

REGIONAL DEVELOPMENT POLICY IN BRAZIL: A REVIEW OF EVALUATION LITERATURE

POLÍTICA DE DESENVOLVIMENTO REGIONAL NO BRASIL: UMA REVISÃO DA LITERATURA SOBRE AVALIAÇÃO

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Abstract: In Brazil, the primary regional development policy is directed by the regional development funds for the Northeast (FNE), the North (FNO), and the Central-West (FCO). First, the paper reviews the theoretical rationale for regional development policies and discusses some important issues related to evaluation process of regional economic development policies. Moreover, it analyses the main regional policy in Brazil as well as the evaluation literature on it. Among other comments, the paper enumerates some steps to overcome this lack of regional development policy evaluation in Brazil

Keywords: evaluation, Regional Development Policy, Regional Development Funds, regional inequality, Brazil.

Resumo: No Brasil, a principal política de desenvolvimento regional é executada pelos Fundos Constitucionais de Financiamento do Nordeste (FNE), do Norte (FNO) e do Centro-Oeste (FCO). Inicialmente, o artigo analisa a justificativa teórica para as políticas de desenvolvimento regional e discute algumas questões importantes relacionadas com processo de avaliação de políticas de desenvolvimento regional. Além disso, analisa-se a principal política regional no Brasil, bem como a literatura de avaliação sobre ela. Entre outras observações, o artigo enumera algumas medidas para superar essa falta de avaliação de políticas de desenvolvimento regional no Brasil.

Palavras-chave: avaliação, Política de Desenvolvimento Regional, Fundo de Desenvolvimento Regional, desigualdade regional, Brasil.

INTRODUCTION

In Brazil, the primary regional development policy has been in place since 1989. This policy seeks to facilitate the economic and social development of lagging macro-regions by offering loans below market interest rates, primarily, to small-scale farmers and small industrial firms. Such development is directed by the Constitutional Financing Funds for the Northeast (FNE), the North (FNO), and the Central-West (FCO) (henceforth referred to as the regional development funds)¹. However, there have been very few evaluations of how these regional development funds are being used. Several fields employ these evaluations, which aim to answer questions such as when and how interventions or treatments 'work' and seek to inform decisions about improvements, expansions or modifications that can be made in a specific policy or program. This paper focuses on reviewing

¹ Regional inequalities have persisted in Brazil for decades. For example, the Gross Domestic Product (GDP) per capita of the poorest region, which is the Northeast, was only 43% of the national average in 1989 and 47.5% in 2006. On the other hand, the per capita GDP in the Southeast region, the wealthiest region, was 139% of the national average in 1989 and 133% in 2006. Brazil has five macro-regions: South, Southeast, Central-West, Northeast and North.

the theoretical rationale and background of the Brazilian regional development funds (FNE, FNO and FCO) as well as the evaluation literature on these funds. Moreover, it discusses some important issues related to evaluation process of regional economic development policies.

Of note, between 2000 and 2006, the regional development funds invested €10 (R\$ 28) billion in lagging macro-regions (Northeast, North and Central-West) in Brazil. This represented 1.2% of the national GDP in 2006. It is interesting to note that, between 2000 and 2006, the European Union (EU15), which has been a paradigm of regional policy for the Brazilian governments², allocated €135 billion to regions with less than 75% of the average EU15 GDP per capita. Coincidentally, this expenditure also represented 1.2% of EU15 GDP in 2006. These numbers suggest that the Brazilian government has invested a significant amount of money in regional development policy. However, very few studies have attempted to evaluate the Brazilian regional development funds.

The paper is organized as follows. In Section 2, the justifications for regional development policy are reviewed. Section 3 reviews the strategy of the Brazilian regional development funds since 1989. Section 4 seeks to discuss policy process, its objectives and the types of evaluation regarding the Brazilian regional development funds. Section 5 concludes and provides some prospects for future evaluations.

JUSTIFICATIONS FOR REGIONAL ECONOMIC DEVELOPMENT POLICY IN BRAZIL

There has been a long and intense debate about the rationale for regional economic development policies among academics, specialists and policy makers. This section, rather than providing a complete review of the justifications for all economic perspectives, briefly summarises some theoretical justifications for regional economic development policy. In this context this section provides background discussion of theories of economic growth and their implications for development policy that underlie the evaluation literature of regional development policy in Brazil.

Regional policies are justified by the existence of market failures, such as credit market imperfections, externalities and imperfect information. Given these failures, regional development agencies around the world have designed policies to mitigate these failures. Furthermore, "new economic geography" (NEG) models shed light on the possible trade-off between equity and efficiency when regional policies are carried out.

As highlighted by Resende (2013), before Solow's growth model (Solow, 1956), the discussion concerning the role of the state in promoting economic growth and industrialisation was based on two basic ideas: (i) the concept that higher growth in output per capita was due to higher investment rates, as

² For example, see the document on the European Union-Brazil dialogue on regional policy: <http://ec.europa.eu/regional_policy/international/pdf/eu_br_regint_en.pdf>.

highlighted by the Harrod-Domar model (HARROD, 1948; DOMAR, 1946); and (ii) the concept of the “big push” (Murphy et al., 1989), which emphasizes that the government can establish the correct rate of investment across many sectors of the economy, thus creating backward and forward linkages that would make industrialization profitable and self-sustainable. This idea was formerly introduced by Rosenstein-Rodan (1943) and developed by many others (NURKSE, 1953; SCITOVSKY, 1954; FLEMING, 1955; HIRSCHMAN, 1958).

However, in light of the neoclassical growth models [introduced by Solow (1956)], the role of the state in reducing regional per capita income disparities weakened. These models predict that, due to the diminishing returns to capital, regional disparities are only temporary and should decrease over time. Indeed, the debate about factors that affect long run economic growth came with Solow’s (1956) growth model. From the 1990s, using the so-called endogenous growth models (also called “new growth theory”) as a base, regional development agencies around the world have implemented policies to carry out a more active regional policy. This wave of research on economics, pioneered by Romer (1986) and Lucas (1988), seeks to explain why differences in per capita income arise and persist over time.

