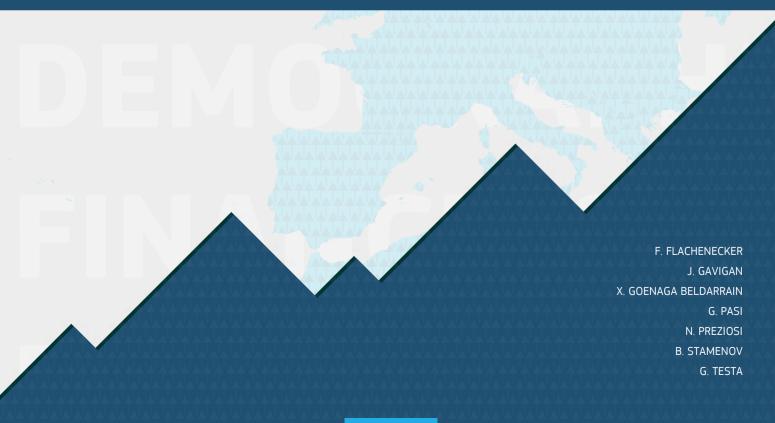


ANNEX 4.12 TO THE JRC TECHNICAL REPORT

High Growth Enterprises:

demographics, finance & policy measures

FACTSHEET - HUNGARY (HU)

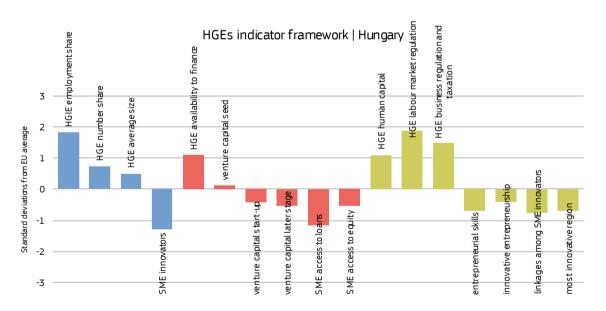


1. Executive summary

The share of HGEs* in HU is significantly above the EU average, in a context of generally favourable regulatory, finance and human capital framework conditions, but still underdeveloped loan, equity and venture capital markets. A characteristic feature of Hungarian HGEs is their relatively large size and, related, their large employment share. This may be caused by multiple external factors. On the positive side, in the strongly internationalised Hungarian economy, high growth may be strongly related to integration into global value chains. Such integration may primarily be an option for relatively large firms. On a more negative side, most of the smaller firms may not be growth-oriented or lack the capabilities to innovate and enter new markets. In policy terms, the large employment share of HGEs shows that policies aimed at such firms may have a relatively large aggregate effect.

A clear challenge for the HU policy framework is the undersupply of innovative projects with a clear high-growth potential, especially compared to the amount of funds allocated to this aim from EU sources. While the state has made a larger effort to help venture capital markets develop often via hybrid funds including banks or other private investors, this undersupply of projects is an important challenge. For example, in the first round of the Gazella programme, the amount of applications was around a third of the available funding. Therefore, all these policies face a trade-off between supporting relatively few firms and widening the net with the risk of supporting not very innovative firms with lower growth prospects. The subsidised provision of venture capital either by state-owned or hybrid funds have created a venture capital "market" with similar volumes to Western European economies. While it is unlikely that these would crowd out private investment, it is not clear how the market would operate without continued government intervention. While there are few assessments of the new tools, there are some signs of over-provision of these funds and a competition between different funds subsidised by the state for a limited number of innovative projects.

2. HGEs indicator framework

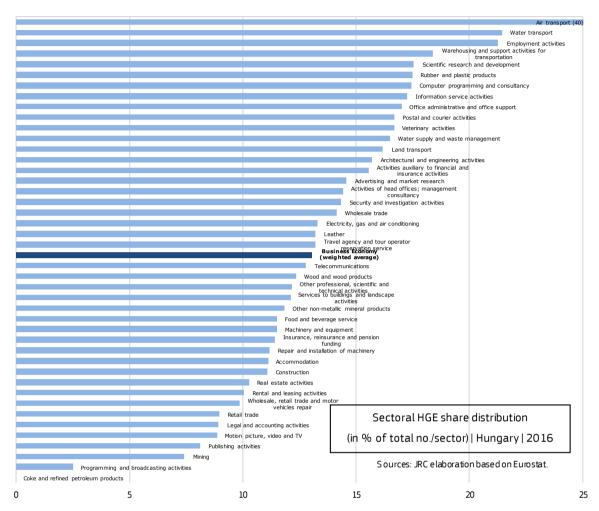


- HU performs above the EU average in several indicators, especially in terms of the HGE share and average size, employment share.
- The emergence of HGEs is favoured particularly by the availability of finance and human capital, as well as the overall regulatory framework.

