



KfW Research

KfW-Start-up Monitor 2017

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Record employment with side-effects: fewer start-ups than ever

The record level of employment in the labour market is directly affecting start-up activity. The number of business start-ups fell to a new low in 2016. New businesses were started by 672,000 persons, 91,000 fewer than in 2015.

One silver lining is their higher structural quality. Never before have there been fewer necessity start-ups and never before has the ratio of opportunity start-ups to necessity start-ups been better. Opportunity start-ups are expected to make a major contribution to the economy. The same is true of what are referred to as growth-oriented start-ups. This group makes up 17% of business founders, or 115,000 persons. Growth-oriented start-ups are more digital, innovative and capital-intensive than others – a good basis for success.

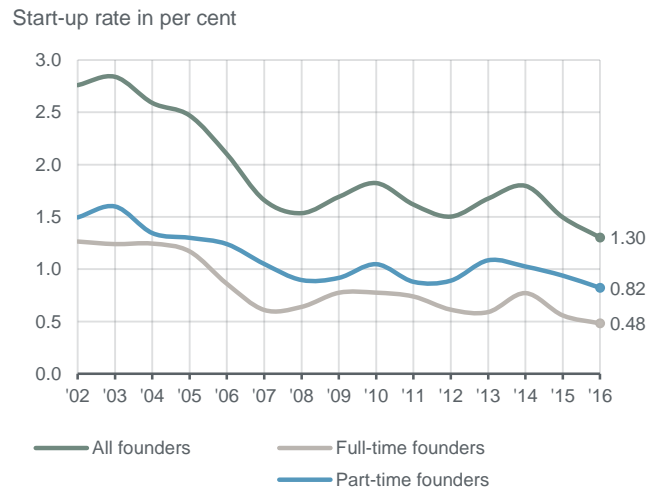
The continuing decline in start-up activity is an economic concern. A shortage of business founders today means a competitive disadvantage for the whole economy tomorrow. But the outlook for 2017 gives hope as the decline appears to be levelling off.

Number of start-ups continues to test new lows

The number of business founders dropped further in 2016. Self-employment was chosen as a new gainful activity by 672,000 persons, 91,000 fewer than in 2015 (Table 1). The start-up rate fell from 1.5 to 1.3% (Figure 1). That means there were 130 business founders for every 10,000 persons aged 18 to 64. Both full-time and part-time start-up activity decreased in equal measure. The number of full-time business founders dropped further from the previous year's low to 248,000 (-14%). The number of part-time entrepreneurs fell below its previous low of 2011 to 424,000 (-12%).

With this renewed decline, the record level of employment in the labour market is directly affecting start-up activity. This is, because push and pull factors influence start-up activity across the entire economy. Trends in the business cycle and variations in unemployment exert the strongest influence. A positive cyclical development improves the starting conditions and 'pulls' employable persons into self-employment. Rising unemployment, on the other hand, means reduced job opportunities and gives employable persons a push to start a business of their own.

Figure 1: Start-up rate is still slipping



Note: Annual share of start-up entrepreneurs in the population aged 18 to 64 years in the period from 2002 to 2016.

Data source: KfW Start-up Monitor

Table 1: Fewer than 700,000 business founders in 2016

	2014	2015	2016
Total	915	763	672
Full-time start-ups	393	284	248
Part-time start-ups	522	479	424
Opportunity start-ups	441	377	310
Necessity start-ups	288	207	166
Innovative start-ups	92	95	58
Digital start-ups	-	160	140
Growth-oriented start-ups	-	-	115

Data source: KfW Start-up Monitor

Box1: The KfW Start-up Monitor

The KfW Start-up Monitor is based on the information provided by 50,000 randomly selected persons domiciled in Germany. They are interviewed by telephone on an annual basis as part of a representative survey of the population. Start-ups are identified in accordance with a broad definition of start-up activity covering full-time, part-time, self-employed and commercial start-ups. That makes the KfW Start-up Monitor the only data source in Germany to provide a comprehensive picture of German start-up activity.

Labour market absorption is stronger than cyclical pull

Adjusted for calendar variations, real GDP growth increased noticeably to 1.8%¹ in 2016 (2015: 1.5%). The German labour market was also in excellent shape. Year-on-year, the unemployment rate by ILO standard fell again noticeably by 0.4%² to 3.9% (down 0.4 percentage points on 2015). Never before since unification have so many people been employed. The record situation on the labour market has had a strong absorption effect on potential business founders which the pull effect of higher economic growth could do little to match. On balance, the development of the two economic factors thus negatively impacted on start-up activity in 2016.³

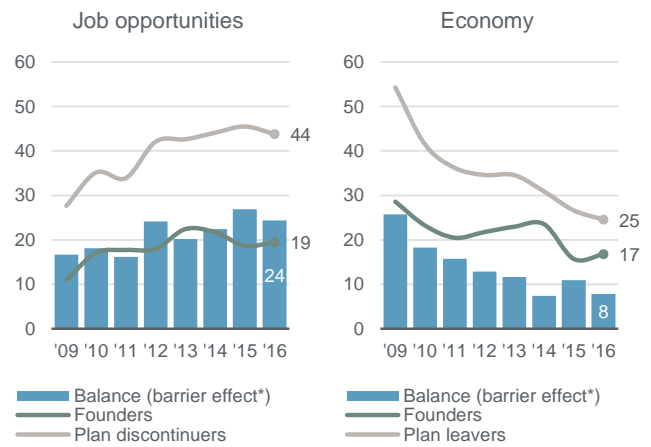
Workers spoiled for choice amid high demand for labour

Owing to the high demand for labour, persons of working age are currently spoilt for choice – between a high number of attractive employment alternatives on the one hand and, in general, between salaried employment and (full-time) self-employment. More and more often, they decide against self-employment because better employment opportunities outweigh the risks of starting a business, which can be considerable. If that enables existing businesses to meet their immediate demand for workers, it helps the economy directly, allowing a bigger pie to be produced which can then be distributed. But indirectly it increases the risk of having to reduce the size of the pie in the future. The reason is that lively start-up activity makes an economy fit for the future through the competitive pressure it generates.

