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**Research Report**

## The Swiss Mass Immigration Initiative: The impact of increased policy uncertainty on expected firm behaviour

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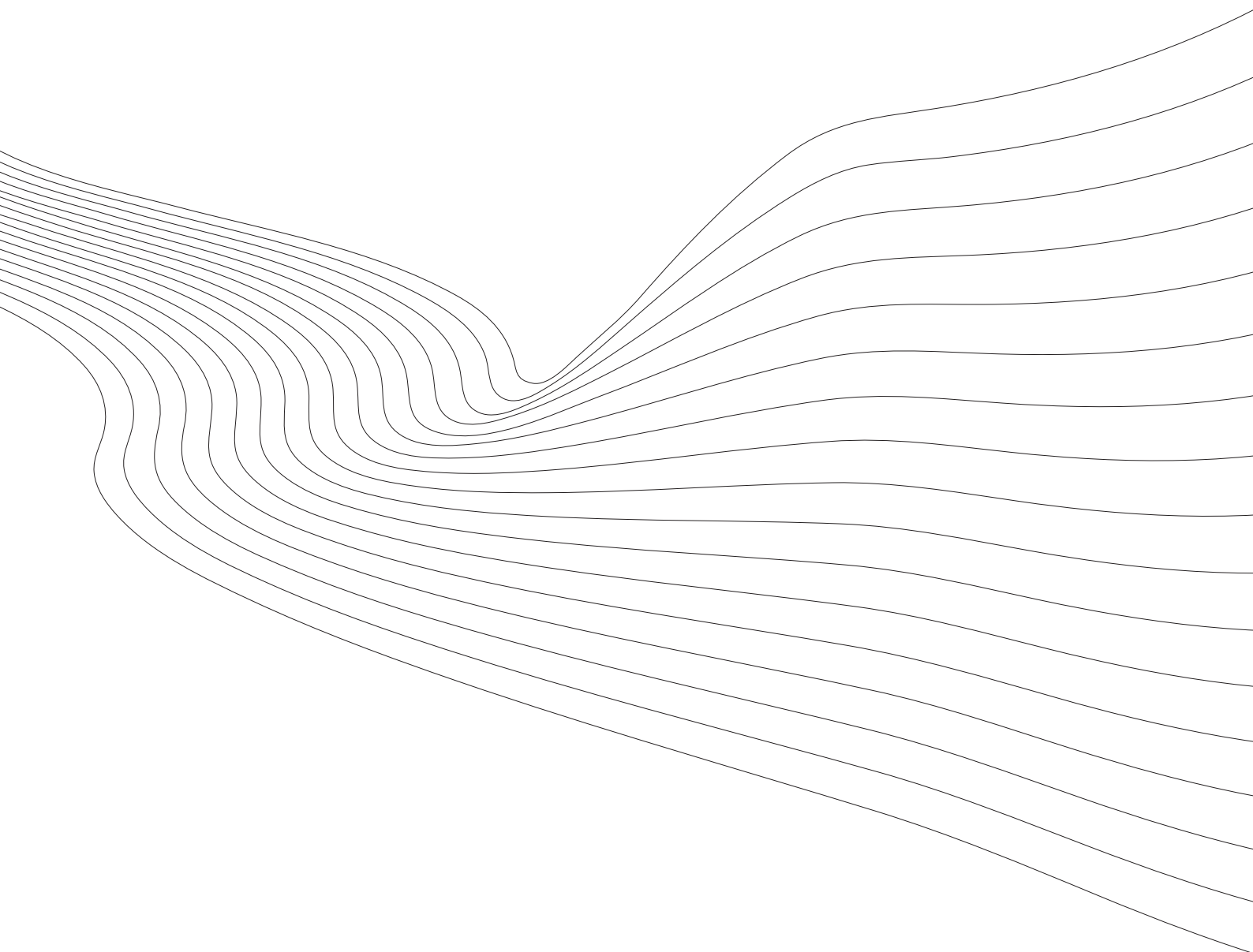
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Klaus Abberger, Andreas Dibiasi, Michael Siegenthaler and Jan-Egbert Sturm



## Imprint

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# The Swiss Mass Immigration Initiative: The impact of increased policy uncertainty on expected firm behaviour\*

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**Abstract:** In Switzerland a sudden policy uncertainty shock happened in February 2014 with the close and largely unexpected acceptance of a referendum aiming at limiting free movement of persons. The referendum requires Switzerland to reintroduce annual quotas for immigrants within three years. The referendum is vaguely formulated and its actual consequences are largely unknown. Yet, the vote reduced the expected future availability of qualified labour, put at stake several economically important agreements between Switzerland and the European Union, and reduced expected future domestic demand for firms. This paper uses a special survey conducted by the KOF Swiss Economic Institute to analyse the short- to medium-run expected consequences of this substantial policy uncertainty shock on firms' private fixed investment and employment plans. We find that those firms that believe that potential growth in Switzerland will deteriorate and those that report that investment uncertainty has increased are also the ones that see a significant reduction in their future investment activities and their expected employment due to the vote, so that an uncertainty effect is present. We also provide evidence that the short-term effect of policy uncertainty on investment is economically significant.

**Zusammenfassung:** Die knappe Annahme der Initiative gegen Masseneinwanderung im Februar 2014 führte zu einem unerwarteten Anstieg der Unsicherheit über die zukünftigen politischen Rahmenbedingungen in der Schweiz. Die Initiative verpflichtet den Bundesrat zur gesetzlichen Einführung fixer Kontingente innerhalb der nächsten drei Jahre. Die weit gefasste Formulierung des Initiativtextes verhindert jedoch das Vorhersehen der genauen Umsetzung und erhöht damit den Spielraum möglicher Auswirkungen, was letztlich in einem Anstieg der Unsicherheit resultiert. Die geforderten Kontingente beschränken den Zugang Schweizer Firmen zu ausländischen Arbeitskräften und erhöhen die Gefahr eines zukünftigen Mangels an Fachkräften. Zudem sind Kontingente mit dem bestehenden Vertrag der Personenfreizügigkeit unvereinbar, bei dessen Auflösung käme es zur Kündigung aller mit der Personenfreizügigkeit verbunden bilateralen Abkommen. Die Aussicht auf die Kündigung der bilateralen Verträge erhöht die Unsicherheit über den Zugang Schweizer Unternehmen zum Binnenmarkt der Europäischen Union und senkt letztlich die Erwartungen der zukünftigen Gesamtnachfrage. In diesem Artikel untersuchen wir die kurz- bis mittelfristigen Auswirkungen der Annahme der Initiative auf Beschäftigung und Investitionen. Unsere Analysen basieren auf einer Sonderumfrage der KOF Konjunkturforschungsstelle und zeigen, dass die gestiegene Unsicherheit bereits jetzt zu einer Reduktion der Investitionspläne und zukünftigen Beschäftigung führt.

**JEL classification:** D84; E22; E24; E66; F22; J21; J61; J68; L53; O15

**Keywords:** Mass Immigration Initiative; Switzerland; business survey; sentiment; uncertainty; investment; employment.

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## 1. Introduction

What is the effect of uncertainty on investment? Most empirical and recent theoretical economic research suggests that the effect is negative. The reason is the partial irreversibility of the capital stock. As shown by e.g. Bertola and Caballero (1994) or Dixit and Pindyck (1994), if investment is irreversible, firms may wait for more information rather than to engage in potentially irreversible investment that may turn out wrong. Put differently: irreversibility in investment generates “real options” (Abel and Eberly, 1996; Bernanke, 1983; Bloom et al., 2007), and extinguishing the option by investing today rather than to “wait and see” can be costly. Since the value of this foregone option increases with higher levels of uncertainty, investment behaviour becomes more cautious when uncertainty increases. With the help of a simulation, Bloom et al. (2012) show that in a theoretical model the effect of an uncertainty shock on investment, but also employment, can be substantial.

Uncertainty can stem from a variety of sources, including changes in economic policies, dispersion in future growth prospects, productivity movements, wars, acts of terrorism, and natural disasters (Bloom, 2009). But one particularly relevant form of uncertainty for firms concerns government policy. The interest arises because, contrary to other forms of uncertainty, policy uncertainty is affected by policy makers and can hence be influenced. The macroeconomic literature has long recognised that a political environment that creates a stable and predictable economic framework fosters economic prosperity. Conversely, uncertainty about future policies may induce firms to delay investment decisions. Indeed, Barro (1991) and Alesina and Perotti (1996) find that measures of political instability and violence are negatively correlated with investment shares across countries. Similarly, Rodrik (1991), Pindyck and Solimano (1993) and Mauro (1995) find evidence that political uncertainty is negatively related to aggregate investment.

While these studies use macroeconomic data to investigate the consequences of uncertainty on investment, newer studies have used firm-specific information. Rather than studying the effects of policy uncertainty on investment, most of the studies available so far focus on the effect of other forms of uncertainty on investment measured on the firm level. In particular, one strand of the firm-level literature has examined the effect of uncertainty measured using volatility in firms’ stock market returns on investment. Prominent papers along these lines are Leahy and Whited (1995) and Bloom et al. (2007), studying the effect of firm-specific uncertainty on investment for US and UK firms, respectively. Among others due to concerns with the measure of uncertainty used in these papers<sup>1</sup>, another strand has employed business surveys in order to gauge the effect of *demand* uncertainty on investment. In particular, Driver et al. (2004), Guiso and Parigi (1999), Butzen et al. (2003), Fuss and Vermeulen (2008), Bontempi et al. (2010) and Bianco et al. (2013) use surveys in which firms are asked about expected levels and perceived dispersion in (short-run) future demand. These studies generally support the view that uncertainty dampens investment in the short- and potentially also in the medium-term.<sup>2</sup> A major concern with this strategy is the possibility that changes in demand uncertainty as perceived and reported by

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<sup>1</sup> One concern with stock market volatility as measure of firm-level uncertainty is that stock market returns are subject to “excess volatility” in case share prices reflect more than just the firms’ fundamentals and therefore do not necessarily reflect firm-level uncertainty. Another concern is endogeneity. For example, rather than mirroring uncertainty, lower stock market volatility may in fact be the result of greater optimism about the firm’s future prospects, which itself may influence the outcome of interest (i.e. investment) but is not observed by the researcher.

<sup>2</sup> Guiso and Parigi (1999) find a weaker effect of expected demand on current investment for firms that perceived greater uncertainty about future demand, whereas Fuss and Vermeulen (2008) report that demand uncertainty at the time of planning depresses planned and subsequently realised investment. Firms do not revise their current investment due to changes in demand uncertainty, suggesting that demand uncertainty will only have effects on investment with some delay.

firms may be related to unobserved firm-specific characteristics which are themselves related to the investment behaviour of the firm.<sup>3</sup>

*Firm-level studies* examining the effect of *policy uncertainty* are surprisingly rare. The only exception, to the best of our knowledge, is Julio and Yook (2012), who analyse the effects of election periods on firms' investment. These authors argue that electoral cycles create plausibly exogenous variation in policy uncertainty, i.e. policy uncertainty that is unrelated to pre-existing firms' investment plans. Using firm-specific data for a panel of 48 countries, they find evidence of electoral cycles in firm investment. As firms appear to reduce investment expenditures during election years. According to the authors, the uncertainty about future policies leads firms to temporarily reduce investment expenditures.

This paper follows their lead and studies the effect of policy uncertainty on firm behaviour caused by the unexpected acceptance of the Referendum on the Mass Immigration Initiative (MII) that took place in Switzerland on February 9, 2014. We argue that the outcome of having a (small) majority of the population vote in favour of limiting migration came as a surprise, therefore potentially allowing to separate the effect of the vote from firms' prior investment and employment plans. Moreover, since the aim of the vote is not compatible with Switzerland's participation in the EU-wide free movement of persons area, it puts into question a set of arguably very important agreements between Switzerland and the EU, its most important trading partner. The vote hence created a substantial amount of policy uncertainty for Swiss firms in general and Swiss exporters in particular.

To estimate the effect of the acceptance of the vote on firm behaviour, we conducted a specially designed survey. At the time of the survey, it was unclear in what way and to what extent the government will introduce quota on immigration into Switzerland and what this will imply for several bilateral agreements that exist between Switzerland and the European Union. The extreme scenarios being discussed in the media vary from stagnating population growth together with strongly impeded export conditions into the European Union and lack of appropriately high-skilled labour on the one hand, to more or less the status quo situation on the other hand. Hence, at the time the survey took place, it was virtually impossible for the firms to predict what the political let alone the economic outcome of the vote will be in the long run.

We find that those firms that believe that potential growth in Switzerland will deteriorate and those that report that investment uncertainty has increased are also the ones that see a significant reduction in both their investment as well as their employment figures. Comparing past and planned investment growth between firms experiencing increased policy uncertainty and firms that do not, we gauge an economically sizable effect of policy uncertainty on investment in 2014.

The remainder of the paper is structured as follows. Section 2 describes the initiative in some detail. Section 3 presents the hypotheses we intend to test and Section 4 discusses the survey design. Section 5 contains our main empirical results.<sup>4</sup> We end with a section containing our conclusions.

## 2. The Mass Immigration Initiative in Switzerland

In the past decade, Switzerland has experienced a substantial immigrant inflow. In the period between 2002 and 2012, the average annual gross immigrant inflow relative to the resident population amounted

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<sup>3</sup> For instance, underperforming firms may perceive demand to be more uncertain than well-performing firms, as their sales and hence their order backlog are less stable. At the same time, underperforming firms may be more reluctant to invest. Similarly, a risk-averse management might perceive demand to be more uncertain than a risk-neutral management and at the same time display more cautious investment behaviour.

<sup>4</sup> The Appendices give more detailed information regarding the questionnaire and the answers of the firms.

to 1.6%. As the largest part of the incoming migrants came for work reasons, the average annual gross immigrant inflow into the labour force in this period was 3.2%. This “new immigration wave” to Switzerland raised fears in the resident population, for instance about too many foreigners in general, about displacement in the labour market, about rising house prices and rents, about crowded public transports, and about a loss in control over population growth.

In 2011, the Swiss People’s Party (SVP), a national conservative party, thus started a popular initiative aiming at restricting immigration, the so-called “Stop Mass Immigration Initiative”.<sup>5</sup> The initiative demands a reintroduction of an annual cap on total immigration in Switzerland, similar to the system Switzerland had in the 1990s. These limits and quotas should apply to all permits covered by legislation on foreign nationals, including cross-border commuters and asylum seekers, and must be geared towards Switzerland’s overall economic interests. The initiative also demands that businesses must give Swiss nationals priority when hiring staff.

