URBAN PRODUCTIVITY EFFECTS OF LOCAL GOVERNMENTS

Autonomy, quality, fragmentation

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A comprehensive approach to understanding urban productivity effects of local governments: Local autonomy, government quality and fragmentation



Government quality is positively linked to urban labour productivity under "right" governance arrangements

- □ With good quality institutions and limited fragmentation across functional urban areas, decentralisation is positively associated with productivity
- If these conditions are not met, decentralisation is negatively linked to urban labour productivity
- □ Fragmentation works as a barrier (mutes both positive and negative effects)
- The most productive urban areas tend to have high government quality, high decentralisation and low horizontal fragmentation



- Cities of 50k+ account for more than half population globally
- Are hotbeds of innovation and often lead productivity growth of their countries
- Importance of cities is expected to grow
- Complexity of urban economic and social interactions in cities brings the question of "best" governance arrangements to the fore

We now have data to measure both urban economic activity in a consistent way and (some) governance arrangements

Functional Urban Areas (FUAs)







Governance arrangements: Measures

European Quality of Government Index (EQI)

is based on a large citizen survey where respondents are asked about perceptions and experiences with public sector corruption, impartiality and quality of public services provision Local Autonomy Index (LAI)

is calculated based on the opinions of an expert network who assess the autonomy of local government of their respective countries on the basis of a common code book

Horizontal fragmentation

Is the number of local governments within each FUA after factoring out population effects

 $\log(Gov's)_{f,2011}$ = $\alpha + \beta_1 \log(Pop)_{f,2011}$ + $\varepsilon_{f,2011}$





Dependent variable: FUA labour productivity (GDP per worker, USD in constant prices and PPP, base year 2015).

| Variables | Pooled | Multi-level | Multi-level | Multi-level |
|-----------------------------|-----------|-------------|----------------------------|-------------------------------|
| | (A) | (B) | (C=B + time fixed effects) | (D=C + country fixed effects) |
| Decentralisation (LAI) | -0.052*** | -0.058*** | -0.066*** | -0.067*** |
| | (0.006) | (0.006) | (0.006) | (0.006) |
| Quality of government (EQI) | 0.107*** | 0.061*** | 0.071*** | 0.070*** |
| | (0.006) | (0.005) | (0.005) | (0.005) |
| EQI*LAI | 0.053*** | 0.055*** | 0.050*** | 0.050*** |
| | (0.006) | (0.005) | (0.005) | (0.005) |
| Fragmentation | 0.045*** | 0.022* | 0.028** | 0.016 |
| | (0.004) | (0.013) | (0.013) | (0.014) |
| LAI*Fragmentation | 0.015*** | 0.021*** | 0.023*** | 0.025*** |
| | (0.006) | (0.005) | (0.005) | (0.005) |
| EQI*Fragmentation | -0.004 | -0.024*** | -0.033*** | -0.034*** |
| | (0.005) | (0.004) | (0.004) | (0.004) |
| EQI*LAI*Fragmentation | -0.053*** | -0.016*** | -0.025*** | -0.024*** |
| | (0.006) | (0.003) | (0.003) | (0.003) |

Rectangular Snip













Helsinki, Finland (predicted productivity rank #1)



Prague, Czech Republic



Radom, **Poland** (predicted productivity rank #242) (predicted productivity rank #121)

If quality of government in **Radom** increases to that of **Helsinki**, productivity **158%**

If quality of government in **Prague** increases to that of **Helsinki**, productivity will not change noticeably (decreasing government quality also does not have sizable effects)



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- Quality of government tends to be high in Britain but local autonomy is low
- Devolution in this context can improve urban labour productivity
- For example, labour productivity in Leicester is predicted to increase by 6% if autonomy increases by one standard deviation
- If autonomy increases to that of Helsinki, labour productivity is predicted to increase by 21%

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ANTHE LAND



ALL STATEMENT OF STATEMENT



$$\begin{split} LP_{c,a,r,f,t} &= \beta_0 + \beta_1 LAI_{c,a,t} + \beta_2 EQI_{c,a,r,t} + \beta_3 Fragmentation_{c,a,r,f} \\ &+ \beta_4 EQI * LAI_{c,a,r,t} + \beta_5 EQI * Fragmentation_{c,a,r,f,t} \\ &+ \beta_6 LAI * Fragmentation_{c,a,r,f,t} \\ &+ \beta_7 EQI * LAI * Fragmentation_{c,a,r,f,t} + \beta_k X_{c,a,r,f,t} + u_{0a} + u_{1r} \\ &+ u_{rf} + \omega_t + \omega_c + \varepsilon_{c,a,r,f,t} \end{split}$$



