Berlin: a hub for startups but not (yet) for fast-growing companies

By Alexander S. Kritikos

Over the last 20 years, Berlin has developed into Germany's self-employment capital and into a startup hub. A large number of innovative companies have been launched. The city has become an internationally renowned magnet for creative startups. Mainly using official statistical data, the present report shows that the startup trend in Berlin is above average compared to other major cities in Germany while it is primarily driven by the high startup rates among non-Germans. However, with respect to turning startups into fast-growing companies, Berlin has room for improvement. Consequently, future policy measures should focus on supporting these types of companies. Possible measures include developing high-quality industrial sites, cutting red tape and providing fast-track administrative procedures in all business-related matters, improving recruitment processes for highly qualified employees, as well as further expanding the knowledge transfer between research institutes and the fast-growing companies.

Berlin is Germany's self-employment capital. Around 272,000 people—over 16 percent of the total labor force—were self-employed in 2014, at a time when the German average was only about ten percent (see Table 1). This has not always been the case. Shortly after German reunification, Berlin's ratio was still less than half this figure, close to the national average. The reason for this reversal of fortune: Berlin has the highest share of individuals venturing into self-employment compared to other German federal states. Measured by the number of business startups (as either the primary or secondary occupation) as a percentage of the total labor force, Berlin's startup propensity has been a good two percent for a number of years; the most recent German average is only 1.3 percent (see Table 2).[1]

Under certain circumstances, entrepreneurs can have a major economic impact on where their business is located. If the entrepreneurs manage to successfully launch their product, innovative technologies, or services on the market, and then turn their firm into a fast-growing company, they will create new jobs and contribute to economic growth and employment in a region. Moreover, new companies may challenge the incumbents, subsequently increasing the competitiveness of all companies remaining in the market. Consequently, young companies can simultaneously improve the productivity of firms and economies, thus accelerating structural changes.[2] These effects are particularly pronounced if the startups develop into companies with growth ambitions, which account for around one percent of each founder cohort in Germany.[3] At the same time, smaller companies can also not only positively impact economic growth and change, but productivity as well.

1 See M. Fritsch, A.S. Kritikos, and A. Rusakova, "Self-Employment in Germany: The Trend Has Been Increasing for Some Time," *DIW Economic Bulletin*, no. 3 (2012): 3–13.

2 See, for example, A.S. Kritikos, "Entrepreneurs and their Impact on Jobs and Economic Growth," *IZA World of Labor* 8 (2014).

3 See Ramboll, *Studie über schnell wachsende Unternehmen* (2012), report commissioned by the Federal Ministry for Economic Affairs and Energy (BMWi), Berlin.

Table 1

Self-Employment in Berlin and in Germany
Numbers in Thousands

	Berlin				Germany			
	wage employees	self-employed	total number of working people	self-employment rate	wage employees	self-employed	total number of working people	self-employment rate
1991	1,689	127	1,828	7.5	37,445	3,037	39,376	8.1
1994	1,609	154	1,833	9.6	36,076	3,288	39,571	9.1
1997	1,530	176	1,788	11.5	35,805	3,528	39,694	9.9
2000	1,471	180	1,720	12.2	36,604	3,643	39,730	10.0
2003	1,420	190	1,737	13.4	36,172	3,744	40,195	10.4
2005	1,434	220	1,777	15.3	36,566	4,080	41,150	11.2
2009	1,555	253	1,801	16.3	38,662	4,215	41,895	10.9
2010	1,569	264	1,806	16.8	38,938	4,259	41,887	10.9
2011	1,530	264	1,731	17.3	38,916	4,295	41,317	11.0
2012	1,570	270	1,752	17.2	39,206	4,315	41,430	11.0
2013	1,605	268	1,790	16.7	39,618	4,239	41,799	10.7
2014	1,644	272	1,824	16.5	39,942	4,192	42,032	10.5

Source: Mikrozensus.

