

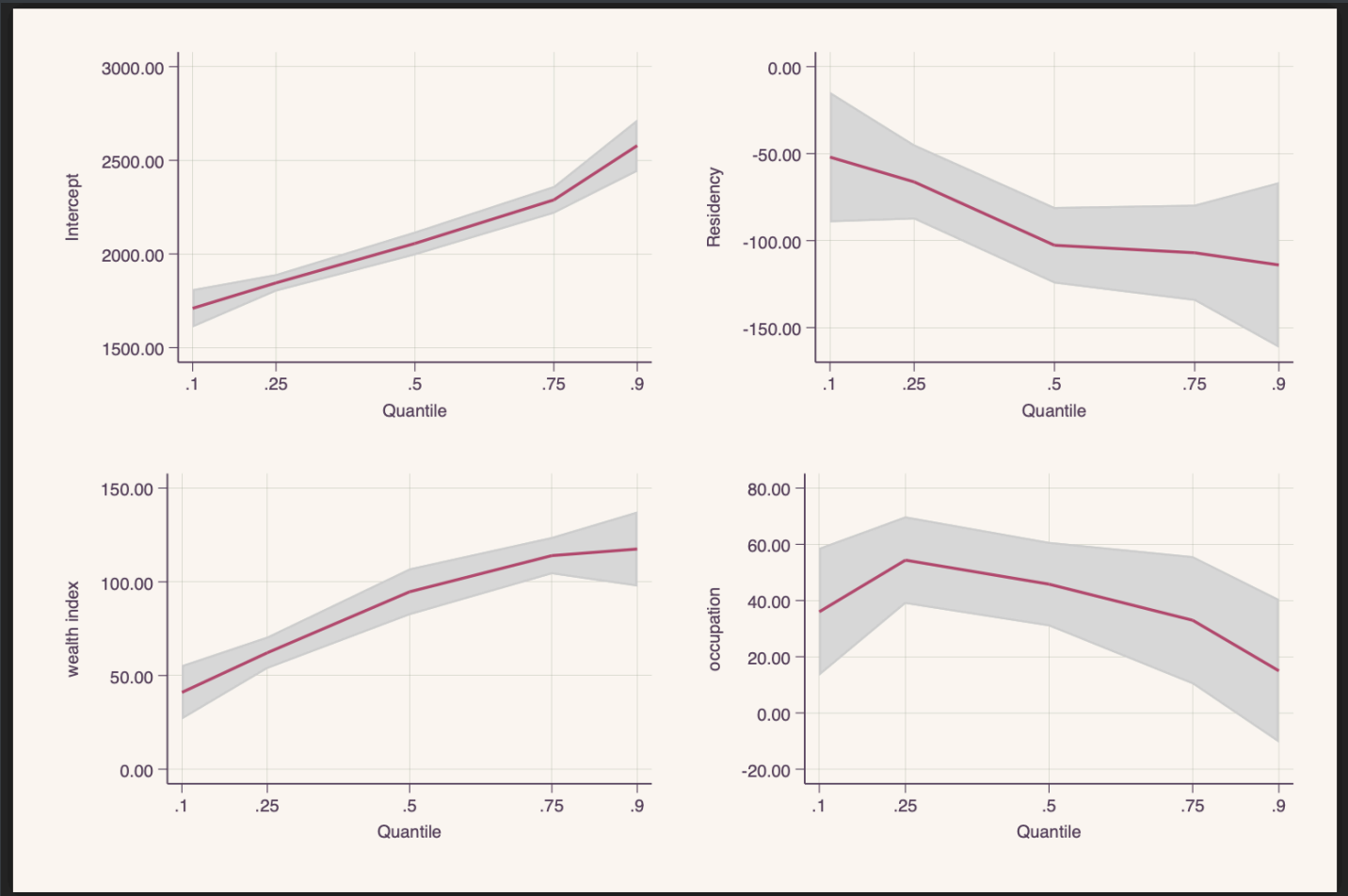
Quantile regression model is an extension of the OLS regression that estimates the conditional median and other quantiles of the outcome measure across values of the explanatory variable/s. As OLS calculates the conditional mean of the response variable, this make it more sensitive to outliers than qreg.

The main advantage of qreg over OLS is that it provides a more grained estimation of the association by calculating the effects for a desired set of quantiles, whereas OLS provides a partial view of the association as it is based on the conditional mean only.

As illustrated by the below example, the association between BMI varies markedly for the different quantiles for each of the explanatory variable. While rural residence was inversely associated with BMI, the association is more pronounced for the 90th percentile compared with those in the 10th. Similarly, higher wealth index appeared to be positively correlated with BMI, with the association being remarkable higher for 90th percentile. As such, qreg provdes a more nuanced picture of the relationship that OLS models fail to capture.

Qreg

```
sqreg bmi Residency Wealth occupation, quantile(.1 .25 .5 .75 .9)
grqreg, cons ci
```



OLS model

```
. reg bmi i.Residency i.Wealth i.resp_occupation, base cformat(%9.2f)
```

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          bmi |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
Interval]
```

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          Residency |
            urban |      0.00   (base)
```

rural		-75.28	13.45	-5.60	0.000	-101.66
-48.91						
Wealth						
quintile						
1. poorest		0.00	(base)			
2. poorer		54.47	18.86	2.89	0.004	17.51
91.44						
3. middle		136.63	18.89	7.23	0.000	99.59
173.66						
4. richer		219.11	18.69	11.73	0.000	182.48
255.75						
5. richest		376.99	19.85	19.00	0.000	338.08
415.89						
resp_occupation						
Unemployed		0.00	(base)			
Blue collar		36.51	13.65	2.67	0.008	9.74
63.28						
White collar		69.86	18.38	3.80	0.000	33.84
105.89						
_cons		2105.48	18.65	112.91	0.000	2068.93
2142.04						