An analysis of barriers to starting a business also illustrates how improved employment opportunities affect start-up activity. In recent years, business founders have been increasingly aware of opportunity costs. Opportunity costs refer to lost benefits from missed employment opportunities. One in five business founders of the past year (19%) had concerns because of better jobs or improved career prospects in salaried employment (Figure 2, left). These reservations play an even bigger role for those who abandon their start-up plans (44%). The barrier effect of opportunity costs is therefore high and has risen appreciably. An obstacle can be regarded as all the more prohibitive the greater a role it plays for those who abandon their plans compared with those who actually start a business. By contrast, if those who abandon their plans and those who follow through meet with a barrier with similar frequency, it must be regarded rather as a corollary of start-up activity.

Figure 2: Employment opportunities increasingly deter start-ups, economic worries hardly matter

Barriers in per cent / balance in percentage points



*Barrier effect: The more often a barrier is perceived by those who abandon their plans than by those who follow through, the more prohibitive is its effect.

Data source: KfW Start-up Monitor

Concerns over the economy also act as a barrier, but that effect is currently rather weak. Thus, 17% of last year's business founders had concerns that the economic situation was too unfavourable to start a business. However, only one in four founders who abandoned their plans were worried about the economy (Figure 2, right). That was different in 2009, when the financial crisis generated economic disruptions. At the time, 29% of founders and 54% of those who opted out were worried about the business cycle, which shows that economic concerns deterred many from seeking self-employment back then.

Opportunity start-ups clearly predominate

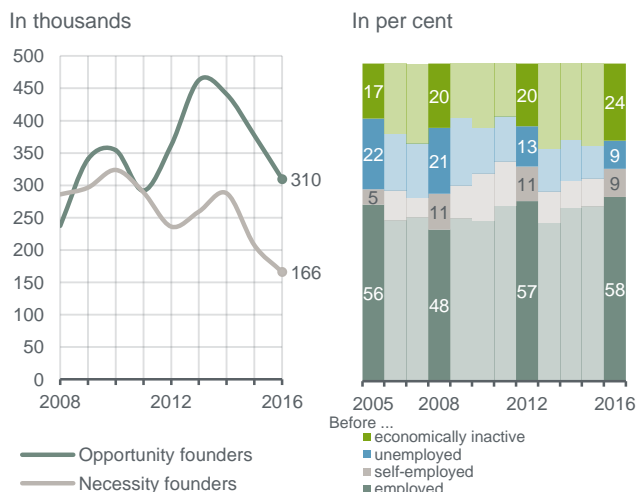
The extraordinarily positive labour market development with higher employment opportunities is resulting in far fewer necessity start-ups, in particular. In 2016, only 166,000 persons took up self-employment because they had no better income alternative (Table 1). That was half as many as in 2010 (Figure 3, left). But even opportunity entrepreneurs cannot elude the downward trend. The number of persons who started a firm in order to implement a specific business idea dropped to 310,000. However, the ratio of opportunity to necessity entrepreneurs has never been better, with opportunity entrepreneurs clearly dominating start-up activity. On average, opportunity entrepreneurs bring more innovations to the market, employ more staff and survive on the market longer than necessity entrepreneurs.⁴ From an economic perspective it is therefore encouraging that opportunity entrepreneurs are playing a bigger role in start-up activity.

Two factors may explain the higher survival rates of opportunity start-ups: they are better prepared and have a longer time horizon. On a long-term average, half the opportunity entrepreneurs have a lead time of at least six months, but necessity entrepreneurs only three. Besides, necessity entrepreneurs are probably more inclined to end their business as soon as a better income alternative presents itself. That was, after all, what motivated their start-up.

Few entrepreneurs have growth ambitions

Necessity entrepreneurs are not per se less prepared or less ambitious than opportunity entrepreneurs, however. Thus, at least one fourth of necessity entrepreneurs also take at least half a year to prepare their start-up. Besides, the number of growth-oriented entrepreneurs among necessity entrepreneurs is roughly the same as among opportunity entrepreneurs. The share of entrepreneurs with growth ambitions can be quantified for the year 2016 for the first time. One in six business founders want their business to grow as large as possible (17%).⁵ All others prefer a size they can manage alone or with few executive employees. The share of growth-oriented start-ups differs very little from opportunity start-ups (18%) to necessity start-ups (15%).

Figure 3: Number of necessity entrepreneurs has halved since 2010 – fewer than one in ten were previously unemployed



The question asked about the motive for self-employment was: “What was the main reason you took up self-employment? Was it to seize a business idea [opportunity], for lack of a better job alternative [necessity], or was it for a different reason?”

Data source: KfW Start-up Monitor

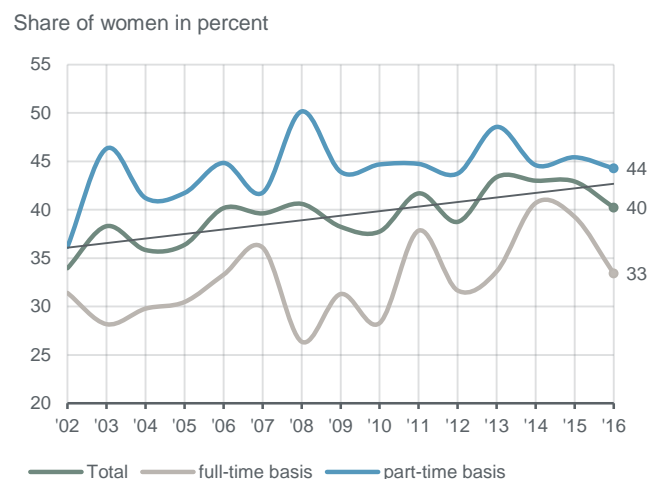
Consistent with the development of necessity start-ups, never have so few persons been unemployed before they started a business as in 2016, at 9% (Figure 3, right). Ten years ago that was still the case for a good

one fifth of start-ups. On a long-term average, more than half of entrepreneurs start their business out of employment (2016: 58%). They tend to be opportunity-minded. Almost half of them start to put a specific business idea into practice. This applies to only three in ten business founders coming from unemployment. As expected, the income motive prevails in this sub-group (2016: 52%). The share of business founders who were previously economically inactive has been growing since 2013. Roughly one in four was previously economically inactive whereas that used to be the case for only one in five. This structural shift coincided with a rise in female entrepreneurship. That trend can be explained in part by the legal entitlement to daycare for children under three which was introduced in August 2013⁶. The demand for child daycare resulting from lack of spaces in daycare facilities has been met by private initiatives run by mostly self-employed childminders – who often care for their own children at home at the same time.