Table 2

Business Registrations in Berlin and in Germany

	2011	2012	2013	2014	2015
Berlin					
startup rate in percent	2.3	2.4	2.3	2.1	2
business registrations					
in primary occupation	31,083	29,509	28,085	27,229	25,416
in secondary occupation	10,467	11,637	11,704	11,127	10,873
business registration (total)	41,550	41,146	39,789	38,356	36,289
Germany					
startup rate in percent	1.5	1.4	1.4	1.3	1.3
business registrations					
in primary occupation	401,459	346,412	337,929	309,891	298,546
in secondary occupation	241,689	241,197	248,882	251,116	248,703
business registration (total)	653,148	587,609	586,811	561,007	547,249

The self-employment rate is calculated in proportion to the number of employed persons in the previous Year, see Mikrozensus in Table 1.

Source: Business Registration Statistics, analyzed by IFM Bonn.

The remainder of this report analyzes the dynamic growth of Berlin's startup companies and shows how the conditions could be improved particularly for fast-growing companies in Germany's capital city.

Berlin: Germany's startup hub

Every year for the past five years, between around 37,000 and 42,000 businesses were established in Berlin (see Table 2). In a comparison of the three city-states, Berlin ranks ahead with a startup propensity of around two percent, compared to Hamburg at 1.6 percent and Bremen at 1.3 percent, according to the most recent figures available (see Table 3).[4]

Naturally, the quality of startups varies considerably. In addition, the statistics of business notifications also distinguishes between the registration of small businesses by individual founders and company registration. The latter are startups by legal entities, i.e., mostly corporations, set up as more economically active companies.

Berlin recorded around 7,000 company startups in 2013, the most recent year for which figures are available.[5] This corresponds to approximately 37 entities per 10,000

4 In a recent comparison of major cities, Berlin was also considerably ahead of Munich, Frankfurt, and Hamburg. See, for instance, BBB, *Metropolenvergleich* (2013).

5 See IBB, *Berlin aktuell: Gründungsboom in den Berliner Zukunftsbranchen* (Berlin: 2014).

Table 3

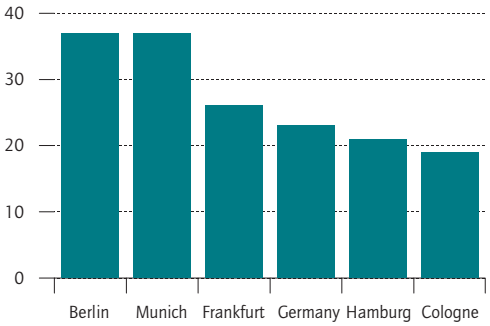
Business Registrations in the Federal city-states

	working population in 1,000	business registrations	startup rate in percent
Berlin	1,824	36,289	2.0
Hamburg	1,027	16,784	1.6
Bremen	373	4,397	1.2

Quellen: Gewerbeanzeigenstatistik, ausgewertet vom IfM Bonn, 2016.

Figure 1

Company registrations in different German cities per 10,000 individuals of the working population



Source: data of the IBB Berlin based on the business registration statistics for 2013, Mikrozensus; Calculations of DIW Berlin.

Berlin and München have the highest relative number of company registrations (related to the total number of the working population) than other German cities.

members of the labor force. Berlin managed to soar above the general trend in Germany: there were 23 startups per 10,000 members of the working population throughout the country as a whole. When we look at German cities, Berlin shares the number one spot with Munich (see Figure 1).

The structural shift toward services is also evident among startups. A total of 37 percent of all startups in Berlin are in three segments of the service sector; the corresponding figure for Germany as a whole was 34 percent (see Table 4). The construction industry also plays a key role here (at 24 percent for Berlin; 17 percent for Germany as a whole). The much higher share of the construction sector in Berlin is primarily driven by the large number

Table 4

Business Registrations in selected sectors in Berlin and Germany

	business registrations				company registrations			
	Berlin	shares in percent	Germany	shares in percent	Berlin	shares in percent	Germany	shares in percent
Construction industy	9,598	24	95,470	17	654	11	14,856	17
Other Services	5,653	14	59,465	10	550	9.3	4,212	4.9
Other Economic Services	5,608	14	77,327	13	555	9.3	7,083	8.1
Professional, technical and scientific services	3,558	8.9	59,351	10	699	12	10,927	13
Manufacturing industry	1,264	3.2	21,592	3.7	281	4.7	4,516	5.2

Source: business registration statistics; analyzed by BBB for 2013.

of solo startups, however. If we only take company startups in this sector into account, Berlin's share decreases to just under 11 percent, while Germany's share is still 17 percent (see Table 4).