During the 1990s, another economic field called “new economic geography” (NEG) focused on developing a formal abstract model of spatial agglomeration. These models have focused on the role that increasing returns combined with transport costs play in generating a concentration of economic activity in a limited number of agglomerations (Krugman, 1991; Fujita et al., 1999; Fujita and Thisse, 2002). In recent years, pioneered by Baldwin *et al.* (2003), NEG models have discussed implications for policy, including the trade-off between national growth and regional economic equality. In other words, these models suggest that spatial agglomeration (regional inequality) might raise national growth as a whole³. Martin (2008, p. 7) discusses this trade-off and points out that a key implication of these models is that “*policies to stem spatial agglomeration, or that seek to reduce it, in an effort to close inter-regional (or intra-regional) economic disparities, may be economically inefficient from a growth point of view*”. However, the empirical validation of this trade-off is still an open question⁴. Finally, one important discussion that has emerged is the space-neutral versus the place-based approaches that are concisely discussed in end of this section.

In Brazil, the main justification for a regional development policy dates to the 1950s and is based on the CEPAL’s (Economic Commission for Latin America and Caribbean) centre-periphery arguments. As discussed in Ferreira (2004), the work written in 1958 by Celso Furtado in the GTDN⁵ transposed the ideas of CEPAL—namely, the terms of trade disadvantage of the countries in Latin

³ An illustration of this trade-off can be drawn from Baldwin et al. (2003: 430): “*An income transfer to the poor region lowers income inequality and spatial concentration but lowers the growth rate of the whole economy*”.

⁴ See Martin (2008) for a cautionary note on this trade-off.

⁵ “Grupo de Trabalho para o Desenvolvimento do Nordeste”, (“Working Group for the Development of the Northeast”). See Furtado (1997) for the reprinted document

America—to the North–South imbalance within Brazil⁶. CEPAL also based their policy recommendations on the existence of market failures. However, the prevailing view was that the market failures should be corrected via relative price distortions—subsidies, for example—which would allocate resources more efficiently. Following Furtado’s suggestion, the federal government created, in 1959, the Superintendency for the Development of the Northeast (SUDENE), which was responsible for coordinating all public interventions, such as tax and investment credits, infrastructure investments (mainly in energy and roads), long-term financing and tax incentives for firms in the Northeastern region. In 1974, SUDAM was created for the development of the Amazon region with the same objectives. However, after suspicions of corruption surrounding both organizations (SUDENE and SUDAM), they were both shut down in 2001⁷. Another regional policy created in 1989 is the regional development funds (FNE, FNO, FCO), which aims to promote the economic and social development of the Brazilian lagging macro-regions (Northeast, North, and Central-West) through subsidies to small agricultural and industrial producers seeking to reduce credit constraints. These regional development funds and the latest developments of Brazilian regional policy are discussed in Section 2.5. Recently, some Brazilian economists (for instance, Barros, 2011; Ferreira, 2004; and Pessôa, 2001) have criticized such policies, arguing that regional problems in Brazil are an issue of secondary importance when compared to the inequality among households⁸. Pessôa (2001) argues that a subsidy policy to industry is not the best recommendation for solving inequalities that are embodied in the individual (skill level, for example)⁹. In the same way, Ferreira (2004) points out that it has been observed that once you have control of education and other relevant factors, the contribution of the region to inequality is relatively small as shown by Barros and Mendonça (1995) and Menezes-Filho (2001). These authors argue for a change in the focus of regional policy from subsidy of physical capital accumulation to mass investments in human capital (FERREIRA, 2004). Recently, Barros (2011) measures the contribution of individual and local (area) factors to the observed income inequality between the Northeast (poor) and Southeast (rich) regions. The study shows that after controlling for differences in quantity (years of schooling) and quality of education and for cost of living, it appears that GDP per capita in the Northeast is the same as observed in the Southeast region.

The discussion that has been posed by Pessôa (2001), Ferreira (2004) and Barros (2011) is similar to the argument provided by Gibbons *et al.* (2010) on people versus place based policies in the UK context. First, Gibbons *et al.* (2010) show a picture of pronounced and very persistent disparities across local areas in Britain over the period 1998-2008. Then, they examine “*to what extent these disparities arise because of differences in the types of workers in different areas (sorting) versus different outcomes for the same types of workers in different areas (area effects)*”; and conclude that area effects explain less than 1% of overall

⁶ Castro (1971) and Cano (1976) are other references that also justify Brazilian inequalities between North and South based on the imbalance of exchanges between the two regions.

⁷ SUDENE and SUDAM have been recreated in 2007.

⁸ In 2007, personal income inequality, measured by the Gini index, was 0.53 in Brazil, one of the highest indexes in the world.

⁹ See Pessôa (2001) for the discussion of regional problem vs. social problem.

wage variation (GIBBONS *et al.*, 2010, p. 2)¹⁰. In this sense, “*who you are is much more important than where you live in determining earnings and other outcomes*” (OVERMAN and GIBBONS, 2011, p. 24). Duranton and Monastiriotis (2002) also suggest sorting as an explanation of spatial disparities in UK over the period 1982-1997. In sum, the studies suggest that disparities are driven by ‘people’ rather than ‘place’ (GIBBONS *et al.*, 2010).

Recently, Barca *et al.* (2012) examine the rethinking of regional development policy intervention that has emerged, namely, the space-neutral versus the place-based approaches. These authors discuss the rethinking which has taken place by exploring a series of highly influential reports on the topic produced by the World Bank (2009), the European Commission (Barca, 2009), the OCDE (2009a, 2009b), and the Corporación Andina de Fomento (CAF, 2010) and an earlier report by Sapir *et al.* (2004). Barca *et al.* (2012) advocates in favour of place-based policies in contrast to the 2004 Sapir Report and the World Bank’s (2009) World Development Report ‘*Reshaping Economic Geography*’ saying that:

“[t]he place-based approach therefore argues that there are alternative pathways to development, which require attention to detail and the institutional context. Mega-urban growth at the top of the urban hierarchy, as advocated by the World Bank (2009), is just one such development option, an option which brings its own challenges with it, and an option which so far has not been demonstrated to be an optimal solution (Henderson, 2010). The World Bank (2009) has effectively given up on institutional reform as an essential part of the development process and substituted it with mega-urban growth, thereby foregoing all of the alternative pathways. In contrast, by acknowledging the limits of the central state to design good local development policies, place-based strategies recognize the need for intervention based on partnerships between different levels of governance, both as a means of institution-building and also of identifying and building on local knowledge (Pike *et al.*, 2007)” (Barca *et al.*, 2012, p. 147).