Participation of women drops but remains high

After years of very strong start-up participation, female entrepreneurship has dropped again slightly. The share of women fell to 40% in 2016 from 43% in each of the previous three years (Figure 4). The decline is primarily due to their significantly lower participation in full-time start-ups, where the share of women dropped from 39 to 33%. In part-time start-ups the female share remained nearly unchanged at 44% (2015: 45%) and is thus on the average level of the past years. One of the reasons for the strong decline in female participation in full-time start-ups is the situation on the labour market, which was particularly favourable for women in 2016.⁷

Figure 4: Full-time start-ups are much less attractive for women



Data source: KfW Start-up Monitor

Start-up activity by state: Hamburg overtakes Berlin

A new leader tops the ranking of start-up activity by federal states (Table 2): Hamburg has overtaken Berlin for the first time. On average for the years 2014 to 2016, 253 persons out of 10,000 started their own business each year (+7 on 2013–2015) (Figure 5). The city-state thus outranks Berlin with 238 business founders per annum (-26). Despite posting the strongest decline in start-up activity of all states, Hesse continues to defend its third-place with 182 business founders per 10,000 persons of working age (-46). Bremen remains in fourth place (167, -15). Unlike in most federal states, start-up activity in Saxony has climbed a few notches to 147 (+9), enough to occupy seventh place, ahead of the other large eastern German federal states.

Start-up activity is higher in conurbations

Urban agglomerations promise short distances because many people live within a small space. That benefits service providers and retailers most of all. These are precisely the sectors where self-employment as a form of work is more widespread. Consequently, the higher density of western German (non-city) states is probably one reason they are typically behind the city states in the ranking. However, the federal states' particular economic structure also plays an important role.

Table 2: The top two have traded places

Ranking of federal states by start-up activity over a three-year average

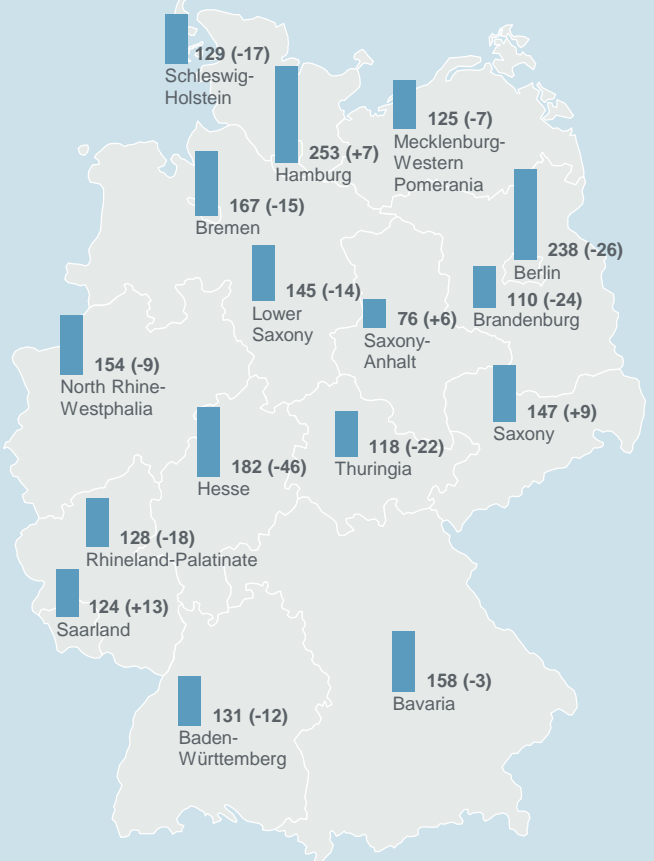
	Rank '13-'15	Δ	Rank '14-'16
Hamburg	2	↑	1
Berlin	1	↓	2
Hesse	3	•	3
Bremen	4	•	4
Bavaria	6	↑	5
North Rhine-Westphalia	5	↓	6
Saxony	12	↑	7
Lower Saxony	7	↓	8
Baden-Württemberg	10	↑	9
Schleswig-Holstein	8	↓	10
Rhineland-Palatinate	9	↓	11
Mecklenburg-Western Pomerania	14	↑	12
Saarland	15	↑	13
Thuringia	11	↓	14
Brandenburg	13	↓	15
Saxony-Anhalt	16	•	16

Data source: KfW Start-up Monitor

Thus, start-up activity in Hamburg and Berlin is strongly driven by the media and IT industry with its high shares of business founders. An industrial economy tends to be associated with lower start-up activity. Large enterprises typically offer attractive jobs that are also of interest to potential business founders. Because purchasing power in eastern German states is lower on average, part-time start-up activity in particular is significantly less frequent there. These states consistently rank below the other federal states. The diverging development of regional labour markets is a major driver of variations in the rankings of the federal states. Sector cycles that influence the hiring practices of large companies can be relevant in this regard, as can major insolvencies. Institutional variations in the way individual states promote start-ups also have an impact.

Figure 5: Hamburg – the new start-up capital

Number of business founders per 10,000 employable persons (2014–2016 p.a.)



Note: Average annual number of business founders per 10,000 inhabitants aged 18 to 64 years from 2014 to 2016. Variation on the previous period 2013–2015 in brackets.

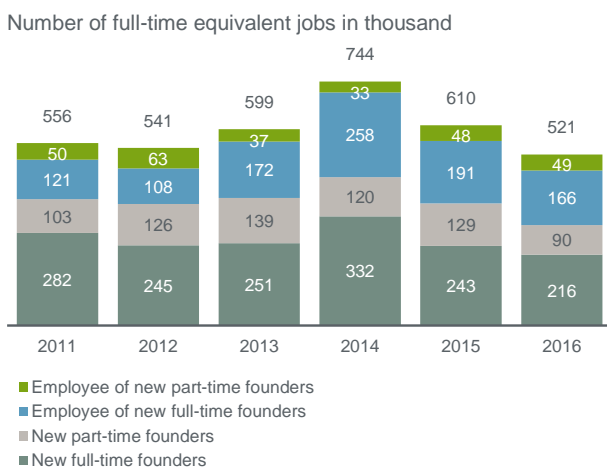
Data source: KfW Start-up Monitor

New business founders create more than 500,000 full-time equivalent jobs

Becoming self-employed can occur in different ways. The preferred approach has always been to found a new 'enterprise'. Founders of new enterprises accounted for 77 % of newly self-employed people in 2016. Many apparently find it less attractive to take over or actively participate in an existing business. Takeover entrepreneurs accounted for 9 % and co-founder entrepreneurs represented 14 % of newly self-employed people in 2016.