Finally, what is striking is the large number of manufacturing sector startups in Berlin, amounting to just under 300 companies at the most recent count (see Table 4). This may be due to cluster effects, for instance, in Berlin-Adlershof where a particularly high number of industrial high-tech startups have been established.[6]

High startup propensity in Berlin driven by non-German nationals

If we distinguish between nationalities, it is clear that the number of startups in Berlin established by individuals without German citizenship is increasing, while those founded by Germans is falling. Almost 50 percent of startups in German are founded by foreigners living in Germany (see Figure 2).[7] Polish citizens account for most of these (most recently, just under 6,000 startups).[8] The startup propensity among non-German citizens is currently around 3.5 percent across all nationalities, while the startup propensity of German citizens living in Berlin is slightly less than one percent, which is similar to

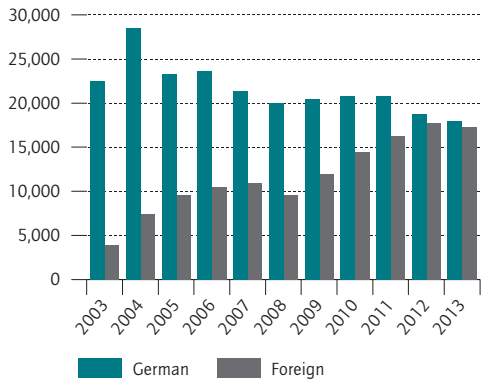
6 See DIW Econ, *Hightech für Berlin, die regionalwirtschaftliche Bedeutung der Technologiezentren in Adlershof* (Berlin: 2015).

7 See GUWBI, *Statistische Materialien zu Existenzgründung und Selbstständigkeit der Wohnbevölkerung mit Migrationshintergrund in Berlin* (Berlin: 2014).

8 See BBB, *Sonderauswertung Nationalitätenvergleich* (Berlin: 2013).

Figure 2

Business registrations by nationalities



Source: Office of Statistics Berlin-Brandenburg; Federal statistical office; calculations of the GUWBI (2014).

In Berlin currently almost every second business is ventured by a non-german person.

the national average.[9] The high startup propensity in Berlin is, therefore, an effect sustained by Berlin's foreign residents.

Plenty of innovative startups ...

If all innovative startups are taken together—on the basis of the list of research-intensive industries and knowledge-intensive services compiled for the Commission of Experts for Research and Innovation (EFI)—Berlin also occupies a leading position.[10] In recent years, around 6,500 companies were founded in sectors with high innovation potential,[11] corresponding to one in six startups or around 35 startups per 10,000 members of the labor force. This puts Berlin more or less on a par with Munich and Hamburg again.[12] There is no visible difference between the startup propensity of Germans and other nationals in Berlin in this segment. According to the most recent figures, 18 percent of these particularly innovative companies were founded by foreign nationals,[13] again mostly by individuals coming from Poland.

The majority of recent startups are in the fields of information and communications technologies (ICT), media and creative industries, followed by the fields of transport, mobility, and logistics, energy technology, the health sector, and optics.[14] The continued positive trend in the fields of ICT and (albeit at a much lower level) optics should also be noted.[15]

... but few fast-growing companies

Startups have a particularly positive impact on the local economy if they develop into fast-growing companies, known as gazelles.[16] Around four percent of all gazelle companies founded in Germany in the past 20 years are based in Berlin,[17] a below-average figure in view of the fact that 7.5 percent of all company startups and 6.5 percent of all innovative startups have been in Berlin. Since new companies are particularly mobile while they are still small, it cannot be ruled out that some of Berlin's potential gazelles relocated elsewhere once they were established.[18]

The gazelles in Berlin are primarily research and development (R&D) companies in the fields of natural sciences, engineering, agricultural sciences, and medicine. A second focus area is e-commerce, as the most recent flotations and venture capital investments have shown.[19]

