

# The Redistributive Effects of Healthcare Financing in Nigeria<sup>1</sup>

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## Introduction

The deregulation of healthcare financing and supply in Nigeria has shifted the healthcare system towards the competitive market ideals. Households' decision to utilize healthcare is identical with healthcare financing. This financing arrangement has potentials for income redistribution in a society with already high levels of inequalities in resource redistribution.

# Objectives of the study

*This study attempts to achieve three main purposes: (a) to examine the extent this system of healthcare financing leads to catastrophic expenditures by households (b) to analyze the extent of impoverishment arising from healthcare spending. (c) It also uses the Aronson, Johnson, and Lambert (1994) decomposition framework to analyze redistributive effects in terms of vertical and horizontal inequities as well as reranking effect.*

# Healthcare Financing in Nigeria

Healthcare financing is characterized by:

- ✚ Declining budgetary provisions since 1980
- ✚ Proportion of total budget taken by health is, on average, less than 3%
- ✚ Government expenditure per capita is \$2
- ✚ Household health per capita expenditure \$13
- ✚ Total health expenditure per capita expenditure is far less than \$34 average for the low income countries (LIC)

- ✚ High user charges in public health facilities
- ✚ Healthcare market dominated by numerous supplies: One-flat clinics, drug stores, maternities, street drug vendors etc. all dominated by the profit motive
- ✚ Market determined prices in the private health sector (in many cases money deposit must be made before treatment, treatment stops when deposit is exhausted)

# Methods

For the analysis of the incidence of catastrophic and impoverishing effects of healthcare financing we use modified versions of the FGT class of poverty indices.

- Catastrophic threshold is defined as that percentage of a household's income above which a given health expenditure is considered to be inimical to the survival of the household.

- **Experience from household surveys show that on average, households spend between 3-5% of total income on health (Russell, 1996)**
- **Gertler and van der Gaag (1990) suggest that, typically, the price elasticity of demand for healthcare services exceeds unity at prices higher than 5% of nonfood expenditure implying that at this level financing healthcare would become a heavy burden for a typical household.**

- This study used several thresholds to analyze catastrophic health spending
- It also pro-poor weighting scheme to reflect the fact that the social decision maker might be averse to catastrophic spending among the poor.
- The impoverishing effects are estimated using the FGT class of indices

We use the Aronson, Johnson, and Lambert (1994) decomposition framework:

$$RE = \frac{g}{E} \frac{\ddot{K}}{V} - \frac{a}{E} \frac{G}{H} - \left( \frac{G}{E} \frac{C}{R} \right)$$

Where: RE= Total redistributive effect,  
 V=vertical inequity, H=horizontal inequity,  
 R= reranking effect

# Data

- ✚ The data for the study was obtained from a household sample survey of Enugu State (S.E. Nigeria). Survey was conducted in 2004, using standard multi-stage sampling design
- ✚ A total of 1500 households (5814 individuals) were sampled, 3 households with conflicting information were dropped from final list of households

**Table 1 Distribution of Gross and Health Expenditures by Quintiles**

<b>Quintile</b>	<b>Variable</b>	<b>No. obs.</b>	<b>Mean Inc</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
<b>1</b>	<b>Gross exp</b>	<b>300</b>	<b>741.75</b>	<b>233.86</b>	<b>133.87</b>	<b>1137.5</b>
	<b>H. Exp</b>	<b>300</b>	<b>52.89</b>	<b>91.51</b>	<b>0</b>	<b>700.29</b>
<b>2</b>	<b>Gross exp</b>	<b>299</b>	<b>1547.88</b>	<b>240.73</b>	<b>1138.91</b>	<b>1980.39</b>
	<b>H. Exp</b>	<b>299</b>	<b>104.70</b>	<b>215.10</b>	<b>0</b>	<b>1715.17</b>
<b>3</b>	<b>Gross exp</b>	<b>300</b>	<b>2496.01</b>	<b>323.40</b>	<b>1988.28</b>	<b>3071.96</b>
	<b>H. Exp</b>	<b>300</b>	<b>152.01</b>	<b>320.09</b>	<b>0</b>	<b>1798.42</b>
<b>4</b>	<b>Gross exp</b>	<b>299</b>	<b>3861.11</b>	<b>483.76</b>	<b>3081.03</b>	<b>4820.00</b>
	<b>H. Exp</b>	<b>299</b>	<b>210.24</b>	<b>505.35</b>	<b>0</b>	<b>2811.00</b>
<b>5</b>	<b>Gross Exp</b>	<b>299</b>	<b>9299.82</b>	<b>6432.82</b>	<b>4852.67</b>	<b>60516.10</b>
	<b>H. Exp</b>	<b>299</b>	<b>1065.43</b>	<b>2882.82</b>	<b>0</b>	<b>30371.00</b>