Businesses that already have employees are often the cornerstone for the self-employment of takeover and co-founder entrepreneurs. Their staff should not be counted when calculating the employment effect of start-up activity because it would otherwise be unjustifiably overstated. In order to assess the contribution start-up activity makes to employment, new start-ups therefore have to be considered separately. The direct gross employment effect of new business founders is measured in full-time equivalents (FTEs, cf. note to Figure 6). In 2016 that effect was 521,000 after 610,000 in the previous year (-15 %).

Figure 6: Employment effect drops to 521,000



Note: Full-time equivalents (FTEs) of new start-ups are expressed as their number weighted with their individual weekly working hours. Employee FTEs reflect the sum of full-time employees and part-time employees, which are counted half. Outliers of employee numbers and weekly working hours are excluded.⁸

Data source: KfW Start-up Monitor

The decline in start-up activity has a direct impact on the employment effect. In 2016, however, the business founders' significantly shorter weekly working hours were the main reason. The number of start-ups fell by 'just' 10% overall to 515,000. The 45 weekly working hours of full-time new entrepreneurs, however, was slightly lower on average than in the previous year (2015: 47 hours) while the 11 working hours of part-time new entrepreneurs was even noticeably lower

than in 2015 (14 hours). The reduced working hours caused an appreciable drop in the gross employment effect.

- The employment effect for full-time new business founders fell by 27,000 entrepreneurs to 216,000 FTEs (-11 %) and for their employees by 24,000 to 166,000 FTEs (-13 %).
- The employment effect for part-time new business founders virtually collapsed, by 39,000 to 90,000 (-30 %). By contrast, the employment effect of their workforce rose slightly by 1,000 to 49,000 (+3 %).

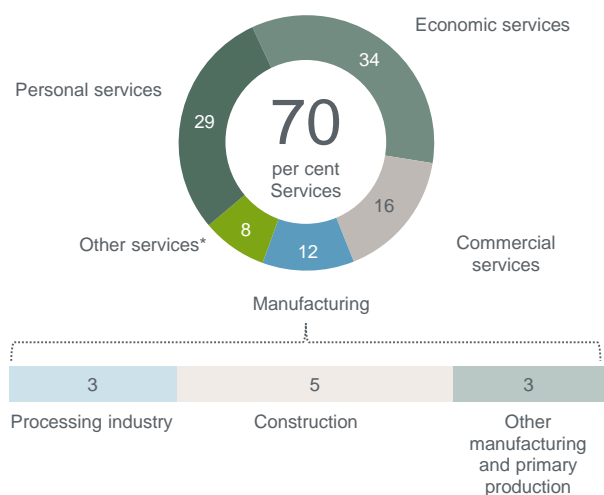
As in the two previous years, every new business founder created an average of 0.4 full-time equivalent jobs per capita in 2016. The value is lower than 'one' owing to the high share of new business founders starting off with no employees: 80 % of new business founders start solo or in a team without employees. Even though the immediate employment effect has declined, this shows how important new start-ups are for the labour market.

Service providers are in a solid majority

The most common start-ups are typically service providers. For years now, some 70 % of business founders have been setting up their business in the services sector (Figure 7).

Figure 7: Service providers dominate

Sector shares in per cent



*Financial services, transport and communication services

Note: Start-ups were allocated to particular branches of economic activity on the basis of the project descriptions provided by the business founders in accordance with the "Classification of Economic Activities" of the German Federal Statistical Office, Edition 2008 (WZ 2008)

Data source: KfW Start-up Monitor

Services targeting commercial customers (business services) are usually more common (2016: 34 %) than services targeting private customers (personal services, 29%). Roughly one in ten business founders start their activity in financial services or transport and communications (8%). One in six start-ups are in the retail sector (16%) and a good one in ten in the producing sector (12%).

Digital technologies are crucial for one in five business founders

The influence of new technologies on start-up activity can hardly be measured with a traditional sector analysis. The same applies to digital transformation. Last year the KfW Start-up Monitor demonstrated for the first time that one in five start-ups could be referred to as a digital start-up. By their own accounts, their offerings were accessible for customers only through digital technologies. That trend remained steady in 2016: as before, 21 % of new businesses were digital start-ups (Figure 8, left).

The business models of digital start-ups are diverse. They can:

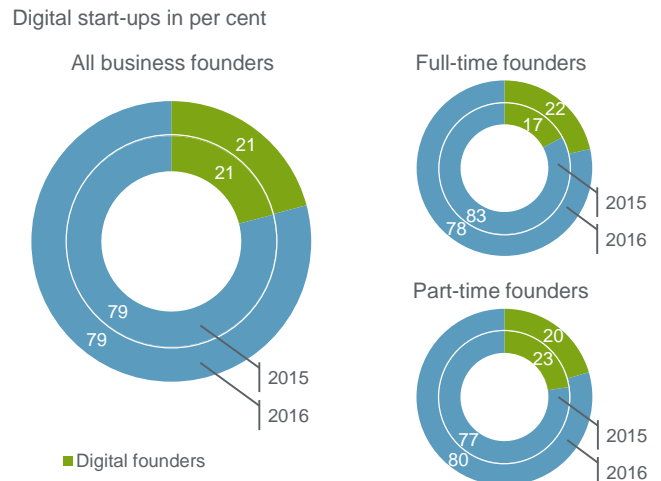
- be purely digital, such as those of app providers, operators of web portals or web hosting services,
- have a major digital component, as in the case of online retailers or providers who sell (self-produced) products or services exclusively through online marketplaces, or
- comprise an activity that is essentially based on digital technology, such as that of software developers, web designers, IT consultants, online marketing or digital photography.