Favorable framework conditions needed to attract fast-growing companies

Innovative companies are highly mobile and there is global competition to attract them. Consequently, good institutional frameworks are particularly relevant for these companies. What is important here, *inter alia*, is the transfer of technology and know-how between the research community and industry, as well as the provision of venture capital. A key role is also played by other business location factors, such as the characteristics of the labor market and the local implementation of administrative regulations.[20] A cursory look at the framework

9 See Michael Fritsch, Alexander S. Kritikos, and Alina Rusakova, "Who Starts a Business and Who is Self-Employed in Germany," *IZA Discussion Paper* 6326 (Bonn: 2012).

10 See http://www.e-fi.de/, accessed June 30, 2016.

11 See IBB, *Berlin aktuell*.

12 Own calculations on the basis of data from IBB, *Berlin aktuell*.

13 Own calculations on the basis of the 2015 statistics of business notifications. This is approximately the same as the share of the population of Berlin accounted for by foreign nationals.

14 For an in-depth account of innovative startups in Berlin, see, for instance, IBB, *Berlin aktuell,* or McKinsey, *Berlin gründet* (Berlin: McKinsey, 2013).

15 See IBB, *Berlin aktuell* .

16 The OECD defines fast-growing companies as those with at least ten employees in the base year that then create an average of 20 percent more jobs per year over the next three years. Consequently, the number of employees must have increased by 73 percent after three years.

17 See Ramboll, *Studie über schnell wachsende Unternehmen*.

18 In this context, Berlin's *Investitionsbank Berlin* (IBB) even refers to the "risk that Berlin is attractive as a 'nursery' for startups, but that the companies founded then are leaving the city as soon as they are operating at a profit." See IBB, *Berlin aktuell.*

19 See McKinsey, *Berlin gründet.*

20 See OECD, *Small Business, Job Creation and Growth: Facts, Obstacles and Best Practice* (Paris: 1997) as well as European Commission, *A policy for Indus-*

conditions for high-growth startups in Berlin makes the following points clear:

The city has an extensive scientific and research landscape that supports the transformation of research findings and inventions into product ideas and innovations, for instance, the research hubs of Berlin-Buch and Berlin-Adlershof. This is also reflected in the figures: Berlin has an above-average rate of expenditure on public research and development institutions (amounting to 400 euros per inhabitant in 2013).[21]

Case study: Berlin-Adlershof research hub

Not only is the Berlin district of Adlershof home to a range of science and research centers conducting government-funded basic research, it is also an integrated business, technology, and media park. Adlershof houses a total of nine departments from the Humboldt-Universität Berlin's Faculty of Mathematics and Natural Sciences and Faculty of Life Sciences, as well as 11 non-university research institutes from, for instance, the Leibniz and Helmholtz Associations. It is also the location of a number of technology and startup centers in sectors compatible with the aforementioned institutes' areas of research, including optical technologies, biotechnology and environment, microsystems and materials, ICT and media, as well as renewable energy and photovoltaics.

In addition to publicly funded basic research, the science and technology park also houses 500 high-tech startups operating in the five technology aforementioned sectors. These companies are able to benefit directly from the knowledge transfer facilitated by the research cluster located there, in the aforementioned optics field, for instance. The startups in Adlershof's technology centers have shown positive growth in recent years. They currently employ over 6,000 people and, in 2013, had a gross value added of just under 400 million euros accompanied by rising growth rates.[22] Some of the startups in the Adlershof Technology Park have become gazelles in the sectors where Berlin enjoys a locational advantage thanks to its easy access to scientific research.

However, the Adlershof site could ideally be better linked to the rest of Berlin's commercial infrastructure. For example, so far there has been very little networking between the more B2B-oriented cluster in Adlershof and the fast-growing group of B2C companies located in Berlin's city center. Further, compared to other large cities, Berlin has so far seen only a small number of established multinational companies set up local research offices designed to benefit from the research output of Adlershof and other research sites in Berlin.