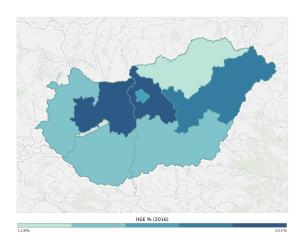
^{*} In line with Eurostat, HGEs are defined in this factsheet as enterprises having (i) experienced an annualised average employment growth rate of 10% per year over a three-year period and (ii) at least 10 employees at the beginning of the growth period. The importance of HGEs is directly linked to their substantial contribution to employment growth, productivity improvements, economic renewal and innovativeness.

 HU could further improve the conditions for HGEs by improving the loan, equity and venture capital markets, fostering the overall development of innovative SMEs and their linkages and by supporting the entrepreneurial skills available across the working-age population.

3. Firm demographics and sectoral decomposition



- The average share of HGEs in HU is 13% across the business economy, ranging from 2.5% in programming and broadcasting activities to 40% in air transport.
- In HU, among innovative industries, HGEs' employment share is the largest in such services as air transport, employment activities, computer programming and information service activities.
- HU has a larger HGEs share than the average European country most industries. The relatively high aggregate share of Hungarian HGFs is not a result of industry composition but it prevails within industries.



HGE share (% of active enterprises) across

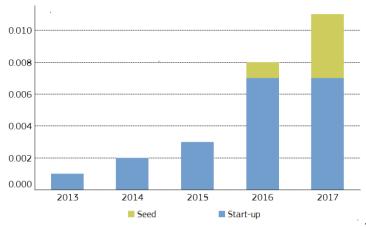
NUTS2 regions | 2016 | Hungary

Sources: JRC elaboration based on Eurostat

- In 2016, the share of HGE (as % of active enterprises) was highest in the regions of Central Hungary, showing a strong concentration of HGEs in Budapest and particularly the surrounding regions.
- The presence of HGEs was also significant in other Hungarian regions, with the important exception of Northern Hungary.

4. Financing HGEs and start-ups: the role of venture capital

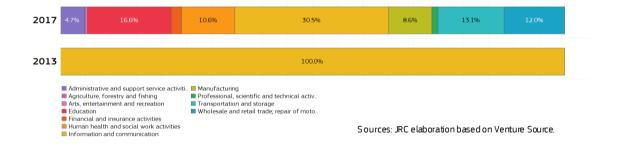
Venture capital by stage of financing (in % of GDP) | Hungary | 2013-2017



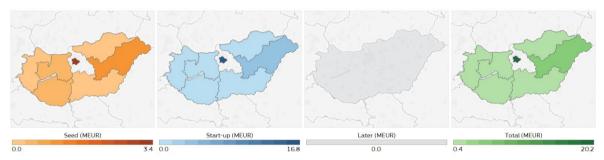
Sources: JRC elaboration based on Venture Source.

- Venture capital investments as a share of GDP remain low compared to the EU average, despite having increased significantly since 2013. A distinct feature of HU (and the CEE region in general) is that it relies much more heavily on the public funding than venture capital markets in E15 countries.
- The share of start-up ventures has increased sharply, despite a slight decline in 2017. The state has made a larger effort to help venture capital markets develop often via hybrid funds including banks or other private investors.

Sectoral distribution of VC investment (in %) | Hungary | 2013 & 2017



- The sectoral distribution of venture capital investments is diversified, but certain sectors receive most investments, such as ICT, education, transportation and storage, and wholesale and retail trade.
- The sectoral distribution of venture capital investments can change substantially across time.



Sources: JRC elaboration based on Venture Source.

- Over the period 2013-2017, there is a strong concentration of venture capital in the Budapest region across all stages of financing.
- The seed stage funding is mostly distributed across regions in HU. Start-up funding is also evely distributed across regions.

5. Finance-related policy measures

| Name | Scope | Eligibility | Year | Assessment |
|--|---|--|---|---|
| Hungarian multi (GINOP 1.2.7) | Financial and non- financial support to help firms with high growth potential to introduce new technologies and grow | operate in industries prioritized in the Irinyi plan HUF 500 mn revenue at least 5% annualized growth for 2 consecutive years 'pre-certification' | 2017, 2019 (?) | Few firms applied and won in the first round Target group may be widened |
| Magvető Fund (GIN OP 8.1.3/A) | Hybrid VC Fund | prioritise industries in S3 innovative, potentially HG all VCstages | Investment decisions 2017-2023 Investments should be for 2-7 years | no assessment ye t, for evaluation of previous pro grams see text |
| "New JEREMIE" funds (GINOP 8.1.3/B) | 7 hybrid VC funds | prioritise industries in S3 innovative, potentially HG all VCstages | Investment decisions 2018-2023 Investments should be for 2-7 years | no assessment ye t, for evaluation of previous programs see text |
| ICT VC Fund (GINOP 8.2.3) | VC fund | ICT start-upsinnovative, potentially HGall VC stages | Investment decisions 2017-2023 Investments should be for 2-7 years | no assessment ye t, for evaluation of previous programs see text |

- An important characteristic of Hungarian financing programmes is that the supply of funding is likely to exceed
 the demand of HGEs. This is reflected by the poor performance of firms funded by the previous round of
 subsidized funds but also from the under-subscription of the GAZELLA GRANT.
- Consequently, while these programs theoretically aim at innovative high growth firms, in practice they are likely to
 finance other firms or not very viable projects. For example, as mentioned, in the GAZELLA GRANT the definition of
 a HGE, diverging from the Eurostat definition of HGE, seems to require that employment, growth or exports
 growing by at least 3% in two subsequent years in a 3-year period.