The strategy of the Brazilian regional development funds since 1989 is reviewed in the next section.

BRAZILIAN REGIONAL DEVELOPMENT FUNDS (FNE, FNO, FCO)

The regional development funds (FNE, FNO, and FCO) were created by federal law nº 7827 in 1989, based on article 159.I.c of the Federal Constitution of 1988. An equal portion (3%) of income taxes (from individuals and firms—“IR”) and of the tax on industrialised goods (“IPI”) represents the transfer of resources from the National Treasury to the regional development funds. It is important to note that the goal of the FNE, FNO and FCO defined by the federal law is to reduce regional inequalities through the financing of productive sectors in those macro-

¹⁰ One caveat of this analysis is because it does not control for differences in costs of living and in access to amenities across places, thus, it focuses on nominal rather than real wages. This issue is relevant and is taken into account in Gibbons *et al.* (2011).

regions. As noted earlier, this imprecisely defined objective (or broad objective) is the major obstacle to outcome evaluations.

The total resources allocated to these funds each year is divided as follows: 60% goes to the FNE; 20%, to the FNO; and 20%, to the FCO. These resources are transferred from the National Treasury to the operating bank via the Ministry for National Integration (“Ministério da Integração Nacional”). Beyond the 3% IR and IPI taxes, the revenues for these funds come from the repayment of the loans (principal + interest). In this way, law nº 7827 (1989) defines the source of funding and designates the regional banks as being the operators of the regional development funds. The operator bank of FNE is the Bank of the Northeast (Banco do Nordeste/BNB), and for the FNO, it is the Bank of Amazon (Banco da Amazônia/BASA), both of which were founded in the 1950s with the aim of fomenting and developing these lagging regions. The Central-West region does not have a regional bank, and the operator bank of FCO is the Bank of Brazil (Banco do Brasil/BB, a Brazilian federal bank).

Specifically, the operator banks of the regional development funds are the agents responsible for analysing and deciding whether to award the subsidised loans to applicants. The interest rates of the loans are fixed but vary depending on the size of the beneficiary and the sector. Furthermore, good payers win compliance bonuses in the form of an interest rate reduction of approximately 15%. Applicants can be individuals, small businesses, enterprises or cooperatives/associations that want to finance a new business or an existing one located in the Northeast, North or Central-West region. There are some general guidelines that the banks follow when analysing applications: preference is given to (i) productive activities of individual and small farmers and (ii) small firms in other sectors, (iii) activities that intensively use raw materials and are labour-intensive and produce basic food for the population, and (iv) new centres, activities or clusters that can reduce the economic and social differences between regions. Moreover, by law, 50% of the FNE loans must be directed toward the “semi-árido” region. Figure 3.1 shows the boundaries of the “semi-árido” region and the GDP per capita in 2000 at the municipal level in the Northeast region. Since the creation of the regional development funds, the resources have been mainly directed to the agricultural and the industrial sectors.

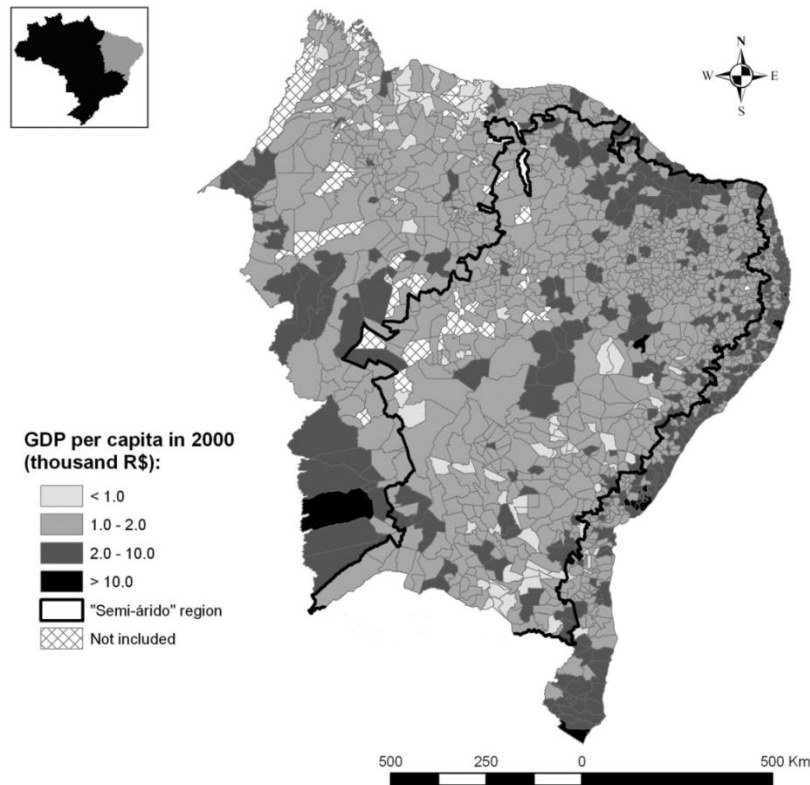


Figure 3.1. Municipal GDP per capita in 2000 in the Northeast Region

Note: Own elaboration based on IBGE data.

As noted earlier, between 2000 and 2006, the regional development funds invested €10 (R\$ 28) billion in lagging macro-regions (Northeast, North and Central-West) in Brazil. This fact represented 1.2% of the national GDP in 2006. It is interesting to note that, between 2000 and 2006, the European Union (EU 15 countries), which has been a paradigm of regional policy for the Brazilian governments, allocated €135 billion to regions with less than 75% of the average EU15 GDP per capita. Coincidentally, this expenditure also represented 1.2% of EU15 GDP in 2006. When comparing these numbers, it can be concluded that the Brazilian government has invested a significant amount of money in regional development policy.