Venture capital investment in Berlin doubled since 2014

During and after the launch of a new product, access to venture capital is crucial for firms with rapid growth potential. This growth phase is capital intensive and, consequently, access to capital is a prerequisite for the sustainability of the startups. On the whole, access to venture capital in Berlin is improving.[23]

Recent data indicate that, in 2015, venture capital investment in Berlin had increased sharply compared with other German (and European) cities, doubling since 2014.[24] This puts the city ahead of London, Stockholm, Paris, Hamburg, and Munich; it accounts for 14 percent of all venture capital investment in Europe. Berlin's young companies received over 2.1 billion euros, which is the equivalent of around 70 percent of the total volume of venture capital in Germany.[25]

Despite this positive development, there continues to be a financial shortfall in companies' initial growth phase, directly after startup, which has been bridged only in a small number of cases.[26] While the lion's share of venture capital was invested in consumer services and e-commerce,[27] the Adlershof cluster, which is of importance to the gazelle companies but much more B2B oriented, had less access to venture capital investment.

High bureaucratic hurdles for young enterprises

The administrative environment also plays a crucial role for fast-growing companies. It is precisely the entrepreneurs establishing innovative startups who tend to prefer locations with fast and unbureaucratic processes and an attractive institutional framework.

Berlin has only an indirect impact on national regulatory arrangements but it can influence how quickly and in what form regulatory requirements are implemented. Here, Berlin is lagging behind other startup hubs;

trial Champions: From picking winners to fostering excellence and the growth of firms, (Brussels: 2006); and Compass (2015).

21 By way of comparison, the average corresponding figure for Germany as a whole is 150 euros per inhabitant, with Hamburg spending 270 euros per inhabitant, for instance. See Federal Statistical Office (2015).

22 DIW Econ, *Hightech für Berlin.*

23 Compass (2015).

24 Ernst & Young, *Start-up Barometer Deutschland* (Berlin: 2016).

25 In addition, there is also the supporting funding for investment by young enterprises within these thematic fields, provided by government development banks such as IBB. This amounts to an additional 220 million euros.

26 McKinsey, *Berlin gründet.*

27 Ernst & Young, *Start-up Barometer.*

according to recent surveys, it still takes up to ten days simply to set up a company, while in other countries this can be done within 24 hours or even online within an hour. Overall, there is substantial evidence that business-related administrative processes take much longer in Berlin than in other startup cities.[28]

Bottlenecks in supply of highly qualified employees

Another key prerequisite for fast-growing companies to choose a specific location is the quality of the local labor market and the ready availability of a well-trained labor force without too much red tape.[29]

Here it is obvious that Berlin's productivity development is still lagging a long way behind other German metropolitan areas.[30] On the one hand, this indicates a lack of local highly qualified employees. On the other hand, Berlin's consistently relatively high unemployment, including academics, suggests a high labor supply.[31] It remains unclear, however, to what extent these unemployed academics fulfill the requirements of young, innovative, and fast-growing companies.

Thus, the fast-growing companies in Berlin especially depend on recruiting individuals from other countries. Currently, over 40 percent of all startup employees come from abroad, predominantly from other EU countries.[32] For these individuals, with its (still) affordable rents and high quality of life, Berlin is an attractive location, despite the relatively low wages.

Individuals from countries outside the EU still encounter major difficulties obtaining a German work permit. On average, the immigration procedure in Berlin takes three months to complete,[33] but innovative enterprises report cases where non-EU citizens had to wait far longer before receiving their work visa.[34] Frequently, legal entry and the process of acquiring a residence permit are even more protracted for the families of these employees.

Berlin's recently created Business Immigration Service offers a glimmer of hope for a solution to this problem.

Conclusion

Berlin is a dynamic startup hub. This dynamic growth relies largely on Berlin's non-German residents. In terms of innovation-driven startups in the research-oriented industries and knowledge-intensive services, Berlin shares the number one spot with other metropolitan areas, such as Munich and Hamburg. When it comes to gazelles—the fast-growing companies—Berlin is lagging behind. Therefore, one objective should be for Berlin to retain as many dynamically growing companies as possible or, better still, to attract more companies of this type.