Estimation results for the full model using one pillar of EQI at a time

Dependent variable: FUA labour productivity (GDP per worker, USD in constant prices and PPP, base year 2015).

| Variables | Corruption | Quality | Impartiality |
|--|------------|-----------|--------------|
| Decentralisation (LAI) | -0.058*** | -0.061*** | -0.060*** |
| | (0.006) | (0.006) | (0.006) |
| EQI pillar (indicated in top of each column) | -0.060*** | 0.050*** | 0.043*** |
| | (0.004) | (0.004) | (0.004) |
| EQI pillar*LAI | -0.042*** | 0.036*** | 0.033*** |
| | (0.004) | (0.004) | (0.004) |
| Fragmentation | 0.024* | 0.008 | 0.007 |
| | (0.014) | (0.014) | (0.014) |
| LAI *Fragmentation | 0.020*** | 0.017*** | 0.022*** |
| | (0.005) | (0.005) | (0.005) |
| EQI pillar*Fragmentation | 0.038*** | -0.022*** | -0.017*** |
| | (0.004) | (0.003) | (0.003) |
| EQI pillar*LAI*Fragmentation | 0.017*** | -0.015*** | -0.017*** |
| | (0.003) | (0.003) | (0.002) |
| | | | |



Estimation results for the full model using one dimension of LAI at a time

Dependent variable: FUA labour productivity (GDP per worker, USD in constant prices and PPP, base year 2015).

| Variables | Discretion | Policy | Financial | Organisational | Legal | Interference | Access |
|---|------------|-----------|-----------|----------------|----------|--------------|----------|
| LAI dimension (indicated in top of each | 0.003 | -0.012** | -0.019*** | -0.027*** | 0.045 | -0.024*** | -0.011 |
| column) | (0.006) | (0.005) | (0.003) | (0.002) | (0.049) | (0.003) | (0.020) |
| Quality of government (EQI) | 0.056*** | 0.066*** | 0.041*** | 0.018*** | 0.040*** | 0.041*** | 0.043*** |
| | (0.006) | (0.005) | (0.005) | (0.005) | (0.007) | (0.005) | (0.004) |
| EQI*LAI dimension | 0.038*** | 0.017*** | -0.004* | 0.047*** | -0.006 | 0.002 | 0.030*** |
| | (0.004) | (0.003) | (0.002) | (0.003) | (0.011) | (0.002) | (0.002) |
| Fragmentation | 0.017 | 0.021 | -0.005 | -0.015 | 0.001 | 0.003 | 0.002 |
| | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |
| LAI dimension*Fragmentation | 0.009** | 0.004 | 0.015*** | -0.006*** | 0.014 | 0.011*** | -0.003 |
| | (0.004) | (0.003) | (0.003) | (0.002) | (0.010) | (0.002) | (0.007) |
| EQI*Fragmentation | -0.038*** | -0.029*** | -0.006 | 0.026*** | 0.000 | -0.004 | -0.003 |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.005) | (0.004) | (0.004) |
| EQI*LAI*Fragmentation | -0.009*** | -0.015*** | -0.004** | -0.012*** | -0.002 | -0.003** | 0.007*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.006) | (0.002) | (0.002) |



Estimation results for the full model before and after the 2008 crisis

Dependent variable: FUA labour productivity (GDP per worker, USD in constant prices and PPP, base year 2015).

| Variables | 2003-2008 | 2008-2014 |
|-----------------------------|-----------|-----------|
| Decentralisation (LAI) | 0.077*** | -0.039*** |
| | (0.021) | (0.006) |
| Quality of government (EQI) | 0.055*** | 0.044*** |
| | (0.008) | (0.006) |
| EQI*LAI | -0.084*** | 0.038*** |
| | (0.013) | (0.005) |
| Fragmentation | 0.001 | 0.009 |
| | (0.014) | (0.014) |
| LAI*Fragmentation | 0.037*** | 0.015*** |
| | (0.013) | (0.005) |
| EQI*Fragmentation | -0.007 | -0.018*** |
| | (0.006) | (0.004) |
| EQI*LAI*Fragmentation | -0.034*** | -0.014*** |
| | (0.008) | (0.003) |



Average Marginal Effects of EQI with 95% CIs

