



Policy Brief on economic impact assessment of entrepreneurship policies

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In this policy brief we apply the Geographic Macro Regional (GMR)-Europe economic impact assessment model (extended with the REDI index) to account for direct and indirect economic impacts of different entrepreneurship development policies both at the national and regional levels. We argue for the use of economic impact assessment models in the design and ex post evaluation of entrepreneurship development policies. The capabilities of the GMR-Europe model are illustrated by policy simulation examples for three European countries: Germany, Hungary and Italy.

Introduction:

On the basis of pure expectations and without detailed economic modeling of the impact mechanism behind entrepreneurial development, policy makers can have only a partial view on the expected impacts of entrepreneurship support programs. Thus in order to objectively identify the extent of the economic impacts of potential development policies a standardized but also sophisticated methodological approach is required.

In this policy brief we apply the GMR-Europe economic impact assessment model (extended with the REDI index) to account for direct and indirect economic impacts of different entrepreneurship development policies both at the national and regional levels. We argue for the use of economic impact assessment in entrepreneurship development policies illustrated by the examples of three European countries.

A common regional policy problem can be stated as: “What are the costs of an

entrepreneurship policy that targets national growth in terms of regional convergence?” And, alternatively: “What are the costs of an entrepreneurship policy targeting regional convergence in terms of a loss in economic growth?” And related: “Are there country-specific differences in the impacts of the two policies?”

From our simulations we learned with respect to the growth focus policy scenarios that country optimization of entrepreneurship policy becomes successful to promote growth if high REDI change occurs in regions where large human capital stock is paired with high entrepreneurship levels.

Regarding the convergence-oriented policy we saw that a focus on entrepreneurship support in underdeveloped regions more efficiently promotes growth in generally less developed countries.





Section 1: methodology

The GMR modeling framework was established and has been continuously improved to better support development policy decisions by ex-ante and ex-post scenario analyses. The focus of the GMR approach is on policy instruments like R&D subsidies, human capital development, entrepreneurship policies or the promotion of innovation-related collaboration of actors. A novel feature of the GMR approach is that it incorporates geographic effects (e.g., agglomeration, interregional trade, migration) while both macro and (sub-national level) regional impacts of policies are simulated in the model system. Entrepreneurship policy impact assessment became possible in GMR-Europe by the integration of the REDI (Regional Entrepreneurship and Development Index) into the model structure. Changes in REDI indicate the effects of policies on regional entrepreneurship levels. Understanding economic development, however, requires a broader, more general analysis of economic circumstances and processes. The GMR-Europe model incorporates several interrelated mechanisms through which initial REDI changes result in regional, national and EU-level economic effects.

Economic impacts of entrepreneurship are determined by a number of important factors. First, the initial *level of REDI* is crucial in terms of economic growth since an additional 10% increase in REDI results a higher absolute change in already entrepreneurially developed regions. This will increase productivity more intensively. Second, the level of *human capital* in regions also plays a crucial role in the determination of how effectively entrepreneurship can influence *productivity*. Furthermore, the accumulation of human capital over the long-run generates additional benefits for regions. Higher levels of human capital enhance the efficiency of

entrepreneurship in the long-run which increases productivity even when entrepreneurship supports are exhausted. Third, entrepreneurship development will trigger *investment*, which will further promote economic growth in the long-run. Fourth, changes in economic growth will influence *migration*, which in some regions can be a further source of growth while for other areas it can be a leakage of resources. The relative size, and direction of all those forces will eventually determine the economic impacts on regions and nations.

Section 2: results and conclusions

We explore the growth and convergence effects of entrepreneurship development policies using the REDI index and the GMR-Europe economic impact assessment model. Following the Penalty for Bottleneck method we set up three scenarios for three selected countries in the EU: Germany (representing Northern Europe), Hungary (a country from Central Europe) and Italy (a southern European country).

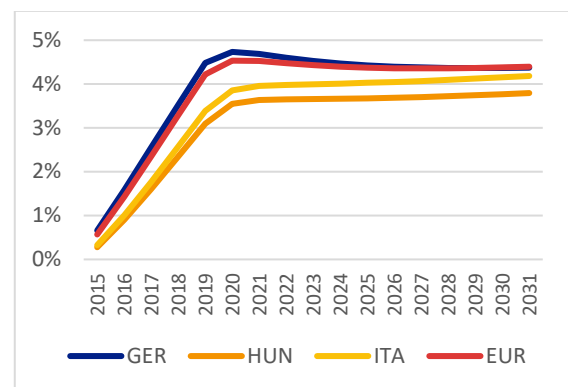


Figure 1: The national impact on value added in case of the uniform solution

In the basic scenario we allocate additional efforts (resources) in the optimal way among the pillars (determining factors) of the entrepreneurship development index in each region to reach uniformly a 10% increase in REDI. This is called the uniform solution.