Ferreira (2004) and Almeida Junior *et al.* (2007) conducted comprehensive studies of the resource allocation each year for these funds (FNE, FNO and FCO). Among other analyses, these authors show that the rate of non-performing FNE loans reached 31% in 2001. As pointed out by Ferreira (2004), before 2001 most bad credits were considered “under renegotiation” while, in fact, they were never paid back. This high default rate limited the Bank of Northeast from granting new loans during the 1998–2002 period. In 2002, a federal bailout plan capitalised the Bank of Northeast, and because of this, in the following years, it could increase the loans granted. Concerning FNO, the credit quality was also not good, reaching 13.2% default rate in 2002. On the other hand, FCO presents the lowest default rate at approximately 3% in 2002.

These regional development funds are not the only resources available from a public bank for lagging regions in Brazil. The Brazilian Development Bank (BNDES), a federal public bank established in 1952, also offers loans (interest rates are below market rates but are higher than those of the regional development funds) to companies of any size and sector in all Brazilian regions. While the focus of the regional development funds is the producers in the agricultural sector (60% of total loans), BNDES loans are directed toward large-scale industrial and infrastructure projects (75% of the total loans). However, unlike the operator banks of the regional development funds that work only in the lagging macro-regions, BNDES addresses the demand for funding in all Brazilian regions and does not have an explicit mandate regarding regional policy. Table 3.2 compares the regional development funds (FNE, FNO and FCO) loans and the BNDES loans by region for the period 2000 through 2007.

Table 3.2 shows that between 2000 and 2007, the average ratio between BNDES loans to the Northeast region (R\$ 29.7 billion) and FNE loans (R\$ 18.3 billion) was 1.6. Concerning FNO and FCO, the average ratios were 1.8 and 2.8, respectively. BNDES allocated R\$ 69.8 billion in Northeast, North and Central-West regions between 2000 and 2007, which represents 22% of its total loans (R\$ 322 billion) and twice the amount allocated by the regional development funds (FNE, FNO and FCO). The BNDES loans to the Southeast region (R\$ 189.6 billion) represent almost 60% of the total BNDES loans during the period. This evidence suggests that BNDES loans respond to the demand for funding in the most dynamic regions (e.g., Southeast region).

Table 3.2. Regional Development Fund (FNE, FNO, FCO) and BNDES Loans by Region (2000–2007)

Region	Source of loans	2000	2001	2002	2003	2004	2005	2006	2007	Total
Northeast	BNDES	2,783	3,334	3,784	3,112	2,737	3,803	4,836	5,322	29,712
	FNE	569	302	254	1,019	3,209	4,174	4,588	4,247	18,362
	BNDES/FNE	4.9	11.0	14.9	3.1	0.9	0.9	1.1	1.3	1.6
North	BNDES	930	860	1,881	712	1,954	1,616	1,626	3,461	13,039
	FNO	697	454	605	1,075	1,321	976	986	1,110	7,224
	BNDES/FNO	1.3	1.9	3.1	0.7	1.5	1.7	1.6	3.1	1.8
Centre-West	BNDES	2,064	1,703	2,589	2,831	5,161	3,271	3,659	5,755	27,032
	FCO	292	979	1,439	920	1,172	1,468	1,444	1,974	9,688
	BNDES/FCO	7.1	1.7	1.8	3.1	4.4	2.2	2.5	2.9	2.8
Southeast	BNDES	13,008	14,494	23,074	20,036	21,299	28,740	31,415	37,581	189,646

Continuation										
Region	Source of loans	2000	2001	2002	2003	2004	2005	2006	2007	Total
South	BNDES	4,261	4,826	6,092	6,842	8,683	9,551	9,783	12,773	62,809
Total	BNDES all regions	23,046	25,217	37,419	33,534	39,834	46,980	51,318	64,892	322,239
	BNDES (Northeast) + (North) + (Central-West) regions (A)	5,777	5,897	8,254	6,656	9,852	8,689	10,121	14,538	69,784
	FNE+FNO+FCO (B)	1,558	1,735	2,298	3,014	5,702	6,618	7,018	7,331	35,274
	(A) / (B)	3.7	3.4	3.6	2.2	1.7	1.3	1.4	2.0	2.0

Note: Own elaboration based on BNDES and Ministry for National Integration (MI) data. Values are in R\$ million, current prices.

Some authors, such as Almeida Junior *et al.* (2007) and Oliveira and Domingues (2005), argue that resource allocation of the regional development funds within each macro-region is guided by the demand side. In other words, only entrepreneurs within the prosperous areas have contracted these loans. Therefore, according to those authors, this fact may be generating an increase of intra-regional inequalities, i.e., the inequalities within the lagging macro-regions might be growing. Figure 3.2 aims to demonstrate this finding by plotting total regional development funds' loans per capita (between 1989 and 2004) against per capita income in 1991 at the municipal level. This simple correlation analysis shows what previous authors have already found using more sophisticated econometric methods: regional development funds' loans have been directed to the most prosperous areas (proxied by initial per capita income) within Northeast, North, and Central-West regions. Oliveira and Domingues (2005) suggest that the regional development funds are driven by the demand side. That is, they are requested by the local economic activities that fulfil the fund's requirements. Thus, it is likely that only the most developed activities, those located in municipalities with better access to information and banking infrastructure, have access to these funds. In the end, the consequence is that the impact of these regional development funds tends to be concentrated in the richest municipalities within the lagging macro-regions; therefore, having minimal impact on the economic development of the surrounding poor municipalities (OLIVEIRA and DOMINGUES, 2005).