**Fig. 1 Evidence of catastrophic, impoverishing & re-ranking effects**

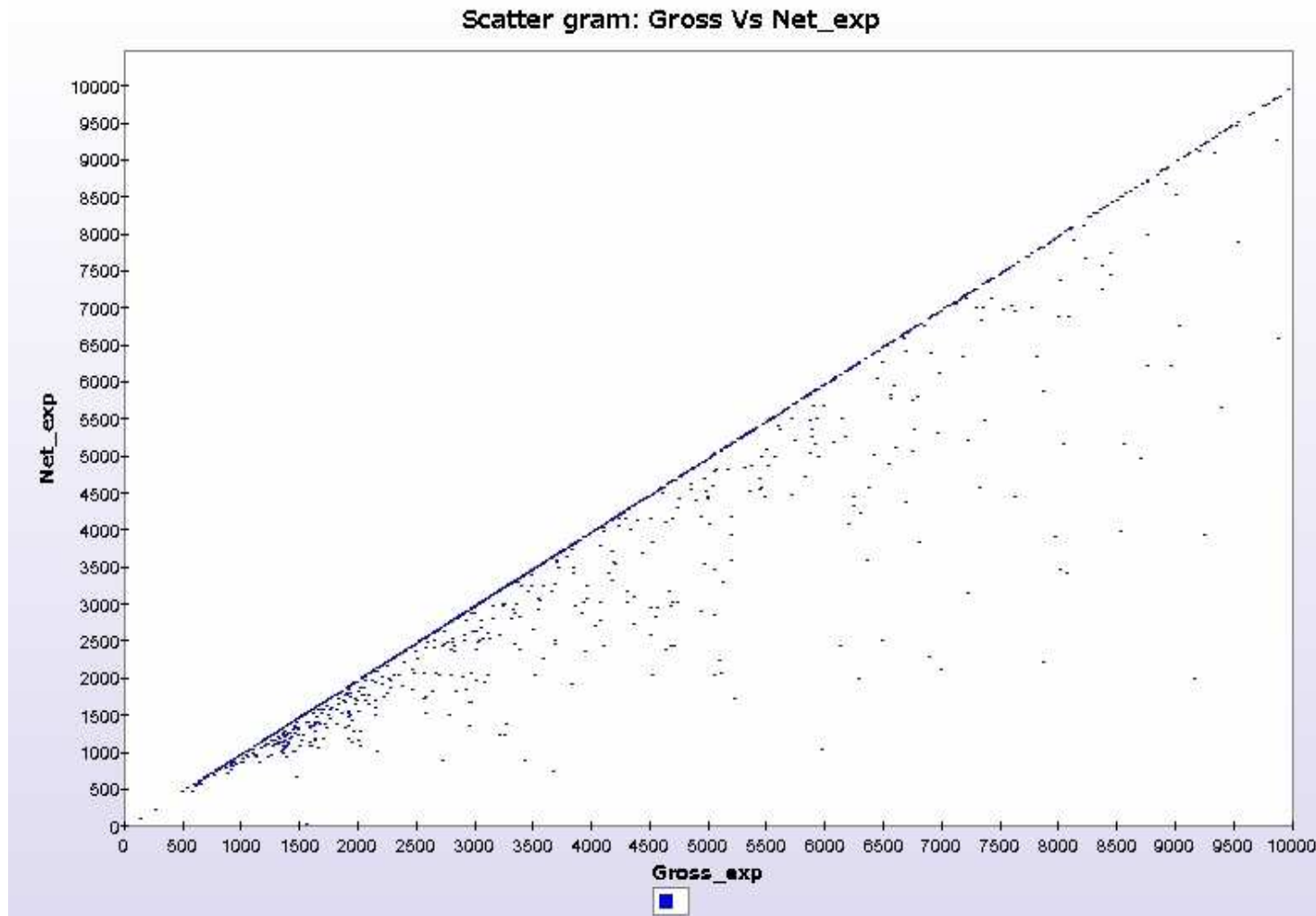


Table 2 Incidence and Intensity of Catastrophic Payments

<b>Index</b>	<b>Est. Value (%)</b>	<b>Index</b>	<b>Est. Value (%)</b>	<b>Index</b>	<b>Est. Value (%)</b>
<b>Hcat. 5%</b>	<b>29.15</b>	<b>Hcat 5, v=2</b>	<b>31.50</b>	<b>Hcat 10, v=2</b>	<b>22.16</b>
<b>Gcat. 5%</b>	<b>5.67</b>	<b>Hcat 5, v=3</b>	<b>33.15</b>	<b>Hcat 10, v=3</b>	<b>22.45</b>
<b>Hcat. 10%</b>	<b>21.75</b>	<b>Hcat 5, v=5</b>	<b>34.67</b>	<b>Hcat 10, v=5</b>	<b>22.12</b>
<b>Gcat. 10%</b>	<b>4.40</b>	<b>Gcat 5, v=2</b>	<b>4.68</b>	<b>Gcat 10, v=2</b>	<b>3.36</b>
		<b>Gcat 5, v=3</b>	<b>4.43</b>	<b>Gcat 10, v=3</b>	<b>3.06</b>
		<b>Gcat 5, v=5</b>	<b>4.07</b>	<b>Gcat 10, v=5</b>	<b>2.68</b>