In the second, policy optimization case in each country we start with the level of resources of the “uniform” solution and select those regional distribution patterns, which maximizes country averages of the REDI index.

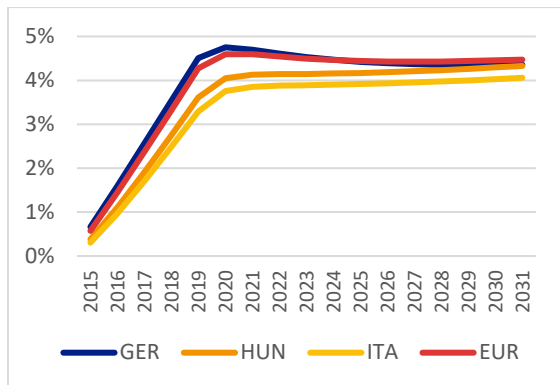


Figure 2: The national impact on value added in case of the country optimization

Finally, in the last scenario additional resources for each country are taken again from the uniform solution and used to improve the REDI score of the poorest regions of those three countries until the resources are exhausted. Economic impacts of the respective entrepreneurship policies are investigated at the regional, national and EU levels. Economic impacts are measured in terms of gross value added (GVA).

The results of our simulations extend our knowledge on the efficiency of entrepreneurship policies in the growth-convergence axis in two dimensions

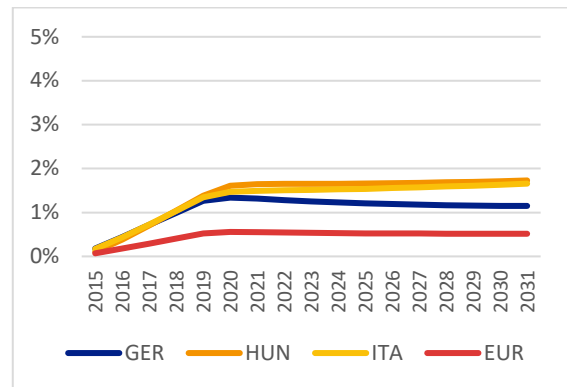


Figure 3: The national impact on value added in case of poor regions scenario

First, with respect to the growth focus policy we learned that country optimization of entrepreneurship policy becomes successful to promote growth if high REDI change occurs in regions where large human capital stock is paired with high entrepreneurship levels. Considering the factors that influence the dynamic impacts (human capital growth, interregional trade, migration, the interplay of employment and capital changes) the combination of all those components results in further boost in economic performance. Otherwise, the lack of one or more of those components can overcompensate the total effect of policy interventions, as it happens in the case of Italy. However, promoting growth by country optimization does not necessarily imply the emergence of costs in terms of convergence. While the Hungarian experience supports the generally expected growth-convergence trade-off (with a 1.25% cost in terms of increasing inequality) in Germany and Italy a slight convergence is materialized.