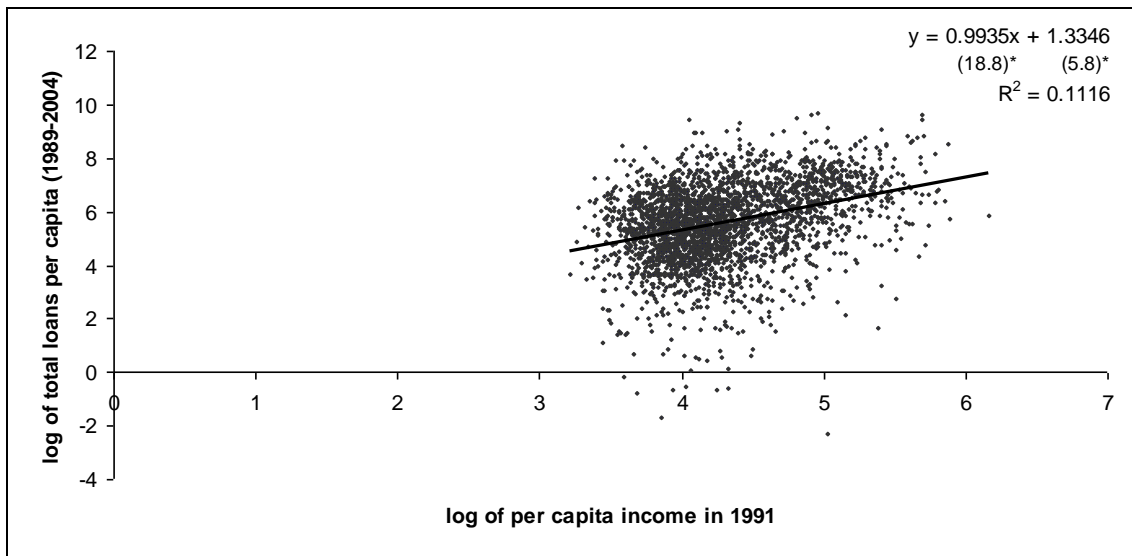


Figure 3.2. Total Loans per capita (1989–2004) vs. Income per capita in 1991 (at municipal level)

Note: Own elaboration based on Ministry for National Integration (MI) data. Note: * T-student tests are in parentheses.

Silva *et al.* (2009) measure the effectiveness of regional development fund (FNE, FNO, and FCO) loans using propensity score estimates of firms that received loans (treatment group) and those that did not receive loans (control group) between 2000 and 2003. The results show that FNE has a positive impact on the growth rate for employment and no impact on the growth rate for wages. The study found that employment growth is approximately 60 percentage points higher for those firms that received loans than for those that did not receive loans over the period. With regard to FNO and FCO, there was no impact observed on the regional development funds on the two variables under study. This original research was sponsored by the Ministry for National Integration (MI/Government of Brazil) and generated policy reports using different time periods but essentially reported the same results¹¹. Soares *et al.* (2009) employ the same propensity score method and expand the evaluation of FNE conducted by Silva *et al.* (2009), enlarging the time horizon under analysis. The results show significant impacts of FNE on employment growth for all periods between 1999 and 2005; however no impact on the growth rate for wages was found¹². Neither of the studies examines the loans granted to individuals in the agricultural sector, which represents roughly 60% of the total FNE during the period under study. For this reason, these results can be viewed as a partial evaluation of the regional development funds. Obviously, further evaluation and research is needed in this field.

Recently, regional development policy in Brazil has changed to target micro-regions (a group of contiguous municipalities) rated as stagnant or low

¹¹ See Almeida *et al.* (2007) and Silva *et al.* (2007).

¹² For instance, the impact of FNE on employment growth over the three-year period is 33 percentage points higher for financed firms.

income based on the National Regional Development Policy (PNDR) implemented by the Ministry of National Integration (MI) through Decree nº 6047 of 2007. The adoption of PNDR sub-regional types (namely, high income, growing, stagnant, and low income) aims at differentiating the micro-regional areas granted through regional development funding. This new approach for regional policy treats regional issues on a sub-regional scale, rather than as a macro-regional issue. This idea stems from the evidence that within the Northeast region, for instance, there are dynamic sub-regional areas (e.g., Petrolina/Juazeiro, Oeste Baiano) that have more capacity to attract private investments when compared with slow growing or low income sub-regional areas. Based on this concept, Araújo (1999) stresses the importance for focusing regional development policy (and public investments) in the stagnant or low income sub-regional areas, counterbalancing the natural tendency of the private investment to be directed to the most dynamic sub-regional areas.

However, PNDR has at least three drawbacks. Firstly, micro-regional scale definition (groups of contiguous municipalities) may not represent a homogeneous set of municipalities that share similar characteristics (and problems) since economic shocks are not self-contained within micro-regions. Indeed, Resende (2011, 2013) suggests that micro-regions have externality effects that might spill over to the neighbouring micro-regions. The choice of a specific spatial scale to implement and evaluate the effectiveness of this regional policy should be better justified. Secondly, the sub-regional typology employs income variables that are only available every 10 years through the Census and municipal Gross Domestic Product (GDP) annual data that only have comparable data from 1999. These issues have a negative impact on both policy design and evaluation. Finally, the problem of low demand for loans in less developed areas will not be solved only by focusing on stagnant or low income micro-regions because, during the majority of the period, the regional development funds have not experienced an excess demand. For this reason, the relevant issue to address is how to create demand for funds in the stagnant or low income micro-regions. Next section discusses some important issues on regional policy evaluation.

EVALUATION OF REGIONAL ECONOMIC DEVELOPMENT POLICY IN BRAZIL

Evaluations aim to answer questions such as when and how interventions or treatments 'work' and seeks to inform decisions about improvements, expansions or modifications that can be made in a specific policy or program (BARTIK and BINGHAM, 1995). This section discusses some issues related to evaluation process of regional economic development policy in Brazil. The primary Brazilian regional economic development policy is directed by the regional development funds (FNE, FNO and FCO). However, there have been very few evaluations of how these regional development funds are being used. A review of the literature carried out by the author reveals that regional development funds in Brazil are, indeed, rarely evaluated because during the period of 2000 to 2009, there are only two papers (out of 4,619) concerning Brazilian regional development funds evaluation that were published in the selected journals [namely, Silva et al. (2009) and. Soares et

al. (2009)].¹³ The investigation of the possible reasons for the scarcity of studies on regional development funds evaluation in Brazil is beyond the scope of this paper¹⁴. In the next subsection, regional development policy process, its objectives and the types of evaluation are discussed.