- In contrast, there are a number of support measures which are not aimed specifically at HGIEs, but are easily accessible and probably more attractive for some firms. For example, the Central Bank provides investment subsidies while there are innovation grants available for all SMEs.
- The assessments of the previous rounds of subsidized venture capital have shown modest positive results for the subsidized firms. At the same time, these funds have been criticized for not being transparent and, in some cases, used inappropriately.
- There is also a more fundamental contradiction between the market logic of VC funds (flexibility, substantial risk taking, supporting firms with the best prospects) and the logic and rules of state intervention (more rigid rules, less risk taking, investing into projects which would be less likely to receive funding from private sources).

Annex: HGEs indicator framework details

| Indicators | Details | Motivation | | | |
|---|---|---|--|--|--|
| HGEs indicators | HGEs indicators | | | | |
| HGIE employment share | Percentage share of employees among HGEs in 50% 'most innovative' industries relative to total employment (<u>EIS; 2018</u>) | Me a sures contribution of HGIEs to employment creation | | | |
| HGE number share | Percentage share of HGEs of total enterprises with at least 10 employees (Eurostat; 2016) | Me a sures how many firms are HGEs | | | |
| HGE average size | Average size of HGEs (employment definition); employees divided by number of HGEs ($\underbrace{Eurostat}_{}$, 2016) | Me a sures average size of HGEs, an indication for future job growth potential | | | |
| SME innovators | Share of SMEs with product, process, marketing or organisational innovations or innovating in-house among all SMEs (EIS ; 2018) | Existing SME innovativeness as predictor for future innovations | | | |
| Financing HGEs indicators | | | | | |
| HGE availability of finance | Percentage of HGEs considering the availability of finance is not an investment barrier (EIBIS; 2016-2018) | HGEs access to finance is considered a precondition for the development of HGEs | | | |
| Venture capital seed | Share of seed venture capital to GDP (Venture Source; 2017) | Venture capital is a relevant source of finance for potential HGEs | | | |
| Venture capital start-up | Share of start-up venture capital to GDP (Venture Source; 2017) | Venture capital is a relevant source of finance for potential HGEs | | | |
| Venture capital later stage | Share of later stage venture capital to GDP (Venture Source; 2017) | Venture capital is a relevant source of finance for potential HGEs | | | |
| SME access to loans | EIF SME Access to Finance Sub-index for loans, comprising the use and cost of loans (EIF; 2018). | SME access to loans is an important framework condition indicating the access to loans for HGEs | | | |
| SME access to equity | EIF SME Access to Finance Sub-index for equity, comprising use of equity and the sophistication of the equity market ($\underline{\text{EIF}}$; 2018) | SME access to equity is an important framework condition indicating the access to equity for HGEs | | | |
| HGEs framework conditions indicators | | | | | |
| HGE human capital | Percentage of HGEs considering the availability of staff with the right skills is not an investment barrier (EIBIS; 2016-2018) | HGEs access to human capital is essential for the development of HGEs | | | |
| HGE labour market regulation | Percentage of HGEs considering the labour market regulation is not an investment barrier ($\underline{\text{EIBIS}}$; $\underline{2016-2018}$) | HGEs may be constrained by existing labour market regulation | | | |
| HGE business regulation and taxation | Percentage of HGEs considering the business regulation (e.g., licences, permits, bankruptcy) and taxation is not an investment barrier (EIBIS; 2016-2018) | HGEs may be constrained by existing business regulation | | | |
| En tre p re neurial skills | Percentage of 18-64 population who believe to have the required skills and knowledge to start a business (GEM; 2018) | HGEs may require entrepreneurial spirit, skills and knowledge | | | |
| Innovative entrepreneurship | Ratio between improvement-driven and necessity-driven entrepreneurs hip ($\underline{\text{EIS}}$; $\underline{2018}$) | Countries with high relative prevalence of improvement-driven opportunity, and entrepreneurship tend to be primarily innovation-driven, thus conducive for HGEs | | | |
| Linkages among SME | Innovative SMEs collaborating with others, public-private co-publications and | Quality of innovations increases with collaboration and provides information on | | | |
| innovators | private co-funding of public R&D expenditures (EIS: 2018). | sophistication of SME innovation ecosystem, thus related to HGEs. | | | |
| Relative performance of most advanced region in the Regional Innovation Most innovative region Scoreboard within each Member State vis-à-vis the best performing regions across all other Member States (RIS; 2017). | | HGEs innovation ecosystems tend to be concentrated in most innovative regions/centres. | | | |

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