Although the city is already endeavoring to support innovative startups, in order to become an attractive location,[35] a brief overview of the factors impacting Berlin as a location for startup companies suggests that there are various measures that could improve the current situation. Policy measures include providing high-quality commercial spaces and industrial sites as well as improving the service dimension of all business-related administrative procedures, by providing fast track administrative processes and by increasingly switching to online processes.

Apart from improvements at the administrative level, other key measures are to further develop Berlin as a research location and to strengthen its IT sector. The ten-point agenda developed by the "Berlin unit for digitalization" proposes, *inter alia*, the appointment of 30 professors. To further strengthen this measure with the objective of establishing common labs fostering the digitalization of the manufacturing industry (Industry 4.0) in the future, the Berlin government could complement every privately funded professor position with a second one using public funding. This would also facilitate better networking with innovation-based startups and fast-growing companies.

Further, active location marketing is needed to attract potentially fast-growing startups, those being currently located in Berlin or even elsewhere, for instance, when these companies leave the technology parks and are searching for new locations. One option would be to reward the city administration in the form of appropriate monetary incentives for successfully attracting companies to the city. Second, policy-makers should also focus more on encouraging major multinational companies to locate their research departments in Berlin. We have

28 For these and other examples, see World Bank, *Ease of Doing Business* (Washington: 2016). McKinsey, *Berlin gründet* also illustrates the continuing complexity of dealing with the Berlin authorities with reference to various examples.

29 European Commission, *Policy for Industrial Champions*.

30 R. Ahrend, E. Farchy, I. Kaplanis, and A. C. Lembcke, "What makes cities more productive? Evidence on the role of urban governance from five OECD countries," *OECD Regional Development Working Papers*, no. 5 (Paris: OECD Publishing, 2014), http://dx.doi.org/10.1787/5jz432cf2d8p-en.

31 See also in this edition of *DIW Economic Bulletin* the article by K. Brenke, (2016): The Berlin labor market since 2005: strong employment growth yet unemployment, remains high, incomes low.

32 Compass (2015), 75.

33 Compass (2015), 76.

34 http://www.morgenpost.de/berlin/article140104525/Wie-die-Buerokratie-Berliner-Start-ups-bremst.html.

35 See, for instance, Berlin Unit, *Startup-Metropole Berlin, Berliner Agenda für ein optimiertes Gründungsumfeld* (2016).

seen some initial success here with German DAX companies locating nine "innovation centers" in Berlin.[36]

The Brexit decision has made active location marketing even more relevant since London is currently home to a large number of high-tech startups and companies conducting research which will now be considering whether to relocate.

Efforts should also be made to facilitate the recruitment of skilled workers both from within Germany and from abroad—beyond the recently developed talent portal for Berlin—by holding regular job fairs with an international focus. Accelerating visa procedures for individuals from non-EU countries remains another element of enhancing Berlin's attractiveness for highly qualified employees.

The provision of venture capital also needs to be improved. Despite the strong growth in the volume of venture capital granted recently, Berlin still suffers from underdeveloped access to this, particularly in the all-important initial growth phase and, especially, for B2B companies. Beyond the planned measures to influence the federal government and improve regulatory legislation,[37] the supply of venture capital in this segment should be boosted through targeted partnerships (for instance, with the predominantly government-funded High-Tech Start-Up Fund). Making Berlin an attractive location for multinational companies' research departments would also pay off because these companies are more likely to provide venture capital to startups if they are on site.

Finally, the quality of life in Berlin, for instance, the quality of schools, cultural institutions, and healthcare, are also decisive factors in the attractiveness of the city as a startup hub. There is still room for improvement in some of these areas in Berlin.

In recent years, Berlin has increasingly benefited from the dynamic growth in startup companies and has earned an excellent reputation as a startup hub. Now the focus should be on improving Berlin's attractiveness as a location for fast-growing firms in order to increase the likelihood of existing opportunities resulting in sustainable economic growth and attractive jobs in the long term.

36 See http://www.ihub.berlin/9-von-19-innovation-center-von-dax-konzernen-sind-in-berlin/

37 For instance, taxation as well as the protection of "minority investors" is currently under discussion.

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