Policy Process: From Objectives to Evaluation

In general, how are policy objectives defined and evaluations carried out? Regional development policy follows the general public policy cycle, which is usually divided into five stages: (i) analysis (agenda setting), (ii) formulation (design), (iii) choice (decision making), (iv) implementation, and (v) outcome evaluation. In other words, first, "problems are defined and put on the agenda; next policies are developed, adopted and implemented; finally, these policies will be assessed against their effectiveness and efficiency and either terminated or restarted" (JANN and WEGRICH, 2007, p. 44). It is worth noting that outcome evaluation is associated with the final stage in the cyclical model of policy process, but it is also closely related to the initial stages because the results given by the outcome evaluation will serve as input for the initial phases. Furthermore, evaluation studies form a separate sub-discipline as outcome evaluation is only one type of different perspective for evaluating research in terms of time (e.g., ex ante,

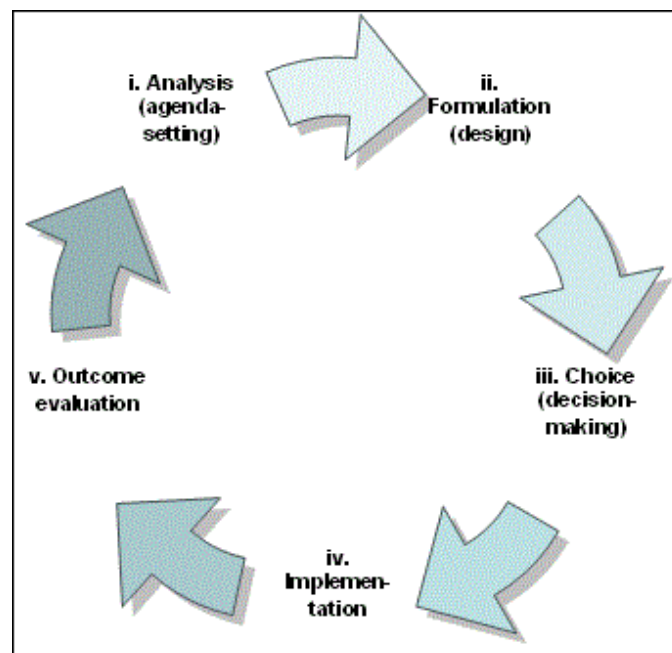
¹³ Amongst the Brazilian journals and leading regional science journals there were only two papers on this issue, and by comparison 20 papers on the EU in the same sample. The search was limited to a selected sample of top journals (the Brazilian journals are *Economia e Sociedade*, *Estudos Econômicos*, *Pesquisa e Planejamento Econômico*, *Revista Brasileira de Economia*, *Revista de Econometria*, *Revista de Economia e Sociologia Rural*, *Revista de Economia Política* and the top international regional science journals are *Annals of Regional Science*, *International Regional Science Review*, *Journal of Regional Science*, *Papers in Regional Science*, *Regional Science and Urban Economics*, *Journal of Economic Geography* and the *Regional Studies* journal). The papers on regional policy evaluation in EU countries are the following: Andersson (2005), Armstrong et al. (2001), Bradley (2006), Dall'erba and Le Gallo (2008), Dall'erba (2005), De la Fuente (2004), Esposti and Bussoletti (2008), Florio (2006), Frenkel et al. (2003), Greenbaum and Bondonio (2004), Harris and Trainor (2005), Lambrinidis et al. (2005), Leonardi (2006), Martin and Tyler (2006), Pereira and Andraz (2006), Pérez et al. (2009), Rodriguez-Pose and Fratesi (2004), Romero and Noble (2008), Romero (2009) and Skuras et al. (2006)]. The only problem with this approach would be if there were more papers on Brazil than the EU in the literature I did not review, which seems unlikely.

¹⁴ It is worth noting that some authors, such as Bartik and Bingham (1995), have already tried to enumerate some reasons for the absence of more sophisticated evaluations of economic development programs (the focus of the work was the USA). In sum, they list six reasons: (i) evaluations with a comparable group require careful procedures to select the comparison group, including collection of extensive quantitative data over a period of time from both the firms participating in the economic development evaluation, and the comparison group; (ii) these data collection and design efforts may be expensive and time consuming; (iii) more rigorous evaluations will have a disproportionate part of their benefits going to groups other than those paying for the evaluation; (iv) administrators prefer a process evaluation as it would offer some clues as to how to improve the program, even if the evaluation by itself does not document what the program really accomplished; (v) state audit agencies frequently do not have staff who are trained in how to do studies that correct for selection bias due to a non-randomly selected comparison group; (vi) program administrators fear the political consequences of a negative evaluation. Hence, they avoid evaluations because with no evaluations, one can always claim success.

ex post) and complexity (e.g., monitoring daily tasks or assessing impact on the problem)¹⁵.

It is worth noting that the stages perspective has created different lines of research that have focused on particular stages—which follow a distinct set of questions, analytical perspectives and methods—rather than on the whole cycle (JANN and WEGRICH, 2007). Also, policy process does not follow this sequence of discrete stages; instead, the stages are constantly connected and entangled in an ongoing process. Despite the limitations of modelling the policy process in terms of stages, first introduced by Lasswell (1956), I employ this approach as an ideal type of rational planning to organize and systemize the discussion around policy evaluation. With the limitations in mind, the following paragraphs briefly sketch the five stages of the cycle framework (see Diagram 4.1) and highlight the main issues related to the Brazilian regional development policy.

Diagram 4.1. 'Cycle model' of the Policy Process



Note: Own elaboration based on Jann and Wegrich (2007).

i. Analysis (agenda setting): The first stage of the policy process is the recognition and analysis of a policy problem that requires state intervention. Then, the recognized problem goes to the agenda for analysis (agenda setting). In this phase, as indicated by Birkland (2007), groups have to fight to earn their issues' places among all of the other issues sharing the limited space on the agenda, and at the same time, they need to fight to keep other issues off the agenda, blocking action of competing issues. In Brazil, the regional inequalities were recognized as a problem in the 1950s, and since then, governments have undertaken some policies to deal with those inequalities. In the new Constitution of 1988, the regional

¹⁵ The types of evaluation are discussed in the next subsection.

inequalities remained a problem and new instruments (e.g., the regional development funds) were defined to fight against these inequalities.

ii. Formulation (design): This stage includes the definition of policy objectives—what should be achieved with the policy—and the consideration of different action alternatives in preparation for the final policy decision (JANN and WEGRICH, 2007). In sum, this stage aims at formulating the set of alternatives that include "*identifying a range of broad approaches to a problem, and then identifying and designing the specific sets of policy tools that constitute each approach*" (SIDNEY, 2007, p. 79). As discussed above, the justification for regional policy in Brazil was influenced by the theories of CEPAL, which argue that the market failures should be corrected via subsidies/incentives to industry and agriculture in the lagging regions. One of the stated objectives of the Brazilian Constitution of 1988 was to reduce inequalities across Brazilian regions¹⁶ using subsidies to the agricultural and industrial sectors in the lagging regions as the main policy tool.