The proportions of full-time and part-time digital start-ups converged in 2016. In the previous year, digital start-ups were launched much more often on a part-time than full-time basis (23 vs. 17%), but in 2016 they were almost on the same level (20 vs. 22%, Figure 8, right). Digital technologies can make it easier for entrepreneurs to enter the market by enabling them to implement their business models more easily and cost-effectively – one factor that explains the high share of part-time digital business founders. At the same time, however, are a large number of business founders run their business on a full-time basis, such as self-employed IT consultants or software engineers.

One benefit of digital business models is their typically easier scalability. For example: once programmed, an app can be sold to one customer or to 100,000

customers without incurring further costs. That makes digital technologies particularly appealing to growth entrepreneurs. In fact, these entrepreneurs are one and a half times more common than business founders with no growth ambitions (31 vs. 19%). Or, from a different angle: one fourth of digital entrepreneurs are growth-oriented (26%) but only one in six non-digital entrepreneurs (15%).

Figure 8: As before, one in five start-ups is digital



The question on digitalisation was: 'Is your product or service a digital offering, that is, do your customers have to use digital technologies to be able to use it?'

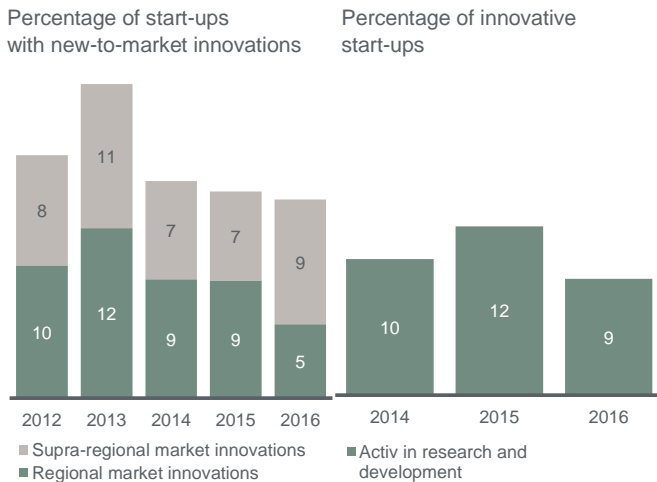
Data source: KfW Start-up Monitor

More innovations for supra-regional markets

As was the case with digital entrepreneurs, the proportion of business founders with new-to-market innovations also remained steady. In 2016, 15% of business founders launched new-to-market innovations (Figure 9, left). The proportion has thus remained nearly steady for the past three years, but with a different distribution. The share of business founders with supra-regional new-to-market innovations rose from 7 to 9%, while 5% introduced innovations to their own region.

Regional new-to-market innovations can be regarded as the result of a (continuous) spread of new offerings from urban to rural regions. The share of business founders with a regional new-to-market innovation therefore hovered very near the 10% mark over time. The current drop to 5% is unprecedented. Indeed, many supra-regional new-to-market innovations have "never been seen before". So they also appear less frequently and more irregularly, however, which is why their share oscillates more strongly.

Figure 9: More business founders with supra-regional new-to-market innovations again – fewer are doing research



Note: Supra-regional new-to-market innovations are classified as offerings that are new either in Germany or worldwide, according to the surveyed start-ups' own assessment. Innovative start-ups are classified as start-ups that conduct research and development (R&D) in order to turn technological innovations into market-ready products.

Data source: KfW Start-up Monitor

New-to-market innovations, by definition, represent offerings newly introduced to the respective markets. An example of a regional new-to-market innovation could be a dining experience offered in a rural region in a form previously unavailable there. New-to-market innovations therefore do not necessarily have to be innovative in a technological sense. Innovative start-ups conduct research and development (R&D) in order to – by their own accounts – turn technological innovations into market-ready products. Measured at a rate of 10% for 2014 for the first time, innovative start-ups reached a share of 12% in 2015 (Figure 9, right). That share fell to 9% in 2016.

Completed successfully, technological innovations can be a unique selling point that attracts customers and boosts growth. Growth-oriented entrepreneurs are hence likely to conduct research and development more often in order to turn technological innovations into market-ready products. Growth-oriented entrepreneurs are, in fact, considerably more often innovative (15%) than entrepreneurs with no growth ambitions (7%). Or, from a different angle: three in ten innovative entrepreneurs are growth-oriented (30%) but only one in six non-innovative entrepreneurs (16%).

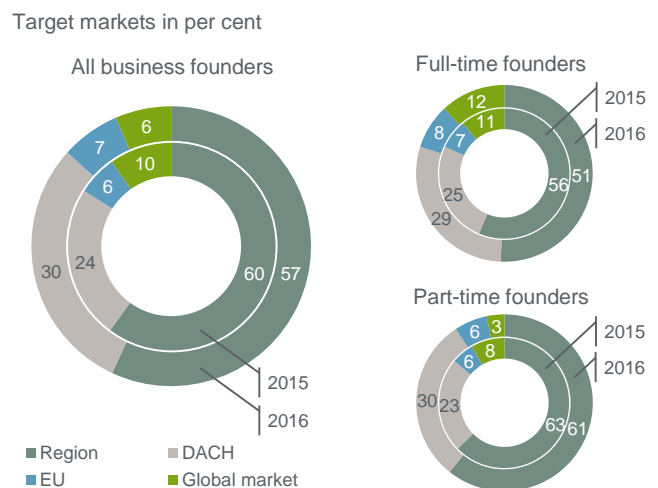
With new technologies and new offerings in their sights, digital and innovative entrepreneurs and those with new-to-market innovations play an important role for the economy. They in particular target established

markets or create entirely new ones, thereby driving structural change in the meaning of Schumpeter's 'creative destruction'.

Full-time business founders are more supra-regional

The positive development of supra-regional new-to-market innovations was already an indication that business founders in 2016 dared to take a slightly broader view beyond their regional horizon. Their target markets show this as well. Since service providers take a high share, for most business founders their region is the relevant market. Providers of personal services or retailers in particular are likely to rely primarily on local customers for their business. The share of regional business founders decreased slightly from 60% in 2015 to 57% in 2016 (Figure 10, left). In exchange, considerably more business founders are targeting the German-speaking region: their share rose from 24% to 30% on the previous year. Seven per cent of business founders want to supply the EU internal market. It thus remains attractive for start-up entrepreneurs (6% in 2015). Significantly fewer business founders are targeting their products and services at the global market, their share dropped from 10 to 6% in 2016.