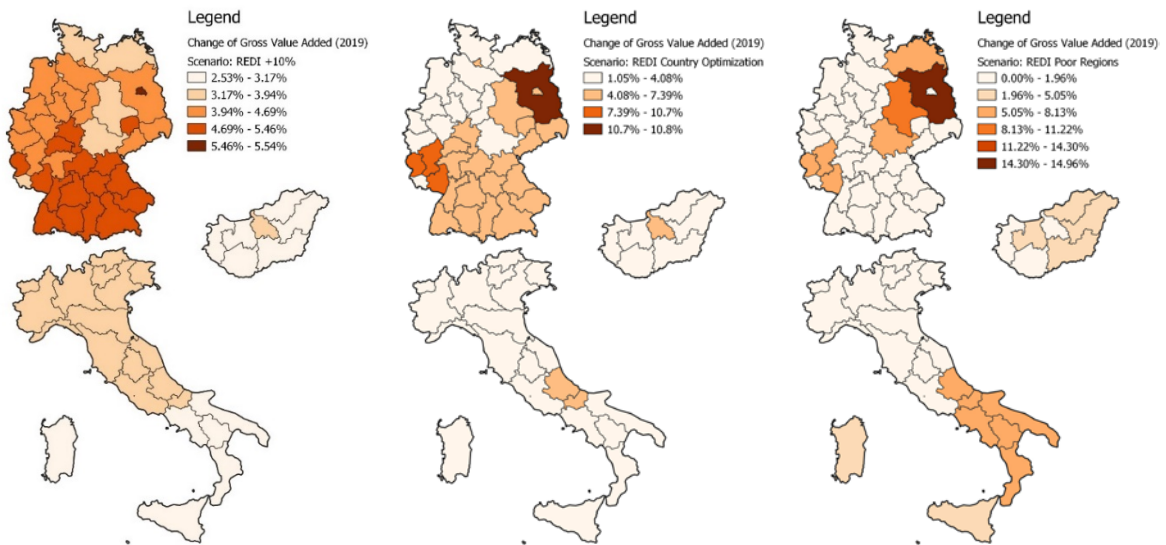


Figure 4: Regional impacts on value added in case of the uniform solution (left-hand pane), country optimization scenario (middle-hand pane) and poor regions scenario (right-hand pane)

Second, regarding the convergence-oriented policy we experienced that a focus on entrepreneurship support in underdeveloped regions more efficiently promotes growth in generally less developed countries (Hungary and Italy). This happens partially because the same rate of growth of REDI costs less “effort” in those countries and partially because in the long run, these regions are characterized by higher growth rates of human capital, which enables them to capitalize more on the same

change of REDI than lagging regions of a more developed country. We observed increasing convergence in the three countries, which is in accordance with expectations. However, there are country-specific differences in this respect as well: the effect is the highest in Hungary followed by Germany and Italy. The growth cost of the convergence policy is around 2.5 % with some variation across the countries.

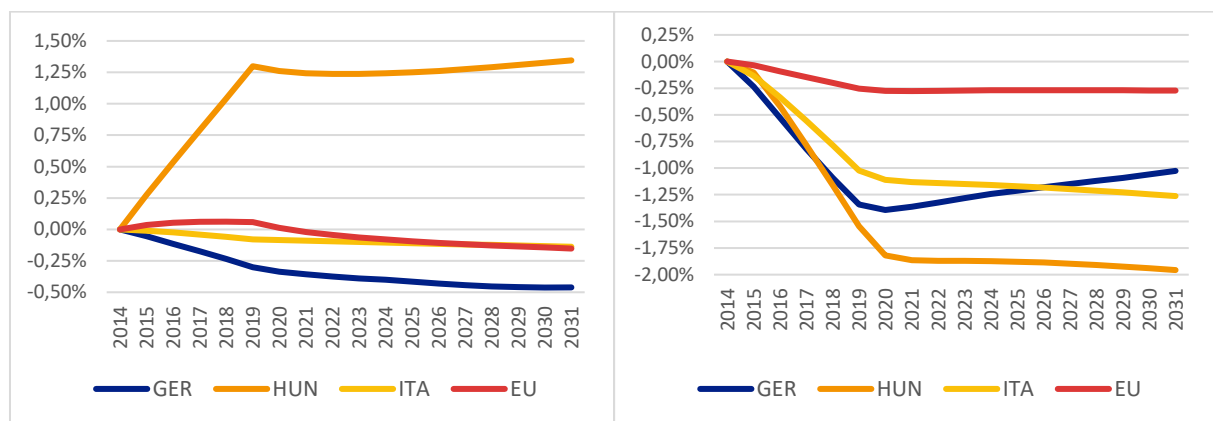


Figure 5: The impact on convergence: country optimization (left-hand pane) and poor regions (right-hand pane)





Section 3: Implications and recommendations

Based on our simulations we ended up with the following policy recommendations:

1. In general, successful high-growth entrepreneurship development can occur only if additional support is allocated to regions characterized both by high initial level of entrepreneurship (REDI) and skilled human capital. In this case however regional economic divergence is expected to increase.
2. Promoting entrepreneurship in underdeveloped regions can successfully decrease regional inequalities, and increase convergence at the cost of lower national economic growth. A similar pattern can also be expected and observed among member states within the European Union.
3. There is no clear 'best practice' recipe of entrepreneurship development. Countries/regions with different levels of economic and entrepreneurial performance can be developed by focusing additional support on different sources (pillars) of entrepreneurship, as indicated by the REDI index.
4. It needs to be clearly determined whether regional convergence or economic growth is the main objective function of policy interventions. Areas with high potential for entrepreneurship development do not necessarily coincide with areas with high potential for economic growth. Policy makers should treat economic and

entrepreneurial development together to find an optimal balance between the two targets and come up with the best solution. As our study highlights such a complex decision can be supported by economic impact assessment modeling.

Sources or further reading:

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