

FINANCIAL EXCLUSION AND THE COST OF INCOMPLETE PARTICIPATION

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SOMMARIO

Economic and social implications of the access to financial services both in developed and in developing countries have increasingly promoted the debate around the issue of considering “financial inclusion” as a public good, according to potential positive externalities associated to greater financial participation. If the role of financial inclusion as a public good, and the enhanced efficiency of public policy following a greater participation in the financial markets are established in an abstract way, a numerical estimate of the potential costs of incomplete participation in the financial system is still not explicitly addressed in the literature. The study designs a simplified approach for the calculation of the cost of financial exclusion through the identification of a general functional form representing the cost of incomplete participation in the financial system encountered by participating individuals or by the public policy aimed at alleviating financial exclusion. Such a cost is estimated parametrically according to alternative subgroups of financially included on the overall population corresponding to national income quantiles. Calculations show the role of financial exclusion in generating inefficiencies that raise the cost of accessing to financial transactions for all the participating individuals, or, in a policy perspective, the cost to tackle incomplete participation.

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Introduction

A general consensus recently aroused amongst European experts about financial exclusion being part of the wider concept of social exclusion and on its definition as “a process whereby people encounter difficulties accessing and/or using financial services and products in the mainstream market that are appropriate to their needs and enable them to lead a normal social life in the society which they belong” (European Commission 2008).

Economic and social implications of the access to financial services both in developed and in developing countries have increasingly promoted the debate around the issue of considering “financial inclusion” as a public good. Microfinance advocates emphasize the nature of public good of the provision of income-generating services by Microfinance Institutions (MFIs) (Balkenhol, 2008). According to Merhotra et al. (2009) financial inclusion differs from typical public good as defence, but is deemed to be a “quasi public good” as it meets the conditions of non-rivalness in consumption and non-excludability to a large degree. Moreover, positive externalities are associated to financial inclusion as the advantages of network effects for participants, the expanding value of the overall financial system, and a more effective monetary policy resulting from a greater participation (Agrawal, 2008).

If the role of financial inclusion as a public good, and the enhanced efficiency of public policy following a greater participation in the financial markets are established in an abstract way, a numerical estimate of the potential costs of incomplete participation in the financial system is still not explicitly addressed in the literature.

A simplified approach for the calculation of the cost of financial exclusion is provided in the present study through the identification of a general functional form representing the cost of incomplete participation in the financial system as showed by Nordhaus (2009) for the case of the CO₂ abatement cost in the framework of participation to International Protocols.

The aim of the study is to capture in an intuitive way the general effect of financial exclusion in an aggregate model presented in paragraph 1. An estimation of the cost of incomplete participation is carried out in paragraph 2 according to alternative subgroups of financially included on the overall population corresponding to national income quantiles.

1. The model of incomplete participation

A specific reduced functional form for the cost of accessing to financial markets is firstly assumed. In a policy perspective, the cost function is also deemed to capture the abatement cost of financial exclusion, and in case of full participation is the following:

$$(1) \quad C(t) = Q(t)\alpha(t)\mu(t)^\beta$$

In the above complete participation cost function, $C(t)$ is the average cost, $Q(t)$ is value added inclusive of oligopoly profits, $\mu(t)$ is the productivity reduction rate caused by financial exclusion and associated market imperfections, α and β are fixed parameters. In previous estimates on the convexity parameter in the marginal cost of financial participation, $\mu(t)$ has been considered as a composite index of different dimensions of financial exclusion: rate of access to a bank account of the adult population, geographic coverage by type of supplier, and credit rationing (Bollino and Botti, 2010). Regardless of full inclusion, $\mu(t)$ is positive (even if low) on account of persistent financial market imperfections (e.g. informational asymmetries).

Then assume that only a fraction of the population have access to financial transactions, corresponding to a share of the overall potential demand for financial services $\pi(t)$. In the described financial exclusion scenario, the productivity reduction rate of participants, $\mu^P(t)$, is positive and marginal costs are equated among them. Non-participants do not bear productivity reduction associated to financial market imperfections as they are excluded from financial transactions, and thus $\mu^{NP}(t)$ is equal to zero. The cost function of participants under these assumptions is the following:

$$(2) \quad C(t) = C^P(t) = Q^P(t)\alpha(t)\mu^P(t)^\beta$$

where $Q^P(t)$ is the output of participants and the overall productivity reduction rate is given by:

$$(3) \quad \mu(t) = \mu^P(t)\pi(t)$$

Assuming that the demand-output ratios are equal between participant and non-participants, $Q^P(t) = Q(t)\pi(t)$, the participation cost function is the following:

$$(4) \quad C(t) = [Q(t)\pi(t)]\alpha(t)[\mu(t)/\pi(t)]^\beta$$

or

$$(5) \quad C(t) = Q(t)\alpha(t)\mu(t)^\beta\pi(t)^{1-\beta}$$

The participation cost function shows the effects of financial exclusion on participants' costs. If compared to the full inclusion cost function (1), it exhibits a cost penalty factor $\pi(t)^{1-\beta}$ accounting for the extra cost encountered by individuals accessing to the financial market or by the public policy aimed at alleviating financial exclusion. Therefore financial exclusion generates an inefficiency represented by the exponential function of the parameter $(\beta-1)$ corresponding to the convexity of the marginal cost.