Figure 10: Slightly fewer business founders are looking beyond their region



Note: DACH stands for the German-speaking countries of Germany (D), Austria (A) and Switzerland (CH).

Data source: KfW Start-up Monitor

In 2015, full-time and part-time business founders were still focusing on very similar target markets. Within a year, however, the differences became more pronounced – especially because full-time business founders were positioning themselves to a greater extent supra-regional (Figure 10, right). In 2016, regional business founders accounted for only 51% of full-time business founders (2015: 56%); by

comparison, part-time business founders were now clearly targeting regional customers more often (2015: 63%). The supra-regional German-speaking market and the EU internal market have been and continue to be of similar relevance to full-time and part-time business founders (29 and 30%, and 6 and 8%, respectively). Business founders targeting the global market, on the other hand, are now four times more often full-time start-ups than part-time start-ups (12 vs. 3%).

Financial capital is most important start-up resource

Whether opportunity entrepreneur or necessity entrepreneur, whether on a full-time or part-time basis, digital, innovative or growth-oriented – the diversity of start-up activity is enormous. This is also reflected in the resources – if any – that business founders employ.

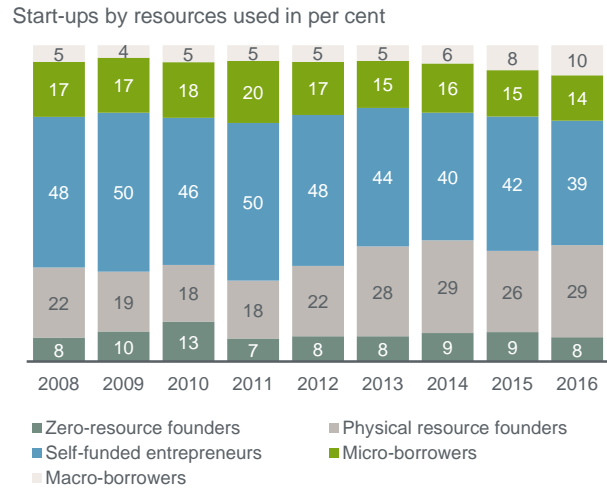
Nearly one in ten business founders can be referred to as a zero-resource founder, one that uses neither physical nor financial capital to start their business (2016: 8%, Figure 11). Three in ten business founders can be classified as a physical resource founder (29%), meaning they use exclusively private physical capital for their self-employment. This physical capital can be a privately owned computer or car. The majority of start-ups – two in three – use financial capital, however.

More business founders are using higher amounts of external capital

When business founders do employ funds, it is mostly funds of their own. Four in ten business founders are self-funded entrepreneurs who fund their business exclusively from their own resources (39%). Nearly one in four business founders, however, also resort to external funds from third parties (24%). Such external providers of capital are usually credit institutions, professional equity investors, or even family and friends. Micro-borrowers – business founders who take up not more than EUR 25,000 in external funds – usually borrow from family and friends. For macro-borrowers who borrow more than EUR 25,000 the primary sources of funding are credit institutions.

The share of macro-financed business founders has doubled since 2013. One in ten founders employed more than EUR 25,000 from external providers of capital in 2016. That means there are now more macro-financed than zero-resource business founders; which means start-ups are clearly becoming more capital-intensive.

Figure 11: Share of macro-financed start-ups doubled within three years

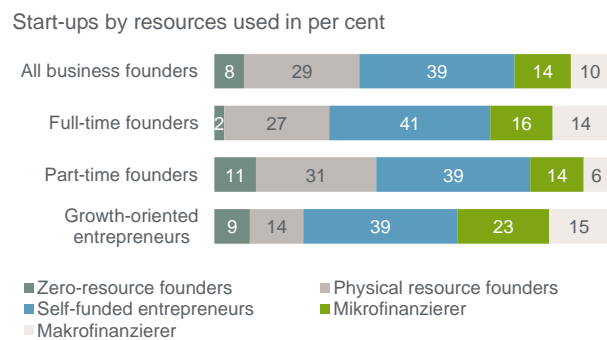


Note: Differences may be due to rounding.

Data source: KfW Start-up Monitor

The structure of resources employed by business founders has remained relatively stable from year to year. It usually takes several years for changes to become visible. However, a comparison of different types of business founders brings differences to light. Full-timers employ financial capital more often, especially large volumes of borrowed funds: 14% of full-timers but only 6% of part-timers use external funds in excess of EUR 25,000 (Figure 12). Full-time business founders thus rely on seed capital and providers of finance more frequently for their projects than part-time business founders. The goal they pursue also makes a difference. Thus, growth-oriented entrepreneurs rely on financial capital more than others: nearly eight in ten growth-oriented entrepreneurs use finance (77%) and half of these (38%) rely on external providers of capital.

Figure 12: Many growth-oriented start-ups rely on external providers of capital



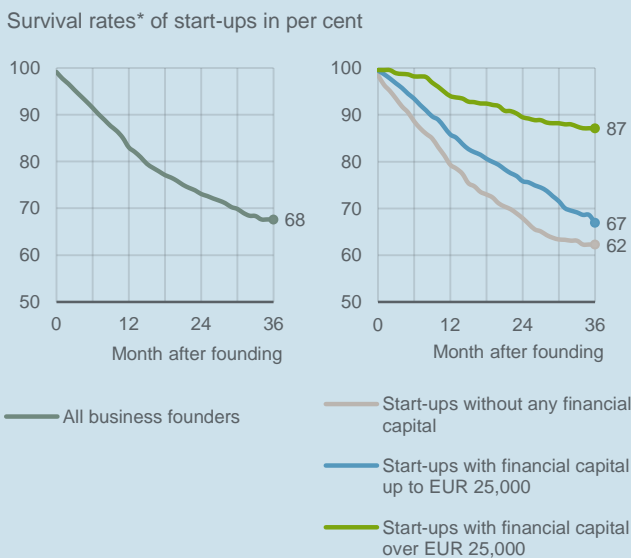
Note: Differences may be due to rounding.