One important implication of the initiative is that reintroducing quotas on total immigration is incompatible with Switzerland’s Free Movement of Persons Treaty (FMP) with the EU/EFTA states, which makes Switzerland a participant of the EU-wide free-movement-of-persons zone. The free movement regime, which has been gradually introduced since June 2002, lifted any restrictions on EU citizens wishing to live or work in Switzerland and vice versa. The FMP is important for Switzerland’s economy not only because it enabled firms to address labour shortages in the resident workforce with foreign workers, but also because the FMP is linked to six other bilateral agreements of Switzerland with the European Union. These bilateral agreements concern, among others, road and air traffic, agriculture, and probably most importantly, technical trade barriers (Abberger et al. 2014, Box 1). The agreements are expressed to be mutually dependant through a so-called Guillotine clause, i.e. if any one of them is renounced or not renewed, they all cease to apply – or need to be renegotiated at least. It is widely believed that these agreements have contributed to the comparatively strong economic performance of Swiss firms in the last decade. Aepli, R. (2010) argue that there was no negative influence on the Swiss labour market due to the introduction of the bilateral agreements and Buehler S., Helm, M. and Lechner, M. (2013) were able to show that the introduction of the bilateral agreements in 2002 led to a one to two percent increase in employment. According to Aepli, R. and M. Gassebner (2008) the bilateral agreement helped to reduce shortages in staff and consequently to enhance employment and economic growth.

Although the initiative was controversially debated prior to the vote, it was generally believed that the majority of voters would reject it. First, none of the other major political parties, no trade union, no employer organization and only very few media outlets in Switzerland supported the initiative. Second, Switzerland’s citizens have repeatedly voted in favour of the bilateral agreements in prior votes where the so-called “bilateral way” was put into question. Third, all popular polls on the initiative indicated that it would not find a majority. The last official poll was financed by the publicly owned television SRF and published only two weeks before the vote took place. It saw 50% percent of the voters against the initiative and 43% in favour of it, with 7% percent not yet decided on how to vote. Since support for popular initiatives generally declines when the election day approaches and only a relative low share of popular initiatives is generally accepted in Switzerland, the polls were taken as an indication that the sovereign would reject the initiative, although perhaps only closely (cf. GFS 2014).

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<sup>5</sup> A popular initiative is a constitutional instrument in Switzerland and represents a cornerstone of Switzerland’s direct democracy. It allows the people to suggest law in Switzerland on a federal, cantonal and municipal level. On a federal and cantonal level, accepting a popular initiative amends the text of the initiative to the respective constitution. On the national level, the signatures of 100,000 voters must be collected within 18 months for such an initiative to be organized. Popular initiatives do not originate from the Parliament or Government but from the citizens themselves.

The vote itself took place on February 9, 2014. A close 50.3% percent of all voters and the necessary majority of the 26 cantons accepted the constitutional amendment demanded by the initiative.<sup>6</sup> The surprising outcome of the vote received a great deal of coverage in national and international media.<sup>7</sup>

This public opinion environment suggests that the outcome of the vote can be regarded as an uncertainty shock for Swiss firms. The uncertainty has four dimensions. First, the new constitutional text is vaguely formulated, creating insecurity about how Swiss immigration policy might look like in 2017 when the new quota system will be in place.<sup>8</sup> The initiative neither specifies how high the new quotas should be, nor who should set and allocate them and according to what criteria. Second, the initiative creates uncertainty about the future supply of workers available to firms in Switzerland. In the past, Swiss firms had taken considerable advantage of the free movement regime and filled their vacancies with foreign workers (Aeppli, R. and M. Gassebner, 2008), which illustrates their need for the access to the pool of workers from the European Union by itself. This possibility is likely to be limited in the future. Third, the initiative creates demand uncertainty for domestic firms. The reason is that immigration had fuelled the domestic economy by increasing the demand for local goods and services. With the acceptance of the initiative, this demand is potentially breaking away. Fourth, due to the Guillotine clause, it remains unclear whether or to what extent the other bilateral agreements will be in place in the future. The vote thus not only questions the “bilateral way”, representing a cornerstone of Switzerland’s foreign and economic policy since the mid-1990s, but more specifically creates uncertainty about the firm’s future access to the EU market, representing their main export market with 55.6% of total exports in 2012.

### 3. Hypotheses

The aim of this paper is to study the short-run impacts on Swiss firms’ investment and employment plans for the nearer future triggered by the increased policy uncertainty resulting from the acceptance of the Mass Immigration Initiative on February 9, 2014. This section serves the purpose to outline the theoretical consequences of an increase in policy uncertainty and to derive the hypothesis we are going to test. As was discussed in the last section, the uncertainty mainly increased because there are bound to be long-term consequences for the Swiss economy because of the Mass Immigration Initiative, but the extent to which this will materialize highly depends on the political process. Hence, the extent was very uncertain at the time the firms responded to the survey. There are specifically two important potential long-run consequences of the initiative that have created uncertainty for firms. First, it is likely that the initiative will lead to a reduction in population growth relative to the state in which the initiative had not been accepted. This has probably reduced the firms’ expectations about future aggregate domestic demand. Moreover, firms might anticipate greater difficulties to find personnel with the right kind of skills in the future. Second, the initiative might negatively affect the trade relations with the European Union for some time to come. Both consequences are likely to have made investment in Switzerland more uncertain and therefore may have triggered changes in firm’s short- to medium-term investment and employment plans. The first hypothesis aims at evaluating whether the surveyed firms shared these perceptions about the effects of the initiative on uncertainty:

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<sup>6</sup> Later analysis showed that it was mainly persons affiliated with SVP, and persons from less privileged socio-economic background, lower educational attainment and from rural, German-speaking regions which voted in favour of the initiative (GFS 2014).

<sup>7</sup> The *Neue Zürcher Zeitung*, an important and renowned newspaper in Switzerland, wrote in an editorial article that the result represents a “slap in the face” for the political elite in Switzerland and a “caesura for Switzerland”. Many EU leaders expressed their concerns about the outcome too, among others because it nourished an ongoing debate within the European Union about costs and benefits of free movement of persons. For instance, the German chancellery published a statement saying that it “recognizes and respects the result, but it is nevertheless clear that it creates considerable problems.” The international importance of the vote was also recognized in a retrospective article by the *New York Times* on February 26, saying that “the referendum [...] sent shock waves across Europe”.

<sup>8</sup> More on how the responsible ministry is planning to implement the new constitutional amendment can be found on [https://www.bfm.admin.ch/bfm/de/home/themen/fza\\_schweiz-eu-efta/umsetzung\\_vb\\_zuwanderung.html](https://www.bfm.admin.ch/bfm/de/home/themen/fza_schweiz-eu-efta/umsetzung_vb_zuwanderung.html).



H1: Due to the acceptance of the Mass Immigration Initiative, firms expect increased recruitment costs and a lower potential growth rate for Switzerland in the future. Moreover, the initiative has decreased investment certainty.

Hypothesis 1 allows us to establish that the acceptance of the initiative was indeed a policy uncertainty shock. Subsequently, we are able to examine the effect of the policy uncertainty shock on investment and employment plans of firms shortly after the vote. In light of the available research studying the link between uncertainty and investment and employment, respectively, we expect that the vote had a negative effect on these two outcomes compared to a hypothetical situation in which the initiative were rejected. Concerning investment, a wide set of past empirical and theoretical studies show that increased uncertainty dulls investment.<sup>9</sup> The driving force behind this result is thought to be the asymmetry between the costs of increasing and decreasing the firm's capital stock. In particular, it is generally more costly for firms to reduce their capital stock than to increase it because of fixed costs, adjustment costs or simply because certain parts of the investment may be so specific that no other firm can use it, such that there is no resale market for the investment. When investment decisions are costly to revert, high uncertainty gives agents an incentive to postpone or even cancel their decisions until more information is available and the uncertainty is resolved (Bernanke, 1983). Put differently, if investment are at least partially 'irreversible', uncertainty causes firms to wait and see rather than to invest, as the costs of ending up with a wrong investment may be substantial while the opportunity costs of waiting are low (see e.g., Romer, 2011, Chapter 9; Dixit and Pindyck, 1994).

Like there are costs for adjusting capital, there are also costs for adjusting labour, such that the effects of uncertainty on firm employment decisions might be similarly negative as the effects on investment (Bentolila and Bertola, 1990; Dixit, 1997). Labour adjustment costs might arise due to hiring, training and firing costs (Hamermesh and Pfann, 1996) and might be substantial. For instance, Blatter et al. (2012) show that average hiring costs for Swiss firms range from 10 to 17 weeks of wage payments depending on the size of the firm and may reach up to 24 weeks of wage payments when the firm needs to fill many vacancies. Therefore, even though the adjustment costs that Swiss firms face might be relatively low in an international perspective as the Swiss labour market is relatively flexible, adjustment costs are present. The acceptance of the initiative is hence likely to have dampened firms' short- and medium-term employment plans.

The following two hypotheses incorporate these theoretical aspects. We are thereby interested in measuring the extent to which firms intend to adjust their investment and employment due to the MII and in finding out if such adjustments are higher for those firms that report to have been hit by an uncertainty shock. Additionally, we try to identify to what extent investment and employment is adjusted because of increased uncertainty or a change in future growth potential.

H2: Firms that foresee an increase in uncertainty regarding their investment plans during the next three years plan to reduce investment and employment as a consequence of the MII more than those that do not foresee such an increase in uncertainty.

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<sup>9</sup> Although this seems intuitive, there are some cases in which uncertainty might spur investment, as has been shown in an influential study by Bar-Ilan and Strange (1996). In their model, investment (such as buildings) take time to build. This implies that a firm that delays investment hence has no revenues and only firms which did not wait can profit from future rising prices. Therefore, the opportunity costs of waiting depend on the expected price in the future (not the price today). The longer the time lag between the start and the end of the project, the higher will be the possibility of extreme prices in the future. At the same time, the downside risks for the firm are limited, since it might be able to abandon its project for some fixed costs. In this set-up, the potential future benefits might exceed the (bounded) expected costs, such that it may make sense to invest despite the unknowns.

H3: Firms that foresee a medium-term reduction in potential growth in Switzerland plan to reduce investment and employment more than those that do not foresee such a reduction in growth.

Dixit (1997) provides a hypothesis as to which of the two production factors might adjust more strongly to the uncertainty shock. By analysing investment and employment decisions under uncertainty simultaneously, he concludes that firms tend to adjust the more flexible of the two factors. Which factor is more flexible depends on a comparison between the costs of increasing and decreasing capital and those of increasing and decreasing labour. The more irreversible the adjustment, the less flexible is the factor to adjust. With its relatively flexible labour market, employment decisions appear to be easier to reverse than investment decisions in Switzerland. From this perspective, we can formulate the fourth hypothesis as follows:

H4: Investment plans will be reduced more than employment plans. This holds especially for those firms that foresee an increase in uncertainty.

These four hypotheses about the effects of uncertainty on investment and employment summarize the main research questions studied in this paper. Extending on that, we study certain additional potential consequences of the vote on the reported future behaviour of Swiss firms. These consequences can be summarized into three categories: the effect of the vote on outward foreign direct investment (FDI), the effect of the vote on employment through raising expected future recruitment costs, and the effect of the general sentiment on the response behaviour of firms participating in the survey.

*FDI:* What is the effect of the vote on the plans of Swiss firms to invest abroad? For instance, it is feasible that firms responded to the vote by increasing outward foreign direct investment rather than to reduce their investment in Switzerland, especially relative to investment in Switzerland. In other words: did the acceptance of MII incentivize firms to shift investment abroad? This would be in line with the results of Witt and Lewin (2007). They show that rapid changes of a country's institutional environment can cause misalignment between a firm's need and the national institutional environment, which in turn increases the propensity of a company to invest abroad. An increased focus on outward FDI is especially likely for firms which have experience investing abroad, such as multinational or foreign-owned firms. For such firms, the initiative is likely to have reduced the relative attractiveness of Switzerland as investment location compared to other countries, and since their capital is mobile across borders, they might redirect it.

H5: Firms that foresee an increase in political uncertainty as a consequence of the MII plan to increase their investment activities abroad more than those that do not foresee such an increase in uncertainty.

H6: Firms that foresee a medium-term reduction in potential growth in Switzerland plan to increase their investment activities abroad more than those that do not foresee such a reduction in Swiss growth.

H7: An increase in FDI as a result of the initiative is especially likely for firms which carried out FDI in the past.

*Recruitment costs:* One important effect of the initiative was to affect firms' expected future access to the European pool of workers. What effect did this have on firms' medium-term employment plans? We study this question by looking at those firms that find it difficult to fill their job openings with resident Swiss workers, as these firms are likely to suffer more from the initiative's aim to restrict labour migration

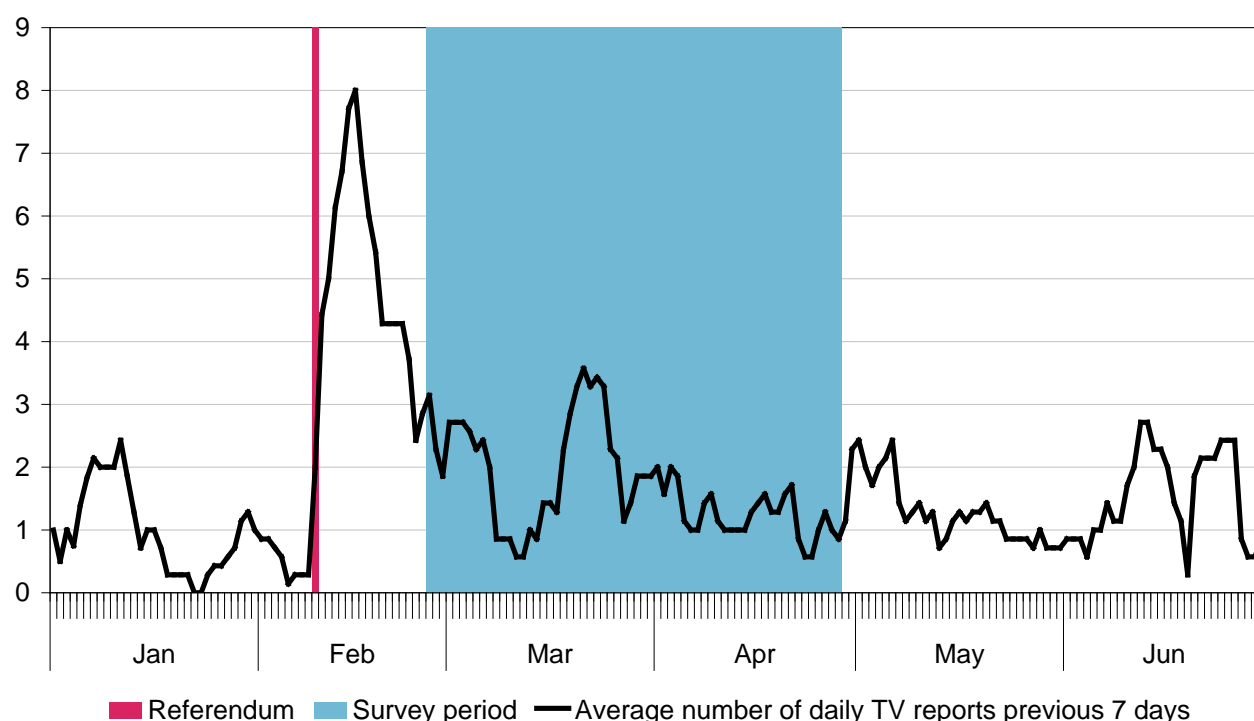
into Switzerland. We gauge a firm's dependence on the access to foreign workers by relying on the self-reported share of foreign workers *already employed* by the firm. Another proxy that we employ is the distance to the border, measuring a firm's potential to hire foreign workers such as cross-border workers (which are a significant fraction of the workforce in Switzerland). Since the current share of foreign workers and the distance to the border may not fully capture the firm's dependence on hiring foreign workers, we also expect that adjustments in investment and employment plans are larger for firms which expect that the initiative will increase recruitment costs in the future.