iii. Choice (decision making): It is not easy to define a clear-cut separation between formulation and decision making. Indeed, this distinction is often impossible in practice. Roughly, choice or decision making can be defined as the final adoption of a specific public policy, i.e., the formal decision to take on the policy (JANN and WEGRICH, 2007). In 1989, federal law n° 7827 created the regional development funds for the Northeast (FNE), the Central-West (FCO) and the North (FNO) with the objective of reducing regional inequalities by financing the productive sectors in those macro-regions. It is worth noting that because this is not a precisely defined objective, it will negatively affect the outcome evaluation process, as it will be difficult to measure policy effectiveness.

iv. Implementation: In this stage, policy will be executed by the responsible institutions and organizations. The program details (e.g., definition of agencies, laws) are specified as well as the allocation of resources (e.g., budgets, human resources). Pülzl and Treib (2007) discuss the implementation stage of the policy process, comparing top-down, bottom-up and hybrid approaches¹⁷. Concerning regional policy in Brazil, law n° 7827 (1989) defines the source of funding and designates the regional banks as being the operators of the regional development funds. Essentially, this kind of policy can be defined as a top-down approach.

v. Outcome evaluation: Evaluation research can be applied to the whole policy-making process and exists in various forms. The next subsection will discuss the various forms of evaluation research. Outcome evaluation includes assessing effectiveness, conducting a cost-benefit analysis and verifying whether the policy solved or at least reduced the problem. Depending on the results of the outcome

¹⁶Art. 3rd. The fundamental objectives of the Federative Republic of Brazil are the following: III – (...) to reduce the regional and social inequalities. [This extract from the Brazilian Federal Constitution of 1988 (BRASIL, 2008), was translated by the author.]

¹⁷ Pülzl and Treib (2007: 90) describe the three approaches as "*(a) top-down models put their main emphasis on the ability of decision makers' to produce unequivocal policy objectives and on controlling the implementation stage; (b) bottom-up critiques view local bureaucrats as the main actors in policy delivery and conceive of implementation as negotiation processes within networks of implementers; (c) hybrid theories try to overcome the divide between the other two approaches by incorporating elements of top-down, bottom-up and other theoretical models*".

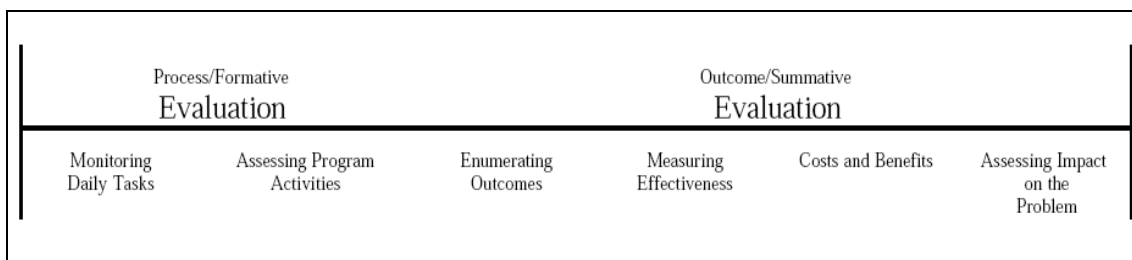
evaluation, the policy will be redesigned, modified or terminated. Furthermore, Jann and Wegrich (2007, p. 54) point out that the activities of the evaluation are exposed to the logic and the incentives of the political process in at least two major ways: *"First, the assessment of policy outputs and outcomes is biased according to the position and substantial interest, as well as the values, of a particular actor. In particular, the shifting of blame for poor performance is a regular part of politics. Second, flawed definition of policy aims and objectives presents a major obstacle for evaluations. Given the strong incentive of blame-avoidance, governments are encouraged to avoid the precise definition of goals because otherwise politicians would risk taking the blame for obvious failure"*.

Regarding the Brazilian regional policy, it appears that the issue of blame-avoidance is one of the possible reasons for the infrequent evaluations of regional development funds over the years. Indeed, if there is no evaluation, how can governments be blamed for failures? In addition, even if evaluations are conducted, governments avoid the blame because the objectives of the Brazilian regional development funds are not precisely defined.

Types of Evaluation

As noted earlier, evaluation can be defined in several ways - in terms of time (e.g., ex ante, ex post), levels of complexity (e.g., monitoring daily tasks or assessing impact on the problem) or as an internal or external evaluation. Different from Brazil, the European Union, since the reform of the Structural Funds in 1988, has created a system of appraising, monitoring and evaluating all EU-funded regional development interventions. Bachtler and Wren (2006, p. 143) explain that the evaluation of Structural and Cohesion Funds programmes has to be conducted at defined points in the programming cycle: *"ex-ante to verify targets; at the mid-point to establish the need for corrective action; and ex-post to assess outcomes"*. Although this can be a useful definition of types of evaluation, I prefer to discuss the types of evaluation by levels of complexity as the quality and the objectives of evaluation studies might be relatively uneven and diverse. Therefore, I follow the definition of Bartik and Bingham (1995) who look at evaluation as a continuum moving from the simplest form of evaluation, monitoring daily tasks, to the more complex, assessing the impact on the problem, as illustrated in Diagram 4.2.

Diagram 4.2 . Types of Evaluation by Levels of Complexity



Note: Bartik and Bingham (1995).

Evaluation is divided into six levels ending with a judgment if the policy (or a specific program) works, i.e., solved the problem or at least reduced it. Bartik and Bingham (1995) point out that there is a tendency for governments to prefer process evaluation (monitoring daily tasks, assessing program activities and enumerating outcomes) as this lower level of evaluation only provides information about how to improve a program, rather than assess if the program is actually successful (e.g., creates jobs), which is the role of the outcome evaluation. Table 4.1 summarises the function of each type of evaluation by means of enumerating several questions that each type of evaluation has to answer¹⁸.