Data source: KfW Start-up Monitor

Start-up discontinuation rates

With respect to the survival rate of business start-ups, the KfW Start-up Monitor shows a stable empirical pattern. Some 30 % of new businesses close down again within the first three years (3-30 rule of thumb). Thirty-six months after launching, 68 % of business start-ups are still in business (Figure 13, left). The reasons for aborting are diverse. By far the largest proportion of business founders discontinue their venture for personal reasons, not because of immediate financial stress (Figure 14, right). These reasons include family pressures, illness, dissatisfaction with the income achieved, or because of a more attractive job alternative⁹. Besides, many start-ups are initially planned for the short term only, particularly part-time businesses.

Figure 13: The more funds a business has, the longer it survives

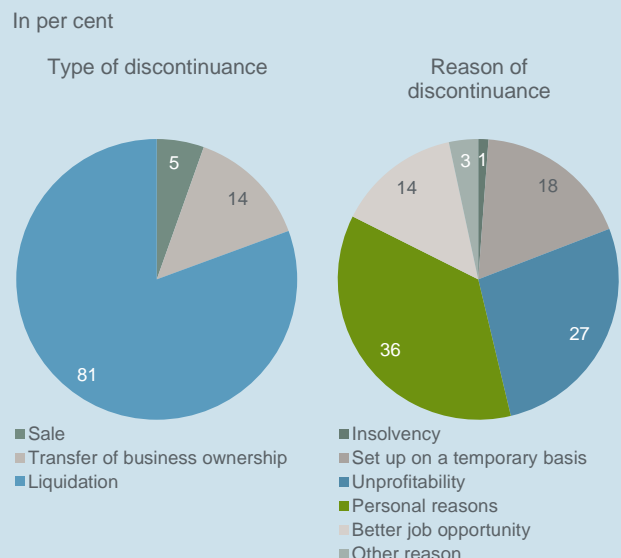


* Kaplan–Meier survival function.

Data source: KfW Start-up Monitor

Only a small fraction of start-ups end because of insolvency. Discontinuation rates therefore cannot be equated to ‘default rates’. Another reason this would be wrong is that a large portion of businesses start without external capital input, meaning a default would be impossible. By comparison, business founders who take up larger sums in excess of EUR 25,000 (regardless of whether these are their own funds or borrowed) have significantly higher survival rates (Figure 13, right). Discontinuation rates are particularly high among business founders who start off without any financial capital at all. This has to do with the goal of their venture: zero-resource and physical resource founders are more likely to aim for temporary income while businesses that are more highly capitalised are long-term.¹⁰

Figure 14: Start-ups are usually discontinued for personal, not financial reasons



Data source: KfW Start-up Monitor

In accordance with the growing share of macro-funded business founders, average funding amounts have increased in the past years. In 2016, an average business founder employed EUR 17,000, of which EUR 9,500 came from external providers of capital (Table 3). However, this average figure also includes the 37 % business founders who did not employ any funds. Entrepreneurs who employed funds invested averagely EUR 30,600 (2015: EUR 27,400), of which EUR 13,400 came from their own coffers (2015: EUR 13,300) and EUR 17,200 from external sources (2015: EUR 14,100). When business founders borrowed capital it was roughly 13 % more, or EUR 47,100 on average, than in the previous year.

Table 3: Mean capital input of start-ups continues to rise

Amounts in EUR thousand

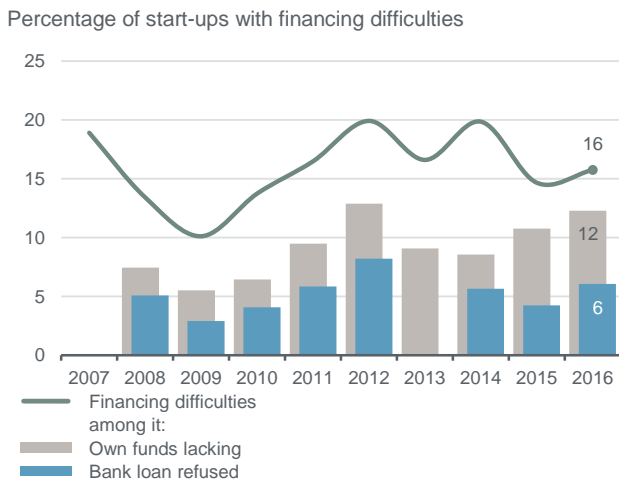
	2014		2015		2016	
	Total	of which external	Total	of which external	Total	of which external
All start-ups	9.9	5.3	15.8	8.1	17.0	9.5
Funding-based start-ups	16.5	8.8	27.4	14.1	30.6	17.2
Externally funded	36.6	26.0	60.8	41.7	65.3	47.1
Macro-financed	115.4	88.9	164.8	115.5	154.9	115.3

Data source: KfW Start-up Monitor

Funding environment for start-ups has hardly changed

In 2016, business founders were affected by funding difficulties with similar frequency as in the previous year; with 16% of business founders reporting problems (2015: 15%, Figure 13).

Figure 13: Business founders with financing difficulties



Data source: KfW Start-up Monitor

When business founders need to borrow funds, they consistently have to overcome higher barriers than established enterprises. They often lack confidence-building elements such as a corporate history or collateral. Their lower funding needs can also be a drawback. High fixed costs make it less attractive for institutional lenders to extend small amounts of finance. That makes it necessary for business founders to put greater effort into planning and convincing lenders in order to successfully arrange start-up finance. This is illustrated by the proportion of business founders with financing difficulties. The share of business founders with problems accessing loans is lower by comparison. Thus, 6% of business founders were denied a bank loan in 2016; 12% of business founders had insufficient own means.

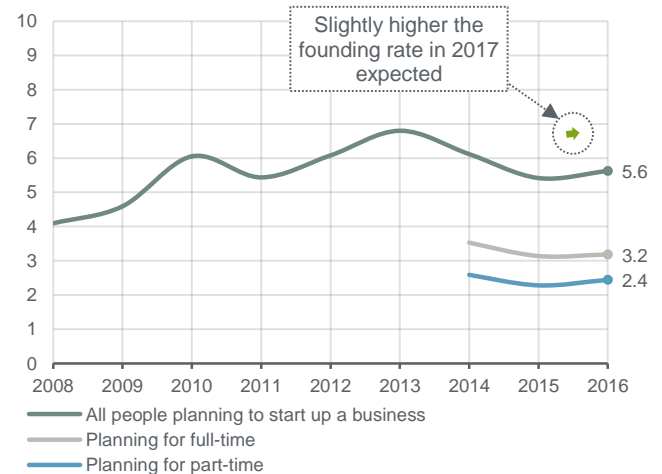
The average proportion of business founders affected by loan denials was 5% per annum for the years 2012 to 2016. The following also applies, however: the more often a loan is applied for, the more likely it becomes for an application to be denied. An average 7% per annum of business founders resorted to a bank loan in the period under review. Of these loan-funded business founders, 16% experienced at least one denial of a loan application.