H8: Firms that employ a large share of foreign workers, are located near a border, or which generally expect rising future recruitment costs are more likely to reduce their employment and investment plans than firms that have so far been less reliant on foreign labour markets, are located further away from the border, or do not expect a rise in recruitment costs in the future.

Given that the new migration rules demanded by the initiative are not likely to be implemented before 2017, firms might, conversely, also respond to the anticipated recruitment difficulties by showing hoarding behaviour, i.e. they might plan to hire additional personnel in order to circumvent expected future shortages. Again, especially those firms that have relied heavily on workers coming from abroad in the past might act in this way.

H9: Employment plans will increase in the years 2014–2016. This holds especially for those firms that rely more on foreign labour.

**Figure 1: News coverage on television**

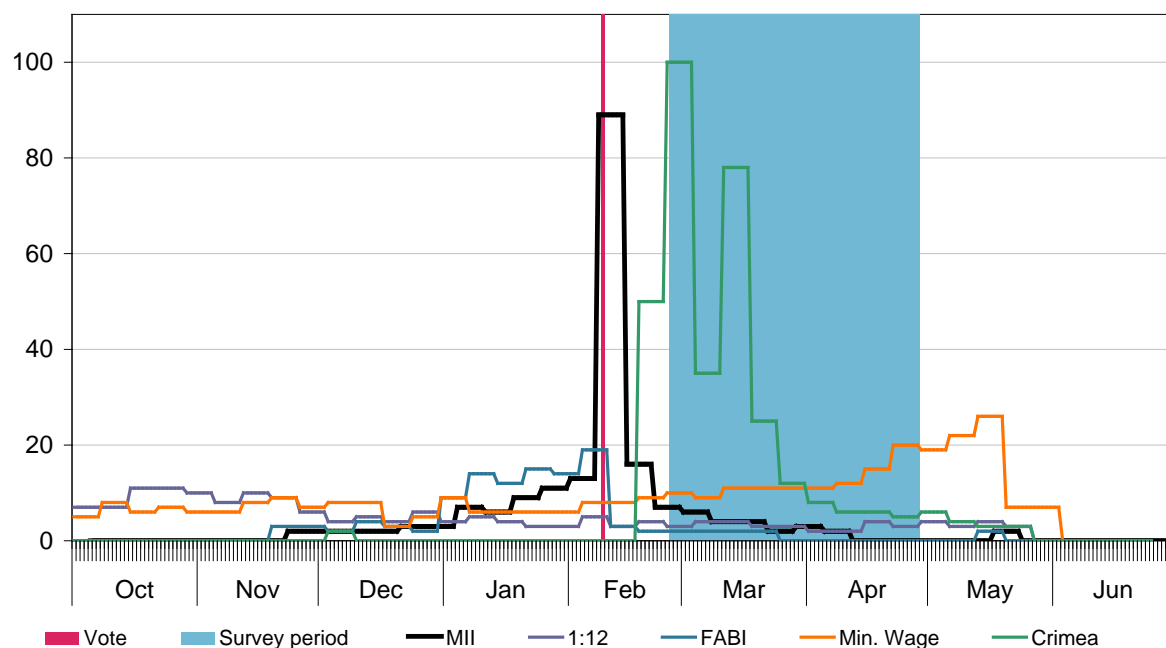


Notes: Average daily number of TV reports during the past seven days on migration and foreign policy broadcast on the most important German-speaking TV station. Source: Media Tenor.

*Sentiment:* To what extent are the opinions expressed by the firms in our survey – for instance, about the effect on Switzerland’s future potential growth – driven by general sentiment rather than actual economic fundamentals? Albeit the importance of general sentiment in the survey responses is difficult to grasp, we try to address this question in two ways. First, participants that work in an environment in which the initiative has received larger support (i.e. which are located in a region in which there was a larger share of yes votes) might be more willing to downplay its economic consequences.

Second, media attention was quite intensive, in particular shortly after the referendum. Figure 1 shows a seven-day moving average of the number of daily television reports on migration and foreign policy from January 2014 to July 2014. The data reflect the number of such TV reports broadcasted by the far most important German-speaking television station (SRF), with an average market share of 33.5% during the first half of 2014. The figure shows that the number of TV reports on migration and foreign policy on SRF clearly increases on February 9 when the Mass Immigration Initiative is accepted. The number of reports subsequently decreases but fluctuates on a higher level as before. This also holds during the survey period from February 26 to April 28 marked in the figure.

**Figure 2: Google Trends for MII and other events**



Notes: Weekly search volumes on Google in Switzerland normalised at 100 for the highest absolute value. The correlation with TV reports is 0.78. MII: Mass Immigration Initiative; 1:12: Initiative that requires the highest salary paid by a company to be no more than 12 times the lowest wage, FABI: Initiative on Funding and Upgrading Switzerland’s Rail Infrastructure; Min. Wage: Initiative on setting hourly minimum wages at 22 CHF; Crimea: Crimea as a proxy for the incident between Ukraine and Russia on the eve of Crimea turning Russia again (Referendum took place on March 16<sup>th</sup> 2014)

Taking Google Trends as an additional approximation for news coverage shows (Figure 2) that the initiative against mass migration was far more present in the media compared to other initiatives. Furthermore, the figure suggests that the Swiss media were indeed surprised by the acceptance of the initiative. If one considers the medial presence of the initiative against mass migration one week before

the election day, it shows that the media echo was similar to initiatives such as 1:12<sup>10</sup> and fabi<sup>11</sup> and lower than the minimal wage initiative<sup>12</sup>. Google Trends shows further that within Switzerland the acceptance of the initiative received nearly as much media coverage as international incidents, such as the Crimean peninsula turning Russian again.

Given such high media coverage it is to be expected that firms were influenced by media in some way. The special survey on the initiative started on February 25<sup>th</sup> 2014 and lasted until April 30<sup>th</sup>. It is possible that participants filling out the questionnaire at the beginning of the period where the “surprise” was still relatively fresh answered differently than participants answering in a phase when media attention had already started to settle. We examine the extent to which survey participants’ answers are influenced by the media coverage on the topic by relating the date at which survey participants answered the questionnaire to the number of TV reports<sup>13</sup> on the topic on SRF during the week before.

These hypothetical reflections let to the formulation of the following two hypotheses:

H10: Firms working in regions where there was a higher acceptance rate of the MII tend to see a lower impact on investment and employment of the MII than participating firms in other regions.

H11: The firms’ assessment on the impact of the initiative is systematically related to the media coverage on migration and foreign policy in the week prior to the date at which it filled out the questionnaire.

*Firm characteristics:* Which firms are likely to display the strongest immediate response to the uncertainty created by the acceptance of the MII? Considering the four dimensions of uncertainty created by the vote discussed in Section 2, we expect that the firms’ export orientation, their industry affiliations, and their size are likely to play a role apart from their past reliance on foreign personnel. More specifically, we expect that investment plans of firms operating in sectors which directly profit from one of the six other contracts of the Bilateral I agreements apart from free movement of persons (e.g. road and air traffic) react more strongly to the vote than firms in other sectors.<sup>14</sup> Similarly, firms operating in markets which directly profited from immigration-induced demand are likely to react more strongly to the vote. One important sector in this category is the construction sector which experienced a strong boom in the years prior to the vote. Among other factors, this was due to an increased demand for housing as a result of immigration.

In terms of a firm’s export orientation we expect that the vote has a higher impact on investment plans in firms which rely strongly on domestic demand, as these might fear future losses in immigration-induced demand. However, also firms which rely strongly on foreign demand are expected to experience a higher impact, as these firms might particularly fear the potential future restrictions on the access to the EU market due to the initiative. On the other hand, those firms with an approximately equal reliance on domestic and foreign demand are likely to be less affected by the vote as they might be able to shift sales toward the market with the relative lower reduction in demand. Lastly, we expect that investment plans

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<sup>10</sup> Initiative that requires the highest salary paid by a company to be no more than 12 times the lowest wage (rejected on November 24th 2013)

<sup>11</sup> Initiative on Funding and Upgrading Switzerland’s Rail Infrastructure (accepted on February 9th 2014)

<sup>12</sup> Initiative on setting hourly minimum wages at 22 CHF (rejected on May 18th 2014)

<sup>13</sup> Google trend data are available on a weekly basis only, subsequently TV reports are used to proxy media coverage in the empirical part. However, as the correlation between both series is 0.78, the empirical results are expected not to change substantially when using Google trend data.

<sup>14</sup> We consider the following industries represented in our data as particularly exposed to changes in the Bilateral I agreements: NACE rev. 2 industries 49 (land transportation), 51 (air transport) and 72 (scientific research and development).

of firms with a more irreversible capital stock react stronger to the vote than firms which are able to resell once acquired capital goods. One might thus expect that investment plans of smaller, more specialized firms respond more strongly to the vote than those of larger firms, as small firms may have less flexibility in using once acquired capital goods for different purposes. However, larger firms might have a lower propensity to wait and see than smaller firms after the uncertainty shock due to the availability of alternative investment options (e.g. because they can invest abroad). As differences in the extent of competition and productivity between small and large firms might also play a role, it is theoretically unclear how firm size shapes the intensity of the immediate firm response to the vote.

H12: We expect that firms that heavily rely on domestic demand or earn a large share of income abroad display the strongest immediate response to the uncertainty created by the initiative. Additionally, the construction sector and the industries specifically covered in the Bilateral I agreements are particularly exposed. The impact of firm size on the firm response is theoretically unclear.

#### 4. Survey design

In order to test the hypotheses elaborated in Section 3, we set up a questionnaire as a supplement to the bi-annual investment survey that is conducted by KOF amongst a large panel of private firms situated in Switzerland.<sup>15</sup> This supplementary questionnaire contains four blocks that are guided by the theoretical considerations and the hypotheses discussed in section 3.<sup>16</sup>

While a first block relates to the consequences of the MII for future investment activities, the second concentrates on its consequences for future employment plans. For those firms that are not a subsidiary of a presumably larger company and therefore in a position to decide on investment abroad, we have a third block asking how such activities are likely to be affected by the MII. Finally, we include a number of questions that are intended to assess the effects of the MII on the environment in which the firms operate. These include the effect of the MII on potential growth for Switzerland, the development of recruitment costs and the investment climate in general. Finally, we ask for the share of employees from a foreign country.

Regarding the first three blocks, the time horizons of the questions always include 2014, 2015, 2016, and from 2017 onwards. These time dimensions were chosen to reflect that the government is given three years to implement this initiative. Wherever possible a 5-point Likert scale is used. As not all firms might be willing or able to answer such forward-looking questions, we also allow for the answering option “not specified”.

The standard part of the investment questionnaire to which the special survey is added asks for quantitative information on investment activity in 2012, 2013 and 2014. It is split up between construction investment on the one hand and machinery and equipment investment on the other. Regarding 2015, it is asked whether the respective firm intends to increase or decrease its investment activities using a 5-point Likert scale. All this information can of course also be used to analyse the hypotheses formulated in Section 3.

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<sup>15</sup> The KOF investment survey is carried out twice a year. In spring firms usually receive a questionnaire which is reduced to minimal requirements foreseen by the business survey harmonization program. In autumn a more elaborated questionnaire is sent to participants. In spring 2014 the special survey on the initiative against mass migration was added to the regular investment survey.

<sup>16</sup> An English translation of the actual questionnaire sent in German, French or Italian is shown in Appendix: Questionnaire.

Further variables for the analysis are merged from the ordinary investment survey and other sources. The data on distance to the border stems from Henneberger and Ziegler (2011) and show the distance to the next border crossing for each firm's zip code. Acceptance rate of the MII is taken from the Swiss Federal Statistical Office. The export shares stem from the investment and innovation surveys conducted by KOF and data on the number of TV reports regarding the MII are kindly provided by Media Tenor.

**Table 1: Description of survey participants**

	Firms		Method		Sizeclass		
	Number of contacted firms	Response rate	paper-based	online	small	medium	large
Manufacturing	3213	34%	54%	46%	51%	40%	4%
Construction	711	28%	61%	39%	42%	36%	19%
Service Sector	4173	34%	57%	43%	39%	34%	12%
Whole Sample	8097	34%	56%	44%	44%	36%	9%

Note: The survey was sent to a sample of firms that aims to reflect the Swiss economy as closely as possible.

The questionnaires were sent to the sample of firms on February 25th, 2014. Answers were accepted until May 5th, 2014. From the 8097 firms that were contacted 2723 valid questionnaires were received, corresponding to a response rate of approximately 34%. Firms in the manufacturing, construction and services sectors cover 40%, 9% and 51% of the sample respectively. The response rate was quite similar within sectors, with that among construction firms being somewhat lower. Table 1 summarizes the information regarding the firm sample.