Table 4.1. Function of each Type of Evaluation

Type of evaluation	Question that each type of evaluation has to answer
(i) Monitoring daily tasks	<i>"Are contractual obligations being met? Are staff members working where and when they should? Is the program administratively sound? Are daily tasks carried out efficiently? Are staff adequately trained for their jobs?"</i>
(ii) Assessing program activities	<i>"What activities are taking place? Who is the target of activity (businesses, cities, etc.), and with what problems or needs? How well is the program implemented?"</i>
(iii) Enumerating outcomes	<i>"What is the result of the activities described in the process evaluation? What happened to the target population? How is it different from before? Have unanticipated outcomes occurred and are they desirable? Have program objectives been achieved? How are the program recipients different from the way they were before?"</i>
(iv) Measuring program effectiveness	<i>"What would have happened in the absence of the program? Does the program work? What are the other factors that may have contributed to changes in the recipients? To answer these questions a cause and effect relationship must be established between the program and the outcome. Did the tax abatement 'cause' an increase in employment in the target company?"</i>
(v) Costs and Benefits	<i>"Do costs of the program outweigh the benefits of the program?"</i>
(vi) Assessing the impact on the problem	<i>"What changes are evident in the problem? Has the problem been reduced as a result of the program? What new knowledge has been generated for society about the problem or the ways to solve it?"</i>

Note: Bartik and Bingham (1995: 2-3).

As pointed out by Bartik and Bingham (1995), these six levels of evaluation provide a framework for assessing the quality of evaluations. To demonstrate that

¹⁸ These questions were extracted from Bartik and Bingham (1995: 2-3).

a program (or policy) accomplishes its targets, the evaluation must be at the highest levels: measuring effectiveness (e.g., it actually does create jobs) or assessing impact (e.g., there has been an improvement in the problem situation). Furthermore, simply because a program has been shown to be both substantively effective and has solved the problem, that does not mean that it should have ever been implemented. A cost-benefit analysis needs to be carried out to show that the program benefits outweigh its costs. Regarding the Brazilian regional policy, evaluations could suggest, for instance, that the regional development funds create jobs and ultimately reduce regional inequalities. However, it is still necessary to demonstrate that the program is cost effective.

CONCLUDING REMARKS

The paper reviews the theoretical rationale and the background of the Brazilian regional development funds (FNE, FNO and FCO) as well as the evaluation literature on them. In addition, it shows evidence that regional development funds in Brazil are, indeed, rarely evaluated. In fact, only two papers about the theme were found in the selected journals over 2000-2009.

Despite some changes in Brazilian regional development policy, one issue seems to remain unchanged: the lack of outcome evaluation. This absence of empirical evaluation has limited the analysis of policy outcomes. Additionally, PNDR reliance on macro-data (e.g., GDP), where causation is difficult to prove and where counterfactual evidence is not developed, has prevented, and will continue to prevent, the debate from increasing our knowledge with its results, from discerning between good and bad practices, and from identifying the elements of the policy that should be improved.

Moreover, it is important to enumerate some steps to overcome this lack of regional development policy evaluation in Brazil. In the short-term, the government should make disaggregate data of resource allocation of the regional development funds available to the public. In the mid-term, it is important to demonstrate to the public administrators and legislators the benefits and costs of more rigorous outcome evaluations. As noted by Bartik & Bingham (1995), it is difficult to get people to do something that has not been done before. In addition, they argue that once "policy makers have seen that a high quality evaluation of economic development programs can help improve the programs's performance and political viability, the interest in economic development evaluations should increase" (BARTIK & BINGHAM, 1995, p. 26). In the long-term, it is necessary to begin a wide debate about the actual causes of regional inequalities in Brazil and the formulation/choice of the best instruments to deal with them. Concerning this debate, the regional development policy has to define more precise targets and a system of appraising, monitoring and evaluating outcomes of all designed interventions. Some thoughts about how to evaluate Brazilian regional development funds in the short-term are offered below.

For instance, with municipal data it is possible to follow the evaluation strategy of some papers discussing the outcomes of European Union regional policy, such as in Dall'erba (2005), Leonardi (2006), and Esposti & Bussoletti (2008), that estimate the impact of the EU-funds on regional economic growth. In addition, a more sophisticated evaluation can be produced when dealing with the endogeneity problem, given the fact that the regional funds are not allocated randomly but are conditional on GDP (DALL'ERBA & LE GALLO, 2008). If regional development fund information is available by municipality and sector (e.g., agriculture, industry), it is possible to follow Rodríguez-Pose & Fratesi (2004)'s strategy and show the impact of different types of support on regional economic growth.

With firm-level dataset it is possible to improve the work done by Silva *et al.* (2009) which assessed the effectiveness of the Brazilian regional development funds using propensity score estimates of firms that received loans and of others that did not between 2000 and 2003. This kind of sophisticated outcome evaluation can answer the following question: Did the subsidized loans 'cause' an increase in employment (or wages) in the target firms? Indeed, Silva *et al.* (2009) attempt to answer this question, but it can be improved in several ways. For instance, it is possible to find "variables that can be used as 'instrumental variables' to control for the non-random selection of firms for participation in the program" (BARTIK & BINGHAM, 1995, p.23). Moreover, with firm-level data, other methods of evaluation can be used such as fixed effects, differences-in-differences and regression discontinuity designs (ANGRIST & PISCHKE, 2009). Recently, Resende (2012) uses first-differences estimates to measure the impact of the Northeast regional fund (FNE) industrial loans on employment and labour productivity growth at the micro- (firm) level and on gross domestic product (GDP) per capita growth at macro- (municipalities, micro-regions and spatial clusters) levels for the 2000–2003 and 2000–2006 periods.

Finally, it is worth noting that the evaluation of regional development funds in Brazil conducted by Silva *et al.* (2009), Soares *et al.* (2009) and Resende (2012) only focuses on the firms that can be traced in RAIS during the period under analysis. However, most of the FNE, FNO and FCO loans (approximately 60%) are granted to individuals who have small farming businesses in the informal sector, and for this reason, they are not covered by RAIS, which is the source of information for that evaluation. The formal rural firms found in RAIS are few and are not statistically representative of the FNE, FNO and FCO rural population. The government still needs to formulate a specific survey to cover the individuals and small rural businesses in the Northeast, North and Central-West to evaluate this important targeted population.

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