Outlook for 2017: the decline is expected to end

Start-up activity is likely to benefit slightly from the overall economic trend in 2017. We expect a slightly weaker cyclical pull effect on start-up activity this year than in 2016⁹. Although the positive development on the labour market will continue, the decline in unemployment will probably slow¹⁰. On balance, the absorption effect of the labour market will weaken to an extent that will allow the cyclical pull effect to predominate slightly. The share of start-up planners also points to an end to the decline (Figure 14). The share of persons seriously considering self-employment rose moderately in 2016. Because the planning process from an idea to implementation often takes several months, this is indicative of a neutral to positive development of the start-up rate in 2017. ■

Figure 14: Slightly more start-up planners in 2016 – a good sign for start-up activity in 2017

People seriously considering starting a business in per cent of the working age population



Data source: KfW Start-up Monitor

Box 2: A quick note on the Start-up Monitor

The present report 'Record employment with side-effects: fewer start-ups than ever' supplementing the KfW Start-up Monitor 2017 provides details on some of the findings. The accompanying Appendix of Tables and Methods provides further information on the structure of start-up activity that was taken from the recent survey and the two prior survey waves.

The KfW Start-up Monitor surveys start-up activity for the purpose of economic analysis. As a scientific dataset it is also available to external researchers for empirical research work, but not for projects conducted under contract research. External researchers must be affiliated with a research institute in order to use the dataset. The dataset may also be used by doctoral candidates and PhD students in preparing their doctoral theses, but not by students who are nearing completion of a German 'Diplom' or a Master's degree. An overview of the terms of access can be found at <https://www.kfw.de/KfW-Konzern/KfW-Research/%C3%9Cber-KfW-Research/Forschungskooperationen/> (only in German available).

¹ Federal Statistical Office (2017), Deutsche Wirtschaft im Jahr 2016 weiter auf Wachstumskurs (*Germany continued on a path of growth in 2016*), Press Release 010/17 dated 12 January 2017, https://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2017/01/PD17_010_811.html (in German).

² Federal Statistical Office (2017), National accounts, as at: 1 March 2017, <https://www.destatis.de/DE/ZahlenFakten/GesamtwirtschaftUmwelt/Arbeitsmarkt/Erwerbslosigkeit/Tabellen/EinwohnerErwerbsbeteiligung.html>.

³ For the period 2000 to 2009, Kohn et al. (2010) identified the following correlation between start-up activity, business cycle and unemployment in Germany: $q=2.18+0.06\Delta u+0.16g$, where q is the start-up rate, g the GDP growth rate, adjusted for price and calendar variations, and Δu the relative change of the unemployment rate (Kohn, K., Ullrich, K. and Spengler H. (2010): KfW Start-up Monitor 2010, Lebhaftige Gründungsaktivität in der Krise (*Lively start-up activity amid crisis - our title translation, available in German only*), KfW Group, Frankfurt, June 2010).

⁴ Analyses based on the KfW Start-up Monitor. For more on the lower survival rates of necessity start-ups see Metzger, G. (2016), KfW Start-up Monitor 2016, Appendix of Tables and Methods, Frankfurt am Main, June 2016, page 21.

⁵ The question asked to identify growth entrepreneurs was: "Which of the following two statements comes closest to your view? 'My business should become as large as possible' or 'My business should become only large enough to allow me to manage it by myself or with a few co-managers'", based on Acs, Z., Ástebro, T., Audretsch, D. and Robinson D. T. (2016), Public policy to promote entrepreneurship: a call to arms, *Small Business Economics* (47): 35–51.

⁶ "Children from the age of one year have a legal right to daycare since 1 August 2013. This legal right can be satisfied by a child daycare facility or through daycare – that is, by a childminder." (our translation) <https://www.bundesregierung.de/Content/DE/StatistischeSeiten/Breg/Kinderbetreuung/2013-07-19-rechtsanspruch-u3.html>, retrieved on 7 April 2017.

⁷ On average for 2016, the female unemployment rate dropped to 5.8% (-0.4 percentage points; men: 6.4%, -0.2 percentage points), see Federal Employment Agency (2017), Statistik/Arbeitsmarktberichterstattung: Der Arbeits- und Ausbildungsmarkt in Deutschland – Monatsbericht, Dezember und Jahr 2016 (*Statistics/Labour Market Report: The labour and education market in Germany – monthly report, December and year 2016*), November 2017, p. 118 (in German).

⁸ Full-time equivalents (FTEs) of new start-ups reflect the sum of their individual weekly working hours in relation to a standard workweek of 40 hours. As full-time business founders worked more than a standard workweek in 2016, at 45 hours, and part-time business founders worked 11 hours, or less than a standard workweek, their contribution is higher and lower, respectively, than their headcount as measured in FTEs. In order to calculate the FTEs of employees, those working full-time are counted in full and those working part-time are treated as half jobs. Outliers of workforce numbers and weekly working hours are not counted.

⁹ For 2017 we expect GDP growth of 1.4% after 1.9% in the previous year, see Borger, K. (2017), Germany's economy in 2017 and 2018: staying the course amid high risks, KfW Business Cycle Compass 2017, 27 February 2017. Adjusted for price and calendar variations, the real growth rates represent GDP growth of 1.6% for 2017 and 1.8% for 2016.

¹⁰ Based on Fuchs, J., Hummel, M., Hutter, C., Gehrke, B., Wanger, S., Weber, E., Weigand, R. and Zilka, G. (2016), Arbeitslosigkeit sinkt weiter, IAB-Prognose 2016/2017, IAB-Kurzbericht No. 20, 22 September 2016 (in German).