2. The estimation of the cost of incomplete participation

If we want to estimate the cost of excluding a fraction of the overall population from financial markets, we can look at the extra cost that society incurs with less than full participation. This can be seen parametrically through the participation cost function (5).

A comparison of equation (2) and (5) allows to identify a measure of the cost associated with financial exclusion and with algebraic manipulation it is easy to show that partial financial exclusion raises total costs by a penalty factor $\pi(t)^{1-\beta}$.

The inefficiency produced by financial exclusion is an exponential function of the parameter $(\beta - 1)$ that is the convexity of the marginal cost of participation to financial transactions. If marginal costs are constant, then $(\beta - 1)$ equals zero and the cost-penalty factor is zero as well. Otherwise, if marginal costs increase with higher productivity reduction, then the parameter $(\beta - 1) > 0$ and financial exclusion is costly³.

In our empirical estimation, we split the total population of economic agents in subgroups corresponding to income quintiles (see Tab 1) and assume that such division reflects both the probability to be part of the financial exclusion group and the actual socio-economic condition in the income distribution. The prevailing evidence on the role household income as a major predictor of being unbanked supports the assumption.

Table 1 shows the distribution of national equivalised income by quintile in Italy in 2009 according to EU-SILC data. According to data on income shares, the richest 4th and 5th quintile in the distribution hold more than 60% of total national equivalised income. While including the middle quintile, 60% of total population account for 4/5 of total income.

The described participation cost function allows us to illustrate how financial exclusion induces additional costs to the functioning of the financial sector, i.e. inefficiency costs generated by incomplete participation.

We calculate the cost penalty factor associated to different degree of financial exclusions by assuming that the exponent parameter is $(\beta - 1) = 1.8$, according to preliminary estimates of the convexity parameter in the marginal cost of abatement of financial exclusion using cross sectional regional data (Bollino and Botti, 2010).

³ Nordhaus (2009) estimates a similar type of inefficiency cost induced by non participation of some countries to the Kyoto Protocol abatement policy.

Table 1. Distribution of national equivalised income by quintiles in Italy, 2009

Quintiles	Top cut-off point	Share of total income (%)	Cumulative share (%)
5th	333,388	38.9	38.9
4th	24,059	23.2	62.1
3rd	18002	17.4	79.5
2nd	13572	13.0	92.5
1st	9735	7.5	100

Source: Eurostat, EU-SILC database

Supposing that the access to financial market is restricted to the two wealthiest quintiles of the income distribution, the cost of incomplete participation is $(0.621) \cdot 1.8 = 2.36$ times the cost under complete participation. By including those individuals in the middle quintile it would cover 79.5% of total equivalised income, and the cost of incomplete participation become $(0.795) \cdot 1.8 = 1.51$ times higher than in the case of full inclusion (see Tab. 2).

Table 2. Estimates of the cost penalty associated to financial exclusion of selected groups

Quintiles	Financial inclusion rate (%)	Associated cost penalty factor $\pi(t)^{1-\beta}$
Wealthies (5th and 4th)	62.1	2.36
Top 3 (5th, 4th and 3rd)	79.5	1.51
Top 4 (5th, 4th, 3rd and 2nd)	92.5	1.15

If available estimates on the share of the financially excluded in Italy (16% according to European Commission, 2008) are taken into account, the cost penalty factor (1.15) associated to the partial participation of the four richest quintile in the income distribution reported in the last row of Table 2 (in which 20% of the overall population do not participate) roughly approximate actual inefficiency generated by incomplete participation in Italy.

These calculations show the role of financial exclusion in generating inefficiencies that raise the cost of accessing to financial transaction for all the participating individuals, or, in a policy perspective, the cost to tackle incomplete participation.

Conclusion

The inclusion of unbanked in the mainstream financial system has been increasingly recognized as a prerequisite for a full participation in economic and social life and a major concern in policy makers agenda at both the national and European level⁴. However, available evidence shows that a notable share of Europeans is excluded from the access to even a basic payment account (European Commission, 2008). If the role of financial exclusion as a public good is commonly established in policy and academic circles, the achievement of a greater access to financial transaction is still a crucial challenge to attain an efficient policy.

The identification of a functional form for a participation cost function in order to attain a numerical estimation of the cost of incomplete access to financial transactions has been the major aim of the present study.

The participation cost function shows the inefficiency arising from financial exclusion for participants by identifying a cost penalty factor $\pi(t)^{1-\beta}$. Considerable cost penalty from different degrees of financial exclusion are basically related to the convexity of the marginal cost function expressed by the exponential parameter $(\beta - 1)$ that is higher than zero. This convexity implies that significant maximum benefits (i.e. low costs) can be achieved if the whole population is allowed to participate to financial transactions. The reasoning above is quite intuitive: if many groups do not participate, the penalty cost is high, because the productivity benefits could hardly be achieved.

Numerical results in our study also highlighted the potential magnitude of the cost of financial exclusion actually sustained by the society and strengthen the call for policy actions to take coordinated efforts to promote greater access to financial services.

⁴ See European Commission “Recommendation on access to a basic payment account”, C(2011) 4977/4.

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ABSTRACT

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