## 5. Survey results and econometric analysis

### 5.1. Descriptive results

#### *Summarizing the survey results*

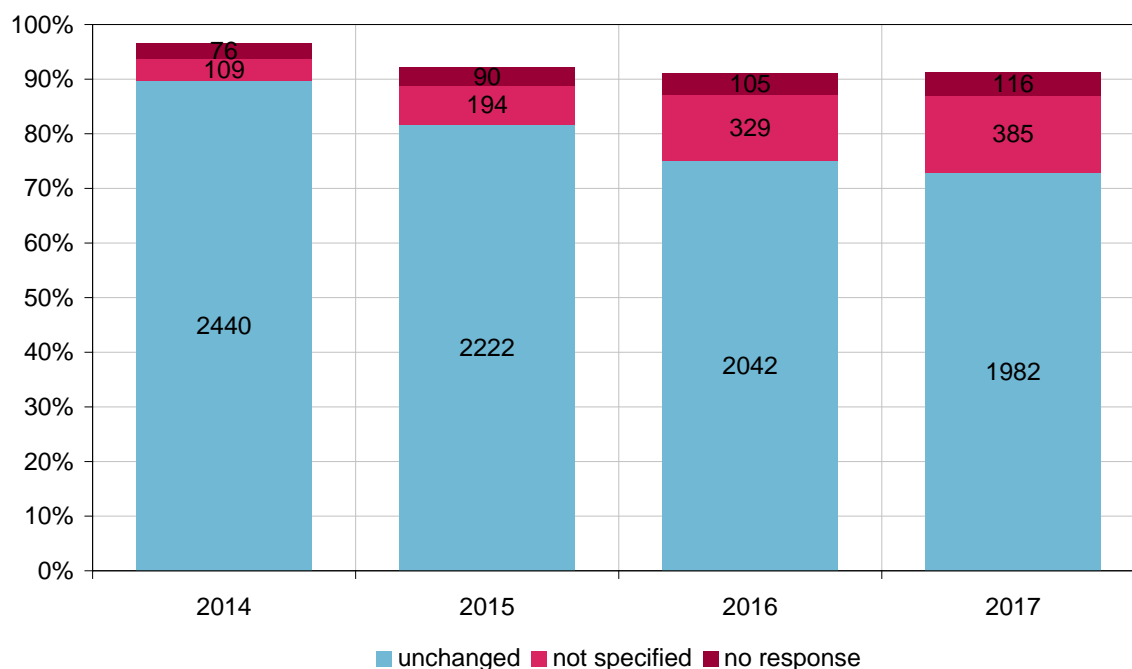
In this subsection we present the survey responses in a descriptive way. We show separate graphs for those indicating that the acceptance on the initiative did not have an effect on the respective economic variable or did have an effect. The first group contains all those participants that answered “does not affect”, “not specified” or decided to not answer at all (“no response”). The second group contains all those firms that reported an effect of the acceptance of the initiative (strongly increases, increases, decreases or strongly decreases).

**Figure 3: Firms' assessments of macroeconomic variables**



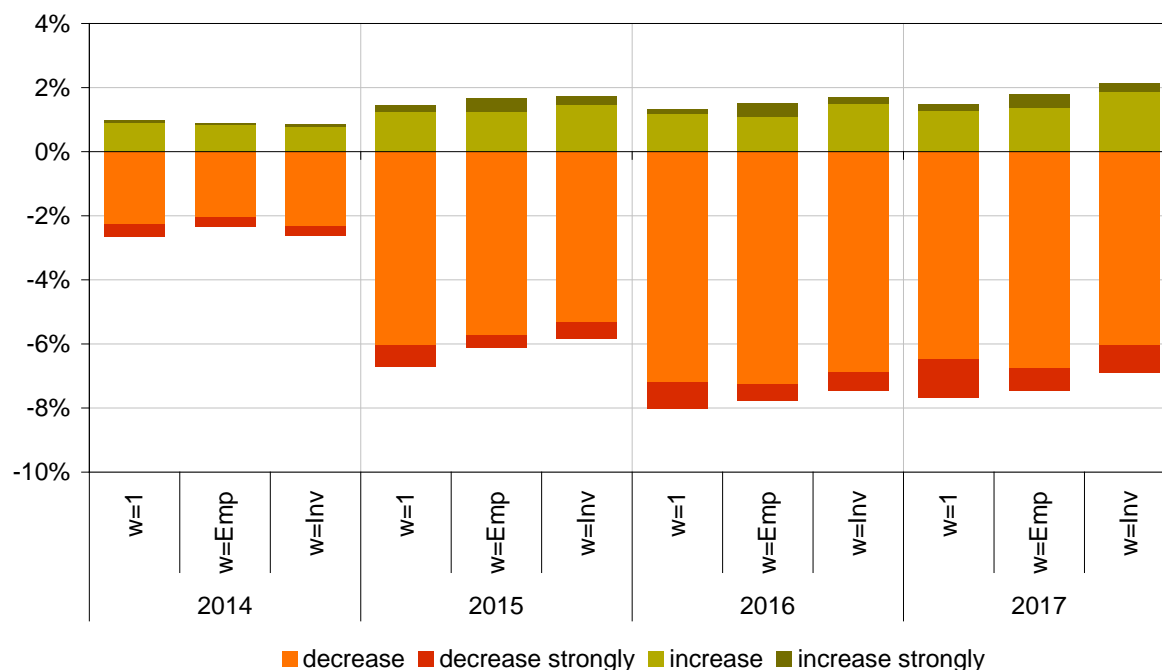
Notes: The firm-specific answers are aggregated in three ways: "w=1" shows results using equal weights; "w=Emp" shows results when firms are weighted using the number of employees; and w="Inv" shows results when firms are weighted using their reported investment sums for 2013.

**Figure 4: Firms' change of Investment in Switzerland due to MII**



Notes: The bars show the share of respondents reporting investment within Switzerland will remain unchanged and the share of respondents which answered "not to specify" or decided not to answer the question at all. The numbers in the bars represent the absolute amount of respondents belonging to each of those groups.





Notes: The firm-specific answers are aggregated in three ways: “w=1” shows results using equal weights; “w=Emp” shows results when firms are weighted using the number of employees; and w=“Inv” shows results when firms are weighted using their reported investment sums for 2013.

Figure 3 shows the answering distribution of the questions regarding the influence on investment certainty, recruitment costs and growth potential. For these three questions the majority of the participating firms indicated that the acceptance of the initiative did not affect the relevant economic variable in question. Depending on the specified weight, around 12 to 17% of the participants indicated that their investment certainty decreased. Approximately 1 to 2% stated that due to the acceptance of the initiative their investment certainty has increased.

Additionally does a significant share of firms believe that recruitment costs will increase in the future as a direct result of acceptance of the initiative. Depending on the weight, between 21% and 32% expect an increase. Larger firms (firms with more employees) have a higher probability to expect a rise in recruitment costs than small firms. Approximately one percent of all participants expect that the acceptance of the initiative will lead to a decrease in recruitment costs.

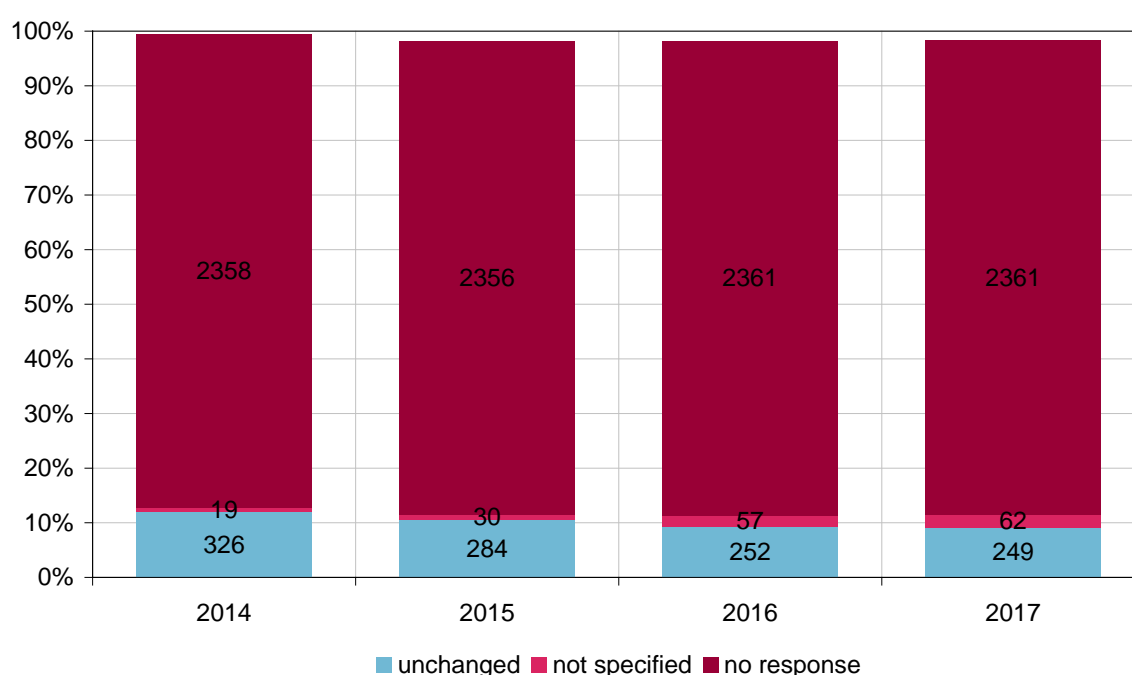
Finally, 46% and 49% of firms think that the acceptance of the initiative will hamper future growth potential of the Swiss economy. On the other hand, 2% to 4% of Swiss companies see an opportunity in the acceptance of the initiative and believe that Swiss future growth potential has been enhanced by the initiative.

Figure 4 presents the direct effect of the acceptance of the initiative on investment. For 2014, approximately 97% of the participating firms belong to the group which answered “does not affect”, “not specified” or did not answer at all. Although this share is decreasing over the forecasting horizon, it never falls below 90%, indicating that most of the firms’ fixed asset investments are not expected to be affected by the acceptance of the initiative. Furthermore, the share of item non-response increases slightly over time. The share of firms actively answering “not specified” shows a similar but more pronounced development. The increase in “not specified” and item non-response suggests that the acceptance of the

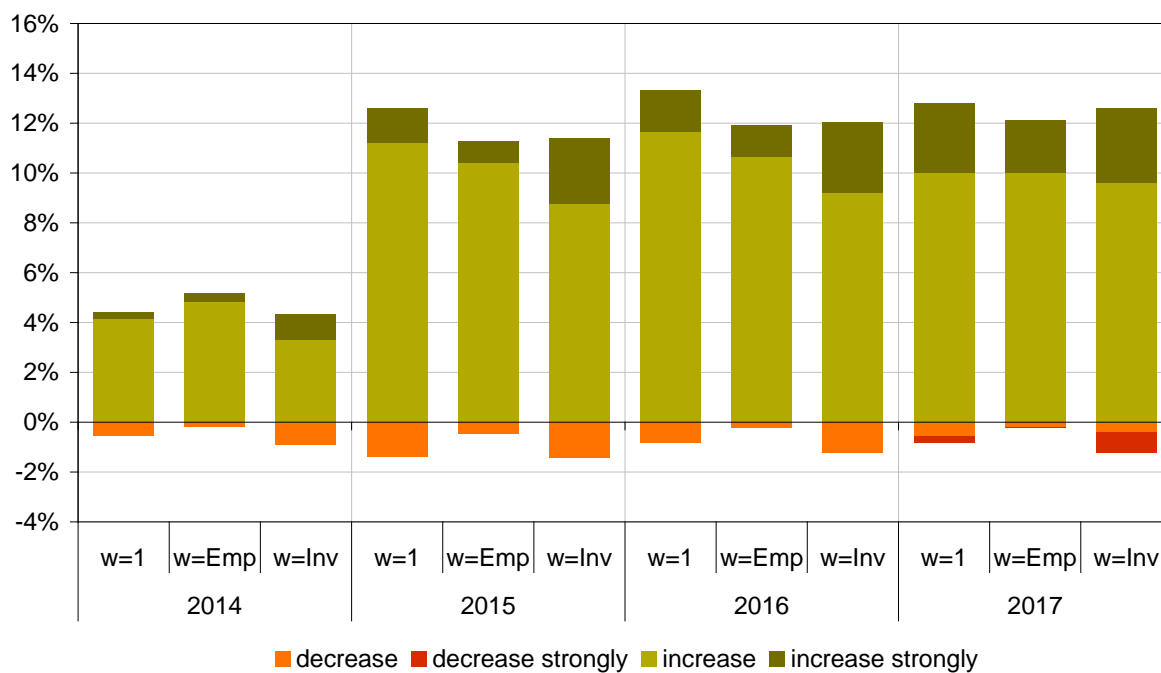
initiative alone is not sufficient to actively influence future investment decisions. As already mentioned in section 2, the initiative contains vague wording, the exact realisation has yet to be determined. In light of that, the increase in “not specified” and item non-response can be interpreted as uncertainty regarding the exact implementation. This becomes more relevant the further one looks into the future.

The second part of Figure 4 presents the answers of those firms for which investment in Switzerland is expected to change. For 2014 around 2% of the firms plan to decrease their investment and approximately 1% have plans to expand investment due to the acceptance. The relatively low share of firms indicating an effect for 2014 might be due to the fact that investment plans for the current year were finalized already in late autumn of the previous year. Therefore, it might be difficult to change or even stop investment decisions whose realisation might already be set in motion. For the following years the share of those firms which plan to decrease their investment increases to 6% in 2015 and rises further to 7% - 8% in the upcoming years. The same gradual increase over time can be observed for those firms which plan to expand their investment due to the initiative. The share successively increases to approximately 2%.

**Figure 5: Firms change of outward FDI due to the acceptance of MII**

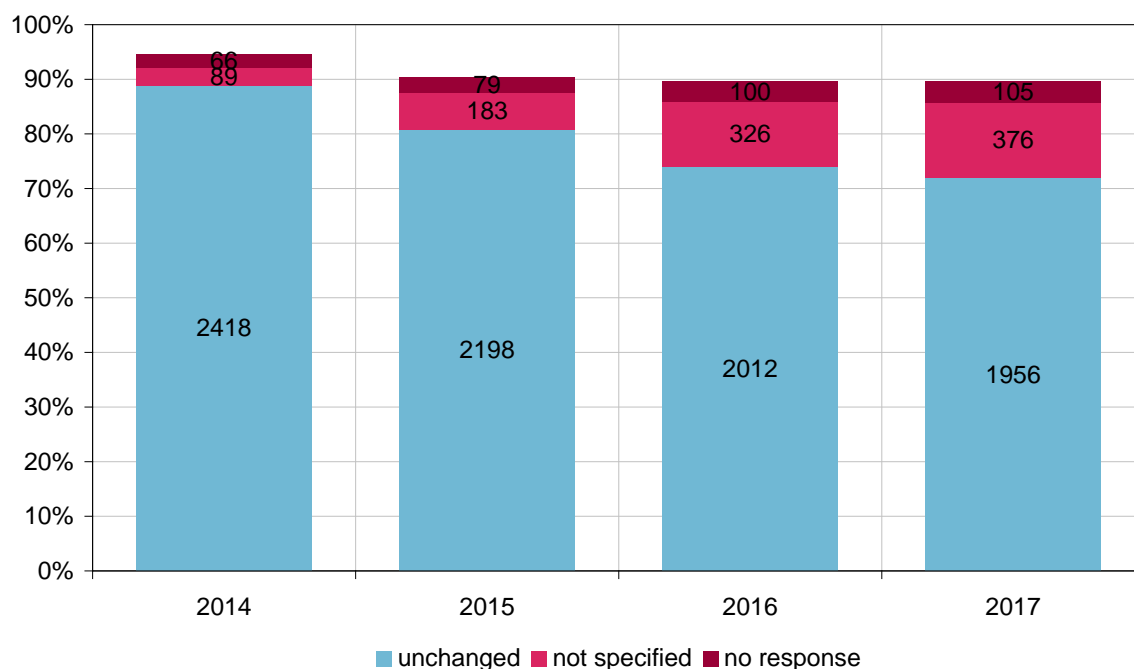


Notes: The bars show the share of respondents reporting outward FDI will remain unchanged and the share of respondents which answered “not to specify” or decided not to answer the question at all. The numbers in the bars represent the absolute amount of respondents belonging to each of those groups.

