.001	0.011	0.031	0.059
Retirement benefit	0.005	0.003	0.007	0.008	0.021
Electric mains	0.182	0.462	0.616	0.786	0.914
Piped water or borehole	0.606	0.590	0.573	0.508	0.311
Memo: population share	0.060	0.200	0.230	0.370	0.130

# Results – Coverage

- Education coverage
  - NOTE: these are not GERs or NERs
  - Coverage is good at lower levels – pre-primary is excellent – but drops off at higher levels
  - Note the heavy use of private schools in the upper quintiles
- Health coverage
  - More difficult to judge, but seems good for outpatient services
- Old-age pensions coverage
  - Very limited, even among the highest quintile
- LEAP is tiny; school feeding, much better
- Note the equity of safe water provision



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# Poverty Status Transitions

## Consumable Income groups

Market Income groups	Consumable Income groups					Percent of Population	Ave. Mkt. Income (cedis per year)
	$y < \$1.25$	$\$1.25 \leq y < \$2.50$	$\$2.50 \leq y < \$4.00$	$\$4.00 \leq y < \$10.00$	$\$10.00 \leq y < \$50.00$		
$y < \$1.25$	98%	2%	0%	0%	0%	6%	369
$\$1.25 \leq y < \$2.50$	4%	95%	1%	0%	0%	20%	786
$\$2.50 \leq y < \$4.00$	0%	11%	89%	1%	0%	23%	1321
$\$4.00 \leq y < \$10.00$	0%	0%	9%	91%	0%	37%	2524
$\$10.00 \leq y < \$50.00$	0%	0%	0%	16%	84%	13%	6564

## Final Income groups

$y < \$1.25$	47%	50%	3%	0%	0%	6%	369
$\$1.25 \leq y < \$2.50$	1%	68%	29%	2%	0%	20%	786
$\$2.50 \leq y < \$4.00$	0%	3%	76%	21%	0%	23%	1321
$\$4.00 \leq y < \$10.00$	0%	0%	3%	93%	4%	37%	2524
$\$10.00 \leq y < \$50.00$	0%	0%	0%	11%	89%	13%	6564



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# Conclusions

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- Ghana does relatively little with taxes and expenditures to change the income distribution
  - This is typical for poorer, relatively equal countries
  - In part because both the taxes and the expenditures we can analyze are small compared to GDP
  - In part because there are only a few, small, programs aimed at transferring resources directly to the poor
- Largest impact by far is in education and, to a lesser extent, health services



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# Conclusions

- Ghana does have some well-targeted taxes
  - PAYE
  - Presumptive taxes on small businesses
  - Petroleum duties (except kerosene)
  - Many excises (beer, wine, soft drinks, bottled water, communications services)
- But also some poorly-targeted ones
  - Cocoa duties
  - Tobacco
  - Akpeteshie
- And the neutral ones you would expect
  - VAT
  - Import duties



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# Conclusions

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- Ghana also has well-targeted expenditures
  - Public pre-primary, primary, and junior high schools
  - School feeding program
  - LEAP (with a caveat)
- And some poorly targeted ones
  - Electricity subsidies
  - Tertiary education



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# Conclusions

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- Third big question:
  - Within the limits of fiscal prudence, what could be done to increase redistribution and poverty reduction through changes in taxation and spending?
- First, let's appreciate the importance of that first clause in today's fiscal environment
- And let's remember my caution from the introduction
  - This is about equity
  - But efficiency matters, too



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# Conclusions

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- There are some attractive options from an equity perspective
  - eliminate electricity subsidies
  - eliminate cocoa duties
  - increase some progressive excises
  - make sure school lunches are funded properly
  - Expand coverage and improve the quality of public education through JHS (and, perhaps, SHS)



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# Conclusions

- For new donors and governments:
- Before conceiving a new project or program take note of the following:
  - Large start-up costs
  - “Orphans” already existing programs
  - New programs are small, and small programs often suffer “elite capture”
- Better to expand existing programs that are well-targeted (primary schooling, school meals, LEAP) than start new ones
- Lacking that, consider whether existing programs can be targeted better, and how



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# Conclusions

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- There are some options that merit further study:
  - What are the efficiency consequences of increased PAYE and/or presumptive taxation of small businesses?
  - What are the efficiency consequences of reduced subsidies to higher education, especially universities?



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# Thank You



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