		<b>Pre</b>	<b>Post</b>	<b>Diff</b>	<b>% Diff</b>
<b>Poverty Head-Count Index</b>					
	<b>Per Capita</b>	<b>0.5725</b>	<b>0.6139</b>	<b>-0.0414</b>	<b>-7.23</b>
	<b>EQVS. 1-0.5 e=0.7</b>	<b>34.87</b>	<b>39.55</b>	<b>-4.68</b>	<b>-13.42</b>
	<b>EQVS. 1-0.5 e=0.3</b>	<b>20.11</b>	<b>23.71</b>	<b>-3.6</b>	<b>-17.90</b>
<b>Poverty Gap Index</b>					
	<b>Per Capita</b>	<b>0.27107</b>	<b>0.299935</b>	<b>-0.02887</b>	<b>-10.65</b>
	<b>EQVS. 1-0.5 e=0.7</b>	<b>0.135468</b>	<b>0.159544</b>	<b>-0.02408</b>	<b>-17.77</b>
	<b>EQVS. 1-0.5 e=0.3</b>	<b>0.0637</b>	<b>0.080208</b>	<b>-0.01651</b>	<b>-25.92</b>
<b>Square Poverty Index</b>					
	<b>Per Capita</b>	<b>0.163423</b>	<b>0.185497</b>	<b>-0.02207</b>	<b>-13.51</b>
	<b>EQVS. 1-0.5 e=0.7</b>	<b>0.069813</b>	<b>0.08522</b>	<b>-0.01541</b>	<b>-22.07</b>
	<b>EQVS. 1-0.5 e=0.3</b>	<b>0.02887</b>	<b>0.036695</b>	<b>-0.00783</b>	<b>-27.11</b>

**Table 4 Results from AJL Decomposition Based on Per Capita Income**

<b>Parameters</b>	<b>Income-bands: <math>G_x</math> 10 percentiles</b>	<b>Income-bands: 5 percentiles</b>	<b>Income-bands: 3.3 percentiles</b>	<b>Income-bands 1 percentile</b>
<b><math>G_x</math></b>	<b>0.4474**</b>	<b>0.4474**</b>	<b>0.4474**</b>	<b>0.4474**</b>
<b>Se</b>	<b>0.0111</b>	<b>0.0111</b>	<b>0.0111</b>	<b>0.0111</b>
<b>CI</b>	<b>0.4691</b>	<b>0.4691</b>	<b>0.4691</b>	<b>0.4691</b>
	<b>0.4258</b>	<b>0.4258</b>	<b>0.4258</b>	<b>0.4258</b>
<b><math>G_{X-T}</math></b>	<b>0.4482**</b>	<b>0.4482**</b>	<b>0.4482**</b>	<b>0.4482**</b>
<b>RE</b>	<b>-0.0008</b>	<b>-0.0008</b>	<b>-0.0008</b>	<b>-0.0008</b>
<b>g</b>	<b>0.0883</b>	<b>0.0883</b>	<b>0.0883</b>	<b>0.0883</b>
<b><math>C_T</math></b>	<b>0.5754</b>	<b>0.5875</b>	<b>0.5875</b>	<b>0.5893</b>
<b>K</b>	<b>0.1280</b>	<b>0.1401</b>	<b>0.1416</b>	<b>0.1419</b>
<b>V</b>	<b>0.0124</b>	<b>0.0136</b>	<b>0.0137</b>	<b>0.0138</b>
<b>H</b>	<b>0.0086</b>	<b>0.0070</b>	<b>0.0042</b>	<b>0.0009</b>
<b>R</b>	<b>0.0045</b>	<b>0.0074</b>	<b>0.0103</b>	<b>0.0137</b>

# Conclusion

This study has shown that when the decision to utilize healthcare is co-terminus with the decision to finance healthcare, the healthcare financing system is likely to lead to high incidence of catastrophic healthcare financing, impoverishment, reranking and inequities, both vertical and horizontal. The incidence of catastrophic financing is likely to be higher if the policy maker is averse to inequality in catastrophic financing. Hence policy response is likely to depend on the extent the social decision maker is sensitive to the welfare of the poor.

The large incidence of impoverishment arising from direct healthcare financing also calls attention to the urgent need to reform health financing in Nigeria. There is need to separate healthcare utilization from healthcare financing if majority of the people are to utilize healthcare services. Finally, the fact that healthcare financing is not redistributive in Nigeria confirms that healthcare is financed in proportion to households' ability to pay, implying that households that cannot afford to pay are denied healthcare services.

Thank you for your attention