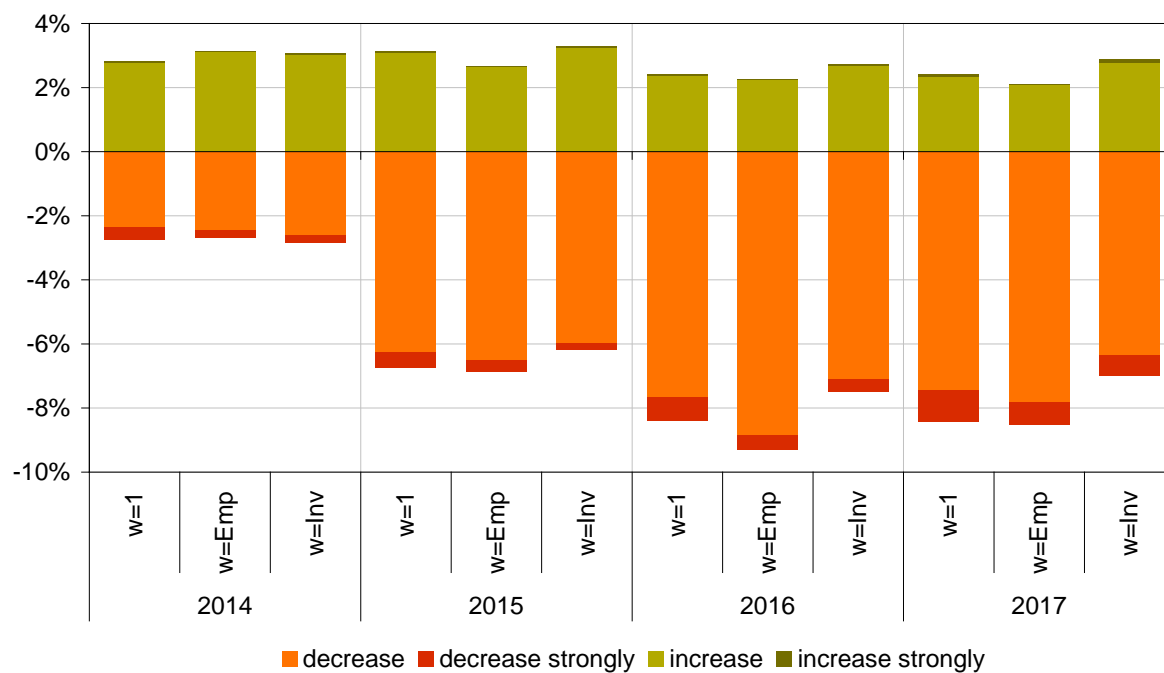


Notes: The firm-specific answers are aggregated in three ways: “w=1” shows results using equal weights; “w=Emp” shows results when firms are weighted using the number of employees; and w=“Inv” shows results when firms are weighted using their reported investment sums for 2013.

**Figure 6: Firms expected change of Employment in Switzerland due to the acceptance of MII**



Notes: The bars indicate the percentage of respondents reporting employment within Switzerland will remain unchanged and the share of respondents which answered “not to specify” or decided not to answer the question at all. The numbers in the bars represent the absolute amount of respondents belonging to each of those groups.



Notes: The firm-specific answers are aggregated in three ways: “w=1” shows results using equal weights; “w=Emp” shows results when firms are weighted using the number of employees; and w=“Inv” shows results when firms are weighted using their reported investment sums for 2013.

**Figure 7: Sector specific results presented as balance statistics**



Notes: Sector specific results presented as balance statistics. All answers are employment weighted.



Notes: Sector specific results presented as balance statistics. All answers are investment weighted.

In addition to the influence of the acceptance of the initiative on investment within Switzerland, participants were asked to evaluate its influence on their foreign investment. In order to direct the question only to those firms which actually invested abroad, some filter questions were asked prior to the actual question. First, participants were asked whether they are a subsidiary and therefore do not have direct influence on investment decisions abroad. Overall about 38% of the firms stated that this would be the case. Further, those participants who potentially control foreign investment (62%) were asked whether they have already invested abroad and whether they intend to do so in the future. As shown in Table 2, approximately 18% of these firms stated that they undertook some investment abroad in the past and around 21% stated that they will do so in the future.

**Table 2: Firms investing abroad**

#		Past			%		Past		
		Yes	No				Yes	No	
Future	Yes	277	68	345	Future	Yes	16.8	4.1	20.9
	No	21	1281	1302		No	1.3	77.8	79.1
		298	1349	1647			18.1	81.9	100.0

Note: The numbers refer to those firms stating to be responsible for undertaking investment abroad (i.e. subsidiaries are excluded)

Figure 5 shows the influence of the acceptance of the initiative on participants' foreign investment behaviour. Note that, the first part refers to the whole sample, whereas the second includes only those participants which can invest abroad. It demonstrates the large share of firms that did not or could not respond and reveals the small share of participants for which foreign investment are actually affected. However, within this small share, the firms' consent of the effect is rather clear. About 4% of the relevant participants in 2014 and approximately 12% in the following years plan to increase their foreign investment due to the acceptance of the initiative. Approximately one percent of firms states that their foreign investment will decrease in the upcoming year.

In addition to the effect on investment, we are interested in labour market effects. As we have shown above, about one quarter of Swiss firms expect recruitment costs to rise due to the acceptance of the initiative. Only one percent is convinced that recruitment costs will actually decrease. In order to understand in which way an expected rise in recruitment cost affects employment, participants were asked to state how the acceptance of the initiative influences their future number of employees.

Figure 6 shows that the share of firms which plan to increase their number of employees due to the acceptance of the initiative is relatively constant at approximately 3%. The share of firms which fear a cutback in employment increases over time. For 2014 a little over 2% of Swiss firms state to diminish their work force because of the acceptance of the initiative. For 2015 the share climbs to over 6% and in the consecutive years the share increases beyond 8%.

These first explorative results suggest that the initiative is expected to have negative employment effects as more Swiss private firms plan to reduce their number of employees than the opposite. Additionally, these results provide little if any evidence that it will come to a herding of employees (i.e. an increase in the employment stock in order to circumvent future problems to recruit workers). Only for the year 2014 does the number of firms who will increase their work force due to the acceptance of MII outnumber the firms which plan to reduce their personnel.

Finally, answers can be analysed on a more disaggregated level. Figure 7 presents the balance statistic of the variables discussed above separately for the manufacturing (NACE rev. 2 sectors 10–40), construction (NACE 41–43) and service sector (NACE 45–96). The results in the first graph are thereby based on employment weights and those in the second graph are obtained via employment weights. Comparing the results show that among sectors results are rather similar. However, they appear to be slightly more pronounced in the construction sector. The most significant difference can be found when looking on the effect of the initiative on foreign investment. The results for the construction sector are highly sensitive on the weight chosen. The figures indicate that the acceptance of the initiative causes construction companies with many employees to shift their investment from Switzerland towards foreign countries.

### *Quantifying qualitative results*

The questions of the special survey were added to the regular spring investment survey. Subsequently, most of the firms participating in this special survey also participated in the regular spring investment survey. Using the quantitative investment sums from the regular spring investment survey allows us to estimate some quantitative effects of the MII on investment. Unfortunately we are able to provide this kind of estimation for the year 2014 only, as the survey contains no quantitative question on investment from 2014 onwards<sup>17</sup>. In order to estimate the quantitative effect of the acceptance of the MII, we think of the acceptance of the MII as a possible shock to a firm's investment behaviour. Additionally, we

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<sup>17</sup> In spring 2014 survey participants were asked to provide quantitative investment data for 2012, 2013 and 2014. For each year firms reported investment in construction and investment in equipment and machinery separately.

assume that it can be induced from a firm's response whether it experienced a policy shock or not. The firms can hence be grouped into firms which were negatively treated, positively treated or not treated by the acceptance of the MII. The quantitative effect of the initiative on investment can subsequently be gauged by comparing investment growth for each group. However, note that this computation yields a valid treatment effect of the MII on investment only if firms which were negatively or positively treated by the initiative would not systematically differ in their investment behaviour for 2014 if the MII were not accepted (e.g., the acceptance of the initiative needs to be orthogonal to pre-existing investment plans). We find some evidence in favour of this identifying assumption, as we do not find any statistically significant difference in the changes of investment between negatively treated and untreated firms from 2012 to 2013, i.e. before the MII was accepted. This result supports the assumption that the firms would have displayed common investment growth in the absence of treatment.

Overall, three different subsamples of firms were formed. The first subsample neglects all those participants that indicated their investment would be positively influence by the acceptance of the initiative, i.e. it omits all those companies which experienced a positive policy shock. The second sample neglects all those that indicated to be negatively influence and the third sample contains all those participants that answered "does not affect" or "not specified". The latter group consequently contains all those firms which state that the acceptance of MII does not represent a policy shock. Subsequently for each sample growth rates are calculated using the standard aggregation procedure as applicable for the investment survey. Although mathematical computation of standard errors of growth rates is theoretically possible, it is common practice to estimate standard errors using resampling strategies.<sup>18</sup> The results of the resampling procedure are summarized in Table 3. The point estimator refers to the mean of the growth rate within one group and the upper and lower bound represent 95% confidence intervals.

**Table 3: Quantification of the effect on nominal investment growth in Switzerland, 2014**

	full sample	sample without positive influence	Sample without negative influence	Sample without positive and negative influence
Upper bound	3.26	3.14	4.31	4.18
<b>Point estimator</b>	<b>3.02</b>	<b>2.90</b>	<b>4.06</b>	<b>3.93</b>
Lower bound	2.78	2.67	3.82	3.69

Notes: The upper and lower bound refer to a 95% confidence interval. The point estimator is the mean of all bootstrap estimations.

<sup>18</sup> The bootstrap method for the case of i.i.d. errors has been extensively studied (see. Efron (1979, 1982)) and Yeo et al. (1999) discuss resampling bootstrap in more complex survey setups. The chosen bootstrap setup consists of resampling completed questionnaires with replacement and computing the growth rate for total investment contained in the redrawn sample. This procedure is repeated separately for each group over 30,000 times, resulting in over 30,000 growth rate estimates. Based on these estimates, means and variances are calculated. Comparing the mean of growth rates with the growth rate computed from the original sample shows that our bootstrap procedure is not biased. The variance is used to build confidence intervals around the point estimates assuming the estimations are approximately normally distributed.

The estimations in Table 3 demonstrate that quantitative investment figures reported by survey participants are consistent with their qualitative indications.<sup>19</sup> Neglecting those firms that indicated a positive effect on their nominal fixed asset investment leads to a slight decrease in investment from 3.02% to 2.90% for 2014. However, the difference is not statistically significant. Neglecting those that indicated to be negatively influenced by the acceptance of the MII leads to an increase of the growth rate by approximately one percentage point. This increase is statistically significant. In order to calculate a net effect of acceptance of the MII on fixed asset investment in Switzerland for 2014 all participants that have indicated to have been influenced (either positively or negatively) need to be analysed. The results are shown in the last column of Table 3 and provide evidence that without the acceptance asset fixed investment would have been approximately 0.9 percentage points higher. Hence, the quantification of the qualitative survey answers with reported investment figures indicates that the acceptance of the Mass Immigration Initiative has negatively influence firm's fixed asset investment in Switzerland for 2014. Interestingly, the size of the effect of the MII estimated by this thought experiment is consistent with the measured change in expectations of Swiss firms when comparing the investment survey of autumn 2013 with the one in spring 2014. In autumn 2013 participants of the KOF investment survey expected an increase of their nominal fixed asset investment in 2014 of 4.2% (see KOF Bulletin Nr. 70). In spring 2014 (February 2014 – April 2014), survey participants expect an increase in their fixed asset investment of 2014 of 3.0%. The resampling estimates reveal that a substantial part of this reduction could indeed be due to the acceptance of the MII.

## 5.2. Econometric analysis

Section 5.1 summarized the survey results in a descriptive way and provided a comprehensive overview of the data collected. In this section we will further deepen our data analysis and formally test the hypothesis elaborated in Section 3.

In Table 4, we use the firms' qualitative answers regarding the effect of MII on their investment plans in the period 2014–2017 as dependent variable. These can take on the value of -1 if the firm plans to decrease or strongly decrease investment because of the initiative in a given year, 0 if it leaves the investment plans unchanged, and 1 if the firm plans to increase or strongly increase investment because of the initiative. Since this outcome variable is categorical but has a natural ordering, the regressions are estimated using an ordered probit regression model.<sup>20</sup>

The set of explanatory variables are guided by the hypotheses described in Section 3. Since, first, regression coefficients from such a model are not directly interpretable, and since, second, the marginal effect of a variable of interest on the dependent variable depends on the values of the other covariates of the model due to its nonlinearity, the table presents average marginal effects (AME). To be precise, the table reports the probability that a firm wants to decrease investment in a given year because of the MII (i.e. that the outcome takes on the value -1) given a one unit increase in the variable of interest, evaluated on the values of the covariates for each firm in the sample and subsequently averaged across all firms. For example, the first coefficient in the first column of the table implies that firms that report that investment certainty has decreased have a 4.1 *percentage point* higher probability to answer that

<sup>19</sup> This should be little surprising as already Schenker (2007) has shown that qualitative and quantitative answers are mostly congruent in KOF investment survey.

<sup>20</sup> Results are qualitatively very similar if an ordered logit model is estimated instead. The cutoff values are omitted from the regression output. They are statistically different from each other in most models, indicating that we should not collapse our ordered categorical outcome with three values into a binary variable with two.



they aim at reducing investment in 2014 because of the MII vote compared to firms that do not perceive a change in investment certainty, all else equal.<sup>21</sup>

**Table 4: Determinants of the probability of planning to reduce investment because of the acceptance of the initiative, by year**

Investment in Switzerland	(1) 2014	(2) 2014	(3) 2014	(4) 2015	(5) 2015	(6) 2015	(7) 2016	(8) 2016	(9) 2016	(10) 2017	(11) 2017	(12) 2017
Investment certainty decrease	0.041*** (4.009)	0.044*** (4.749)	0.052*** (5.678)	0.142*** (11.246)	0.150*** (12.461)	0.154*** (15.275)	0.175*** (13.290)	0.179*** (14.490)	0.184*** (18.183)	0.170*** (12.807)	0.175*** (13.909)	0.176*** (14.287)
Investment certainty increase	-0.070*** (-3.350)	-0.070*** (-3.474)	-0.070*** (-3.509)	-0.054 (-1.567)			-0.093** (-2.394)	-0.088** (-2.269)	-0.062** (-2.099)	-0.109*** (-2.827)	-0.108*** (-2.797)	-0.108*** (-2.805)
Potential growth decrease	0.007 (0.852)			0.020 (1.518)			0.044*** (2.919)	0.048*** (3.238)	0.060*** (4.949)	0.053*** (3.442)	0.058*** (3.817)	0.058*** (3.822)
Potential growth increase	-0.038*** (-2.584)	-0.040*** (-2.728)	-0.047*** (-3.402)	-0.071*** (-2.787)	-0.081*** (-3.352)	-0.069*** (-3.380)	-0.083*** (-2.700)	-0.085*** (-2.775)	-0.090*** (-3.752)	-0.088*** (-2.863)	-0.087*** (-2.851)	-0.086*** (-2.840)
Distance to border	-0.000 (-1.260)			0.000 (0.111)			-0.000 (-0.844)			-0.000 (-0.900)		
Share of foreign employees	0.000 (0.657)			0.001** (2.497)	0.000** (2.231)	0.001*** (4.029)	0.001** (1.973)	0.001** (2.530)	0.001*** (3.341)	0.000 (1.526)	0.001** (2.120)	0.001** (2.060)
Recruitment costs increase	0.017** (2.173)	0.020** (2.555)	0.017** (2.357)	0.024** (1.984)	0.025** (2.213)	0.025** (2.542)	0.012 (0.894)			0.019 (1.325)		
Acceptance rate	-0.000 (-0.786)			-0.000 (-0.689)			0.000 (0.095)			-0.000 (-0.759)		
Time trend	-0.000 (-0.732)			-0.000 (-0.838)			-0.000 (-0.348)			0.000 (0.171)		
TV reports	-0.008** (-2.398)	-0.007** (-2.154)	-0.006* (-1.904)	-0.001 (-0.109)			0.006 (0.874)			-0.001 (-0.137)		
Large firms	-0.014 (-1.514)	-0.018** (-2.010)	-0.021** (-2.499)	0.006 (0.432)			0.011 (0.653)			0.010 (0.608)		
Small firms	0.006 (0.848)			0.013 (1.052)			0.000 (0.014)			-0.003 (-0.223)		
Construction	-0.011 (-0.953)			-0.026 (-1.333)			0.036* (1.669)	0.043** (2.338)	0.053*** (3.181)	0.031 (1.433)	0.039** (2.071)	0.040** (2.103)
Services	0.000 (0.035)			-0.006 (-0.514)			-0.004 (-0.303)			-0.014 (-0.971)		
Export share of less than 5%	0.030*** (3.066)	0.030*** (3.282)	0.028*** (3.332)	0.022 (1.623)			0.025 (1.542)			0.040** (2.491)	0.038** (2.442)	0.038** (2.454)
Export share of more than 66%	0.021** (2.006)	0.022** (2.121)	0.017* (1.751)	0.021 (1.340)			0.030 (1.597)			0.031 (1.616)	0.034* (1.789)	0.037** (1.965)
Bilateral I agreements	0.010 (0.664)			-0.002 (-0.070)			-0.001 (-0.038)			0.015 (0.485)		
Observations	1,346	1,346	1,573	1,297	1,297	1,967	1,221	1,221	1,888	1,184	1,184	1,204
pseudo R2	0.259	0.243	0.246	0.327	0.314	0.292	0.356	0.348	0.332	0.354	0.349	0.354
Log Likelihood	-175.6	-179.3	-213.8	-289.7	-295.6	-494.3	-300.9	-304.3	-513.6	-296.9	-299.3	-301.4
DF	17	8	8	17	4	4	17	6	6	17	8	8

Notes: z-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Ordered probit regressions are carried out and average marginal effects are reported.

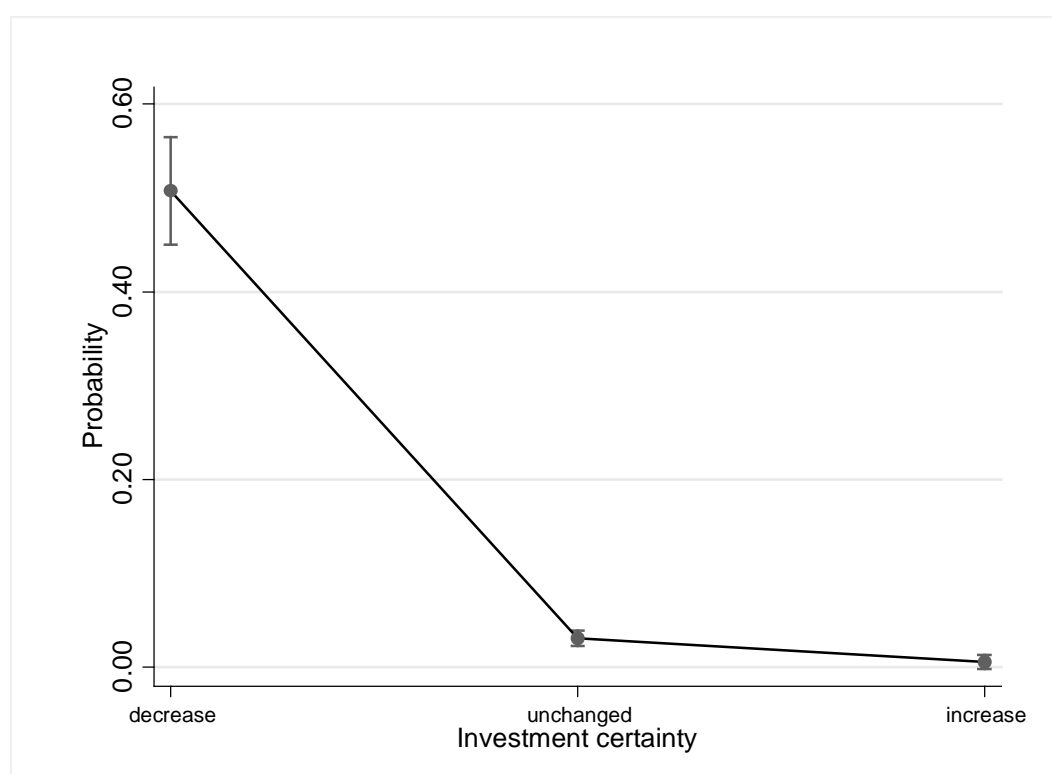
Table 4 – as well as the following three tables – presents three models per year the dependent variable refers to. In the first, we use the full set of covariates which are potentially relevant in explaining the outcome according to the hypotheses described in Section 3.<sup>22</sup> Due to missing observations, particularly concerning the export share in sales and due to item non-response, we are left with between 1184 and 1346 observations in these specifications using all variables (Columns (1), (4), (7) and (10) in Table 4). In each second column within a year, we then restrict the set of explanatory variables using a general-to-specific variable selection algorithm using the same sample of firms as used in the full specification. The

<sup>21</sup> The baseline category to which each firm is compared to in these regressions are manufacturing firms with an export share between 5 and 65%, which are of medium size, and neither declared to suffer from increased or decreased investment certainty nor expect a higher or lower growth potential for Switzerland in the future. They also do not expect rising future recruitment costs.

<sup>22</sup> We omit the binary variable indicating firms which expect recruitment costs to decrease because of the initiative. The reason is that they amount to a very small proportion of the total firm sample (less than 1%).

variables are backwardly selected if they are statistically significant on the 10 percent level. Each time a variable is included, previously dropped covariates are reconsidered for inclusion into the model (using a significance level of 5 percent). Hence, these columns reveal those explanatory variables which are statistically most robustly related to the outcome considered. Finally, the third model presented uses the same set of explanatory variables as selected in the second model while extending the sample to include all observations for which these selected explanatory variables are available. This gives us an impression of the sensitivity of the results regarding the sample of firms. In general, extending the sample of firms has no qualitative influence on the results.

**Figure 8: Predicted probability of reducing investment plans in 2016**



Notes: Predicted probability of reporting reduction of investment plans in 2016 due to initiative depending on effect of initiative on investment certainty.

The first regression rows in Tables 4 and 5 provide strong evidence in favour of Hypothesis 2. In particular, the results show that decreased investment certainty reduce investment plans. This negative impact is strong and highly statistically significant. The negative association holds throughout all years 2014–2017 and its magnitude increases over time. Moreover, the dummy indicating the effect of the MII on investment certainty is always selected by the general-to-specific model selection algorithm. The estimates in Columns (7) to (9) of Table 4 imply that the probability of aiming at reducing investment because of the initiative in 2016 increases by 18 percentage points if the firm reports to experience decreased investment certainty.<sup>23</sup> Conversely, firms perceiving increased investment certainty due to the

<sup>23</sup> Note that the fact that employment plans respond similarly to increased investment uncertainty as investment plans do suggests that labour and capital are on average complementary: decreasing investment plans is correlated with decreasing staffing plans for a given year. If investment were on average labour-saving, we would expect to see a different impact.

vote are significantly less likely to aim at reducing investment in a given year. This relationship is, however, statistically less robust.

**Table 5: Determinants of the probability of planning to reduce employment because of the acceptance of the initiative, by year**

VARIABLES	(1) 2014	(2) 2014	(3) 2014	(4) 2015	(5) 2015	(6) 2015	(7) 2016	(8) 2016	(9) 2016	(10) 2017	(11) 2017	(12) 2017
Investment certainty decrease	0.045*** (4.406)	0.043*** (4.516)	0.046*** (4.733)	0.113*** (7.116)	0.119*** (7.890)	0.122*** (9.958)	0.145*** (8.934)	0.143*** (8.874)	0.133*** (10.095)	0.152*** (9.334)	0.151*** (9.362)	0.145*** (10.855)
Investment certainty increase	-0.049** (-2.278)	-0.048** (-2.243)	-0.050** (-2.262)	0.017 (0.434)			0.055 (1.062)			0.021 (0.430)		
Potential growth decrease	0.014** (2.000)	0.012* (1.794)	0.012* (1.798)	0.019 (1.454)			0.034** (2.265)	0.034** (2.266)	0.051*** (4.219)	0.043*** (2.833)	0.042*** (2.755)	0.054*** (4.308)
Potential growth increase	-0.041*** (-2.905)	-0.042*** (-2.957)	-0.043*** (-2.976)	-0.119*** (-4.198)	-0.126*** (-4.612)	-0.103*** (-4.603)	-0.114*** (-3.291)	-0.113*** (-3.276)	-0.101*** (-3.730)	-0.117*** (-3.396)	-0.118*** (-3.454)	-0.104*** (-3.695)
Distance to border	0.000 (1.595)			0.000 (1.187)			0.000 (0.073)			-0.000 (-0.217)		
Share of foreign employees	0.000*** (3.025)	0.000*** (2.710)	0.000*** (2.637)	0.001** (2.488)	0.001** (2.255)	0.000** (2.091)	0.001*** (4.329)	0.001*** (4.394)	0.001*** (2.943)	0.001*** (3.979)	0.001*** (4.189)	0.001*** (3.079)
Recruitment costs increase	-0.007 (-0.963)			0.025* (1.877)	0.029** (2.227)	0.027*** (2.633)	0.045*** (2.984)	0.049*** (3.239)	0.053*** (4.339)	0.045*** (2.949)	0.046*** (3.020)	0.049*** (3.877)
Acceptance rate	0.000 (0.241)			0.000 (0.469)			-0.000 (-0.258)			0.000 (0.293)		
Time trend	0.000 (0.806)			0.001 (1.428)			0.001 (1.106)			0.000 (0.388)		
TV reports	-0.000 (-0.092)			0.002 (0.344)			0.009 (1.283)			-0.003 (-0.442)		
Large firms	-0.014 (-1.582)	-0.015* (-1.806)	-0.013 (-1.616)	-0.038** (-2.318)	-0.033** (-2.125)	-0.020 (-1.583)	0.022 (1.182)			0.039** (2.078)	0.050*** (2.858)	0.030** (2.132)
Small firms	0.006 (0.897)			-0.018 (-1.354)	-0.022* (-1.696)	-0.011 (-1.058)	-0.000 (-0.007)			-0.016 (-1.041)		
Construction	0.005 (0.478)			0.007 (0.324)			0.029 (1.211)	0.042** (2.023)	0.047*** (2.580)	0.043* (1.785)	0.038* (1.799)	0.052*** (2.774)
Services	0.003 (0.442)			0.009 (0.642)			-0.003 (-0.180)			0.011 (0.716)		
Export share of less than 5%	0.023*** (2.690)	0.025*** (3.070)	0.025*** (3.042)	0.005 (0.327)			0.014 (0.780)			0.003 (0.145)		
Export share of more than 66%	0.019* (1.930)	0.017* (1.833)	0.020** (2.093)	0.002 (0.092)			-0.003 (-0.141)			-0.011 (-0.532)		
Bilateral I agreements	0.024 (1.584)	0.024* (1.648)	0.023 (1.577)	0.006 (0.224)			0.034 (1.073)			0.033 (1.048)		
Observations	1,349	1,349	1,378	1,308	1,308	1,986	1,222	1,222	1,865	1,192	1,192	1,817
pseudo R2	0.142	0.135	0.136	0.148	0.142	0.129	0.231	0.223	0.192	0.243	0.239	0.207
Log Likelihood	-319.6	-322.4	-329.4	-472.4	-475.7	-729.4	-401.2	-405.4	-677.2	-412.0	-414.4	-669.4
DF	17	9	9	17	6	6	17	6	6	17	7	7

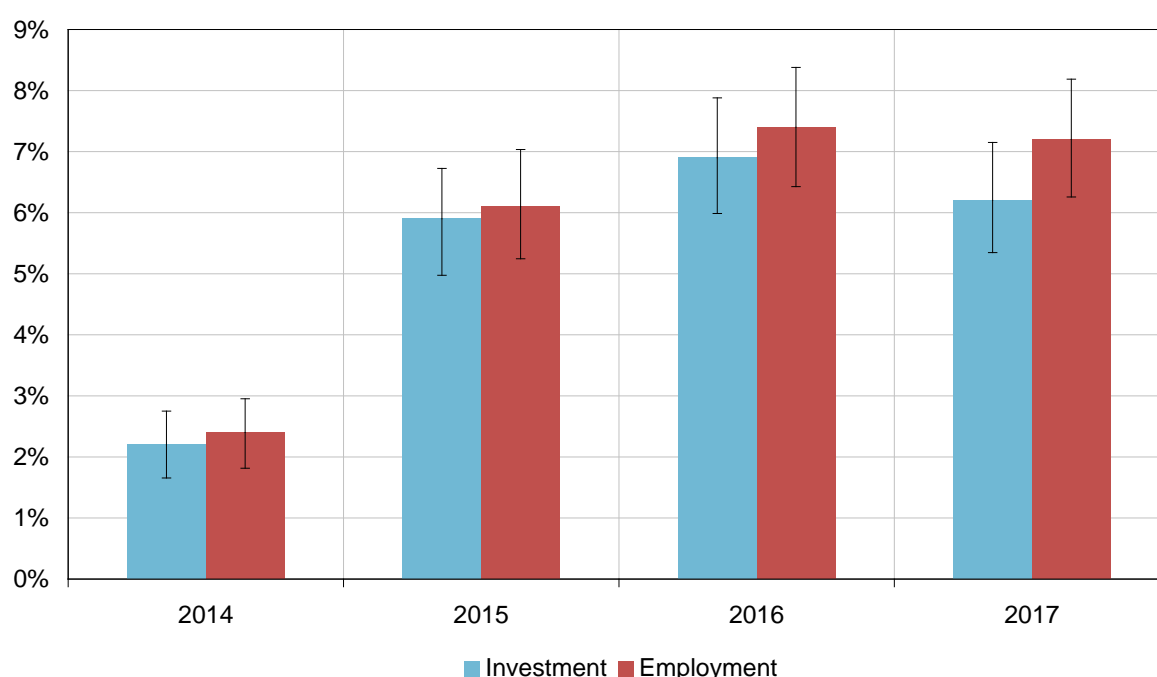
Notes: z-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Ordered probit regressions are carried out and average marginal effects are reported.

The strong relation between planned adjustment in investment plans because of the MII and investment uncertainty is also illustrated in Figure 8. The figure uses the ordered probit model in Column (9) of Table 4 to predict the probability that a firm wants to reduce investment because of the initiative in 2016, depending on its response to the question on the effect of the MII on investment certainty. The model predicts that a firm which responded that investment certainty decreased has a probability of 50.8% to also answer that it will reduce investment plans in 2016 because of the initiative. If the firm sees investment certainty unchanged, this probability is only 3.1%. The figure indicates, first, that it is almost entirely those firms which perceive increased investment uncertainty which also report that they want to reduce investment in 2016. Second, there is a strong interplay between the few covariates of the regression model, i.e. it is in many cases the same firms which report decreased investment certainty which also expect a decreased growth potential for Switzerland, and which employ a higher share of foreign employees. For example, 90.4% of the firms which report to experience reduced investment

certainty in the estimation sample underlying Figure 8 expect that the growth potential of Switzerland has decreased as a consequence of the MII, compared to 43.4% among the firms with unchanged investment certainty.<sup>24</sup>

The results in Tables 4 and 5 also provide evidence in line with Hypothesis 3: firms that expect a medium-term reduction in the growth potential of Switzerland due to the MII are statistically significantly more likely to plan to reduce investment in most future years. Remarkably, firms that foresee a future decline in the growth potential have a higher propensity to plan to reduce employment already in 2014, suggesting that the expectations about future growth in the country already affect employment growth today.

**Figure 9: Share of firms indicating a reduction of personnel and investment**



Notes: The bars show the share of respondents reporting their investment respectively employment will “decrease” or “strongly decrease”. The whiskers indicate an interval which lies over the reported share with a confidence of 95%.

Figure 9 compares the share of firms which plan to reduce investment because of the MII with the share of firms indicating a reduction of personnel. The 95% confidence intervals show that for each year the share of firms reducing investment is not significantly different from the share of firms reducing personnel. This indicates that the MII does not cause firms to reduce their investment plans stronger than their personnel plans and vice versa. We consequently have to reject the first part of Hypothesis 4.

<sup>24</sup> This is the reason why there is a substantial difference between the change in the predicted probability depending on the assessment concerning investment certainty in Figure 8 and the average marginal effects of investment certainty on the outcome in Table 4 derived from the ordered probit model.

**Table 6: Factors influencing whether firms plan to reduce investment more than employment, by year**

investment << employment	(1) 2014	(2) 2014	(3) 2014	(4) 2015	(5) 2015	(6) 2015	(7) 2016	(8) 2016	(9) 2016	(10) 2017	(11) 2017	(12) 2017
Investment certainty decrease	-0.007 (-0.583)			0.047*** (2.781)	0.047*** (3.661)	0.051*** (5.274)	0.059*** (3.878)	0.059*** (4.162)	0.068*** (5.427)	0.043*** (2.970)	0.041*** (2.979)	0.053*** (4.319)
Investment certainty increase	-0.029 (-0.781)			-0.001 (-0.022)			-0.070* (-1.681)			-0.071* (-1.799)	-0.067* (-1.716)	-0.022 (-0.654)
Potential growth decrease	-0.013 (-1.368)	-0.017* (-1.799)	-0.011 (-1.471)	-0.003 (-0.292)			-0.005 (-0.418)			-0.004 (-0.424)		
Potential growth increase	0.027 (1.318)			0.059** (2.202)	0.062** (2.536)	0.044** (2.433)	0.014 (0.549)			0.013 (0.504)		
Distance to border	-0.001** (-2.318)	-0.001** (-2.488)	-0.001** (-2.427)	-0.000 (-1.008)			-0.000 (-0.845)			-0.000 (-1.264)		
Share of foreign employees	-0.001*** (-2.660)	-0.001*** (-2.941)	-0.000* (-1.742)	-0.000 (-0.086)			-0.000** (-2.008)	-0.000* (-1.820)	-0.000 (-0.417)	-0.001** (-2.220)	-0.000** (-2.089)	-0.000 (-1.402)
Recruitment costs increase	0.025** (2.400)	0.024** (2.403)	0.024*** (2.861)	0.004 (0.296)			-0.016 (-1.316)	-0.020* (-1.711)	-0.026** (-2.513)	-0.017 (-1.439)	-0.021* (-1.850)	-0.022** (-2.242)
Acceptance rate	-0.000 (-0.783)			-0.000 (-0.345)			0.000 (0.862)			0.000 (0.259)		
Time trend	-0.000 (-0.991)			-0.001*** (-3.318)	-0.001** (-2.060)	-0.001** (-2.361)	-0.000 (-0.853)			-0.000 (-0.303)		
TV reports	-0.006 (-1.281)			-0.005 (-0.965)			-0.002 (-0.435)			-0.001 (-0.168)		
Large firms	0.008 (0.621)			0.035** (2.181)	0.032** (2.231)	0.015 (1.531)	-0.007 (-0.523)			-0.020 (-1.418)	-0.026** (-1.993)	-0.012 (-1.032)
Small firms	0.002 (0.184)			0.022* (1.698)	0.024** (2.064)	0.012 (1.441)	0.001 (0.054)			0.006 (0.548)		
Construction	-0.013 (-0.825)			-0.019 (-0.958)			-0.003 (-0.174)			-0.008 (-0.443)		
Services	-0.003 (-0.282)			-0.010 (-0.856)			-0.012 (-1.013)			-0.016 (-1.417)		
Export share of less than 5%	-0.002 (-0.217)			0.017 (1.241)			0.015 (1.112)			0.025* (1.924)		
Export share of more than 66%	-0.003 (-0.256)			0.022 (1.337)			0.019 (1.235)			0.021 (1.403)		
Bilateral I agreements	-0.025 (-1.154)			0.004 (0.181)			-0.011 (-0.481)			-0.006 (-0.259)		
Observations	1,333	1,333	2,015	1,272	1,272	2,256	1,186	1,186	1,881	1,152	1,152	1,827
pseudo R2	0.0352	0.0250	0.0133	0.0391	0.0328	0.0252	0.0351	0.0234	0.0217	0.0364	0.0260	0.0166
Log Likelihood	-358.9	-362.7	-562.0	-467.9	-470.9	-854.9	-443.7	-449.0	-742.4	-423.1	-427.7	-714.1
DF	17	4	4	17	5	5	17	3	3	17	5	5

Notes: z-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Ordered probit regressions are carried out and average marginal effects are reported.

In order to test the second part of Hypothesis 4, it is necessary to condition the adjustment of investment and personnel on the respective change in investment certainty. We do this in Table 6, in which the dependent variable indicates whether a firm plans to increase or decrease investment relatively more than how it plans to adjust employment due to the acceptance of MII. More specifically, the variable takes on a value of 1 if i) a firm plans to reduce investment but does not plan to adjust labour, ii) plans to reduce investment but plans to increase labour because of the initiative, or iii) if the firm does not plan to adjust investment but increases labour. The variable takes on a value of 0 if investment and employment are adjusted by the same amount. The value is -1 in case a firm increases its investment relatively more than employment because of the initiative. The presented coefficients show the probability that a firm wants to decrease investment relative to employment in a given year (i.e. that the outcome takes on the value 1) given a one unit increase in the variable of interest.

The results presented in Table 6 demonstrate that a perceived decrease in investment certainty leads to a decrease of investment relative to employment. This finding supports Hypothesis 4, as an increase in investment uncertainty leads to stronger (negative) adjustment of investment than employment. Apart from a decrease in investment certainty, only the share of foreign employees turns out to be a statistically significant and reliable predictor, meaning that firms with a high share of foreign employees

have a higher probability to decrease employment relative to investment compared to firms with a lower share of foreign workers.

**Table 7: Determinants of the probability of increasing outward FDI because of the acceptance of the initiative, by year**

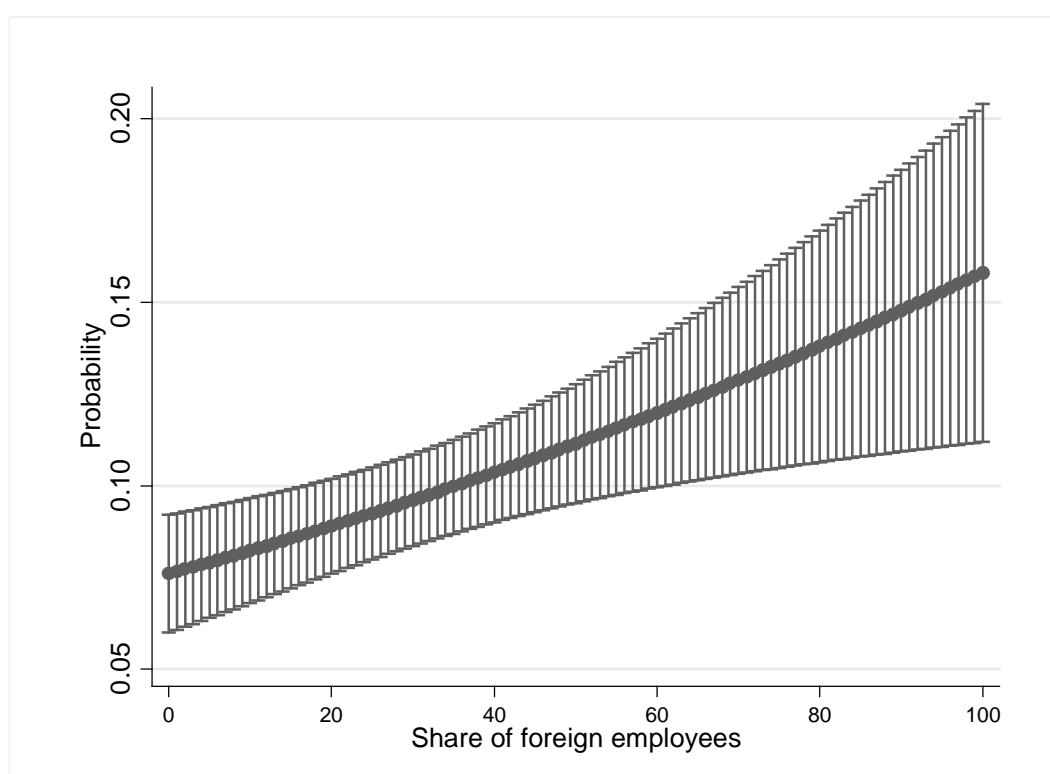
VARIABLES	(1) 2014'	(2) 2014	(3) 2014	(4) 2015'	(5) 2015	(6) 2015	(7) 2016'	(8) 2016	(9) 2016	(10) 2017'	(11) 2017	(12) 2017
Investment certainty decrease	0.009 (1.170)			0.057*** (4.023)	0.056*** (4.578)	0.063*** (5.656)	0.060 (1.455)	0.076*** (5.599)	0.073*** (6.352)	0.054*** (4.137)	0.070*** (5.155)	0.057*** (6.193)
Investment certainty increase	-0.043** (-2.352)	-0.043** (-2.327)	-0.053** (-2.482)	-0.106*** (-3.480)	-0.102*** (-3.478)	-0.103*** (-3.746)	-0.461 (-0.018)			-0.433 (-0.022)		
Potential growth decrease	0.000 (0.017)			0.003 (0.207)			0.019 (0.991)			0.017 (1.131)		
Potential growth increase	0.001 (0.082)			0.016 (0.517)			0.029 (0.727)			0.027 (0.783)		
Distance to border	0.000 (1.183)			-0.000 (-0.160)			-0.000 (-0.487)			-0.000 (-0.354)		
Share of foreign employees	-0.000 (-1.000)			-0.000 (-0.353)			0.000 (0.721)			0.000 (0.614)		
Recruitment costs increase	0.004 (0.518)			0.000 (0.024)			0.004 (0.331)			0.006 (0.526)		
Acceptance rate	-0.000 (-0.699)			-0.001 (-1.145)			-0.000 (-0.270)			0.000 (0.014)		
Time trend	0.000 (0.554)			-0.000 (-0.580)			-0.001 (-0.767)			-0.001* (-1.649)		
TV reports	0.010** (2.049)	0.009** (1.991)	0.006 (1.608)	0.012* (1.886)	0.013** (2.103)	0.010** (1.961)	-0.001 (-0.096)			-0.002 (-0.265)		
FDI in the past	0.002 (0.213)			0.040*** (3.024)	0.039*** (3.405)	0.045*** (4.383)	0.046 (1.407)	0.046*** (3.857)	0.051*** (4.895)	0.043*** (3.309)	0.048*** (4.065)	0.046*** (5.380)
Large firms	0.021* (1.958)	0.014* (1.832)	0.013* (1.654)	0.026* (1.755)			0.027 (1.057)			0.025* (1.683)		
Small firms	0.011 (1.338)			0.014 (1.141)			0.010 (0.721)			0.007 (0.562)		
Construction	0.002 (0.166)			-0.014 (-0.738)			-0.017 (-0.704)			-0.014 (-0.715)		
Services	-0.012 (-1.270)			-0.016 (-1.260)			-0.021 (-1.069)	-0.020 (-1.643)	-0.016 (-1.526)	-0.018 (-1.382)	-0.022* (-1.864)	-0.016** (-2.075)
Export share of less than 5%	0.002 (0.212)			-0.000 (-0.002)			-0.010 (-0.601)			-0.008 (-0.561)		
Export share of more than 66%	0.025** (2.122)	0.023** (2.546)	0.023*** (2.805)	0.021 (1.527)	0.025** (2.151)	0.013 (1.332)	0.011 (0.724)	0.022* (1.840)	0.014 (1.392)	0.006 (0.500)		
Bilateral I agreements	-0.001 (-0.041)			-0.017 (-0.629)			-0.210 (-0.011)			-0.198 (-0.013)		
Observations	846	846	1,091	840	840	1,069	823	823	1,042	820	820	1,572
pseudo R2	0.312	0.232	0.137	0.342	0.313	0.338	0.467	0.343	0.374	0.442	0.303	0.258
Log Likelihood	-40.80	-45.57	-73.44	-87.03	-90.94	-111.1	-70.74	-87.29	-100.8	-68.30	-85.25	-165.1
DF	18	4	4	18	5	5	18	4	4	18	3	3

Notes: z-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Ordered probit regressions are carried out and average marginal effects are reported.

Table 7 presents the consequences of the MII on the foreign direct investment plans. The dependent variable in the regressions takes a value of -1 if the firm plans to “decrease” or “strongly decrease” outward FDI as a consequence of the initiative in a given year, 0 if it leaves plans unchanged, and 1 if the firm plans to “increase” or “strongly increase” outward FDI due to the acceptance of the initiative. The underlying sample is restricted to those firms which are responsible for undertaking foreign investment (i.e. firms which are a subsidiary and not responsible for foreign investment are excluded). The table reports the probability that a firm wants to increase its outward foreign direct investment due to MII. The estimates presented in Table 7 indicate that a decrease in investment certainty increases the firm’s probability to aim at increasing investment abroad because of the MII, whereas a believed decrease of Switzerland’s growth potential seems to have no effect on outward FDI adjustments. Therefore, the

results provide support for Hypothesis 5, while we find no evidence in favour of Hypothesis 6. However, evidence can be found that is consistent with Hypothesis 7. According to Table 7, we find that firms which invested abroad in the past are more likely to increase their foreign investment activities as a consequence of the MII than firms which did not invest abroad. In addition to a decrease in investment certainty and previous FDI, it seems that a firm's export share has an influence on a company's foreign investment plans. Very export-oriented firms (i.e. firms with an export share beyond 66%) have a significantly higher probability to plan to intensify their investment activities abroad compared to firms with an export share between 5 and 66%.

**Figure 10: Predicted probability to reduce employment in 2016**



Notes: Predicted probability of reporting to plan to reduce employment in 2016 due to initiative depending on current share of foreign workers in workforce

Furthermore, support for Hypothesis 8 can be found in Table 4 and 5. In particular, the share of currently employed foreign workers and the expectation of rising recruitment costs due to the acceptance of the MII are consistently associated with a higher probability that a firm plans to reduce investment and employment because of the MII. Not surprisingly, the quantitative impact of this variable (i.e. the variable's AME) is more sizable when it comes to employment compared to investment adjustments.

Figure 10 illustrates the predicted probability that a firm plans to reduce employment in 2016 because of the initiative depending on its current employment share of foreigners. According to the predictions of the model, the probability that a firm plans to reduce employment in 2016 that does not employ foreign workers is 7.6%. The probability increases to 11.5% for a firm in which foreigners represent half of its workforce. The positive association between the share of foreigners in the workforce and the probability

to decrease investment or employment, respectively, is statistically significant in all but one regression in Tables 4 and 5. The results are thus not consistent with the ninth hypothesis, i.e. the results provide no support that firms engage in labour hoarding behaviour due to expected future labour shortage.

The regressions in the tables provide only limited evidence that the firm's distance to the border has an influence on the plans to adjust employment and investment because of the MII. The coefficient measuring the impact of the distance to the border on the outcomes is statistically insignificant in all specifications in Tables 4 and 5. This changes, however, if we restrict our attention to firms that report to suffer from decreased investment certainty. The regression results focusing on these particularly treated firms are presented in Table 8. For these firms, higher distance to the border is associated with a lower probability to plan to reduce investment due to the initiative.

Remarkably, firms' responses appear to be relatively insensitive to general sentiment and public opinion about the initiative. Neither the share of yes votes in the municipality in which the firm is located, nor media coverage or a simple time trend seem to affect the probability that a firm changes its investment or employment plans because of the MII. The regressions hence provide limited evidence in favour of Hypotheses 10 and 11. Some exceptions occur when looking at foreign direct investment. As shown in Table 7, the probability that a firm plans to increase outward FDI in 2014 or 2015 because of the initiative is positively related to the number of TV reports on the topic in the week prior to the date the participant filled out the questionnaire.

Finally, the evidence consistent with Hypothesis 12 is mixed. First, we find evidence in favour of the expected U-shape relationship between the firm's export share and the strength of the planned adjustments because of the MII. More specifically, domestically oriented firms (with an export share below 5%) and very export-oriented firms (above 65% export share) plan to decrease investment and employment statistically significantly more than firms with an export share between 5 and 65%, especially in 2014. Second, evidence that the industries particularly exposed to the Bilateral I agreements react stronger to the initiative is limited. The indicator variable which is 1 for these industries is not statistically significant in almost all specifications, although it generally has the expected direction. Third, the regressions provide evidence in line with Hypothesis 12 that the construction sector is more strongly affected by the vote. In particular, firms in the construction sector plan to decrease employment and investment in 2016 and 2017 significantly more than manufacturing firms. In the short run, there are neither statistically significant nor economically relevant differences between manufacturing, construction sector and service sector firms. The result might mirror that the construction firms expect the potential negative effects of the initiative on domestic demand to arise only in the medium term. Fourth, there is relatively limited evidence that firm size is an important determinant of the extent to which firms plan to respond to the MII. If at all, large firms plan to decrease investment and employment less because of the initiative than medium-sized or small firms, with the exception of planned recruitment adjustments in 2017 which are more substantial.



**Table 8: Determinants of plans to reduce investment for firms reporting increased policy uncertainty, by year**

VARIABLES	(1) 2014	(2) 2014	(3) 2015	(4) 2015	(5) 2016	(6) 2016	(7) 2017	(8) 2017
Large firms	-0.072 (-1.180)	-0.072 (-1.233)	0.068 (0.748)	0.057 (0.628)	0.054 (0.555)	0.056 (0.583)	0.048 (0.473)	0.023 (0.229)
Small firms	0.106** (2.061)	0.084* (1.713)	0.171** (2.055)	0.143* (1.705)	0.086 (0.934)	0.048 (0.529)	0.054 (0.574)	-0.005 (-0.057)
Export share of less than 5%	0.162*** (2.697)	0.149** (2.508)	0.119 (1.447)	0.134 (1.606)	0.192** (2.205)	0.211** (2.467)	0.201** (2.310)	0.219** (2.533)
Export share of more than 66%	0.156** (2.308)	0.128* (1.922)	0.140 (1.441)	0.122 (1.225)	0.148 (1.392)	0.138 (1.309)	0.122 (1.102)	0.103 (0.940)
Share of foreign employees	0.002** (2.029)	0.001* (1.709)	0.005*** (3.513)	0.004*** (3.283)	0.005*** (3.568)	0.004*** (3.028)	0.005*** (3.233)	0.004*** (2.756)
Recruitment costs increase	0.080* (1.711)	0.068 (1.490)	0.145** (2.050)	0.118 (1.640)	0.095 (1.257)	0.037 (0.481)	0.142* (1.850)	0.087 (1.122)
Bilateral I agreements	0.053 (0.428)	0.114 (0.951)	-0.065 (-0.328)	-0.034 (-0.175)	0.137 (0.613)	0.149 (0.669)	0.380 (1.520)	0.431* (1.708)
Construction	-0.035 (-0.448)	-0.057 (-0.737)	-0.162 (-1.331)	-0.162 (-1.329)	0.069 (0.532)	0.013 (0.100)	-0.040 (-0.303)	-0.096 (-0.737)
Services	0.017 (0.345)	-0.019 (-0.400)	-0.015 (-0.200)	-0.022 (-0.282)	-0.010 (-0.123)	-0.033 (-0.397)	-0.060 (-0.709)	-0.097 (-1.153)
Potential growth decrease		0.041 (0.482)		0.195 (1.484)		0.321** (2.432)		0.321** (2.461)
Distance to border		-0.003*** (-2.687)		-0.003 (-1.563)		-0.003* (-1.788)		-0.005** (-2.434)
Acceptance rate		-0.002 (-1.062)		0.003 (0.884)		-0.002 (-0.594)		0.000 (0.030)
Time trend		-0.001 (-0.651)		-0.001 (-0.270)		-0.002 (-0.803)		-0.001 (-0.510)
TV reports		-0.053** (-2.395)		-0.011 (-0.296)		0.032 (0.833)		-0.018 (-0.455)
Observations	221	217	208	205	187	185	176	174
pseudo R2	0.0977	0.172	0.0748	0.0982	0.0803	0.132	0.0856	0.141
Log Likelihood	-98.35	-88.19	-138.9	-133.6	-124.3	-116.1	-116.6	-108.3
DF	9	14	9	14	9	14	9	14

Notes: z-statistics in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Ordered probit regressions are carried out and average marginal effects are reported.

## 6. Conclusions

The aim of this paper was to analyse the effects of policy uncertainty on private fixed investment. For this purpose a special survey was conducted shortly after a largely unexpected acceptance of the Referendum on the Mass Immigration Initiative (MMI) in Switzerland. The acceptance has potentially huge, yet currently not entirely foreseeable impacts on the economic environment in Switzerland in the future. Hence the vote represents a substantial economic policy uncertainty shock to the business sector.

Ordered probit regressions show a strong and highly significant negative effect of decreased investment certainty on the probability of negatively adjusting investment and employment plans. This association holds throughout the whole period and the magnitude of the association increases over time. The estimates, for instance, imply that the probability of aiming at reducing investment because of the initiative in 2016 increases by 18 percentage point in case the firm reports to experience increased

investment uncertainty. Applying a back-of-the-envelope calculation provides evidence that had the initiative not been accepted the asset fixed investment of Swiss firms would have been approximately 0.9 percentage points higher. The regressions provide further evidence that firms which expect a medium-term reduction in the growth potential of Switzerland due to the MII are significantly more likely to plan to reduce investment in most years in the future because of it. Hence, these two different channels have a significant negative impact on investment plans. These results are in line with the theoretical literature about the effects of uncertainty on investment in case of irreversibility.

Since labour regulations in Switzerland are low, we presume that labour adjustment might be less irreversible than capital investment. This would imply that firms' investment plans react stronger to the uncertainty shock than employment plans. With the data at hand, some evidence for this hypothesis can be found. We also find that the share of currently employed foreign workers and the expectation of rising recruitment costs due to the acceptance of the MII are consistently associated with a higher probability that the firm plans to reduce its investment and employment. Only limited evidence is found that the firm's distance to the border has an influence on the plans to adjust employment and investment. However, firms that experienced an increase in uncertainty plan to increase their investment activities abroad more than those that do not experience such an increase. An increase in FDI as a result of the initiative is especially likely for firms that already carried out FDI in the past. So overall, firms react in various ways to the uncertainty shock introduced by the unexpected acceptance of the MII. Although we cannot quantify all effects of the uncertainty shock because of the Likert type response scales, we can verify various hypotheses about the reaction of the firms. One must therefore assume that the introduced uncertainty of the acceptance of the initiative alone has adverse impacts on the economic development in Switzerland.

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## Appendix: Questionnaire

### KOF Special survey on the impacts of the initiative "against mass immigration"

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The initiative against mass immigration was accepted on February 9th 2014. As a consequence legislation concerning immigrant regulation has to be renegotiated and adapted within three years. This special survey is designed to collect information on the consequences on investment plans of businesses in Switzerland caused by the

acceptance of the initiative. Did the acceptance of the initiative against mass immigration - compared with the situation before or the situation where the initiative would have been rejected - have an impact on investment plans of your firm, or not?

#### A Investments within Switzerland

1. How did the acceptance of the initiative against mass immigration influence the **certainty of your firm's investment plans within Switzerland in the next three years?**

*Through the acceptance of the initiative has the certainty of our investment plans within Switzerland in the next three years been*

	strongly decreased	decreased	not changed	increased	strongly increased
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<div style="display: flex; justify-content: space-between; width: 100%;"> <span>more uncertain</span> <span>plans</span> <span>more certain</span> </div>				

2. Has there been a change in your **firm's investment plans (investment sums) within Switzerland** due to the acceptance compared to a situation where the initiative would have been rejected, or was there no change?

*Due to the acceptance of the initiative, our firm's investment plans within Switzerland will*

	strongly decrease	decrease	not change	increase	strongly increase
year 2014	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2015	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2016	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
from 2017	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### B Investments abroad

3. Which of the following statements concerning **foreign investments** is true for your firm?

a) We are a subsidiary of a company and are not responsible for foreign investments yes ☐ → continue with question 5

b) Our firm already made foreign investments in the past (2013 and before) yes ☐ no ☐

c) Our firm will undertake foreign investments in the future (2014 and after) ☐ → continue with question 5

continue with question 4 ↓

4. Has there been a change in your **firm's foreign investment plans (investment sums)** due to the acceptance compared to a situation where the initiative would have been rejected, or was there no change?

*Due to the acceptance of the initiative, our firm's foreign investments will*

	strongly decrease	decrease	not change	increase	strongly increase
year 2014	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2015	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2016	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
from 2017	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### C Personnel plannings

5. Has there been a change in your **firm's personnel planning (planned number of overall employees) in Switzerland** due to the acceptance compared to a situation where the initiative would have been rejected, or was there no change?

*Due to the acceptance of the initiative, our firm's number of employees in Switzerland will*

	strongly decrease	decrease	not change	increase	strongly increase
year 2014	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2015	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
year 2016	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
from 2017	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Will there be a change of your **firm's recruitment costs** due to the acceptance of the initiative or will there be no change?

*Due to the acceptance of the initiative, our firm's recruitment costs will*

	strongly decrease	decrease	not change	increase	strongly increase
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### D General situation

7. It is in our interest to know if in your opinion Swiss medium term growth perspective (overall, not your firm specific) has been influenced by the acceptance of the initiative?

*Due to the acceptance of the initiative, growth potential of the Swiss economy will*

	strongly decrease	decrease	not change	increase	strongly increase
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### E Firm characteristics

The share of foreign employees within Switzerland at the number of all employees within Switzerland is

--	--	--	--

 %

## Appendix: Summary of answers

		Employment weighted							Investment weighted							Unweighted							Absolute answers						
		--	-	+	++	'=	k.A.	NA	--	-	+	++	'=	k.A.	NA	--	-	+	++	'=	k.A.	NA	--	-	+	++	'=	k.A.	NA
Investment in Switzerland	2014	0.00	-0.02	0.01	0.00	0.91	0.04	0.02	0.00	-0.02	0.01	0.00	0.92	0.02	0.02	0.00	-0.02	0.01	0.00	0.90	0.04	0.03	10	60	24	2	2440	109	76
	2015	0.00	-0.06	0.01	0.00	0.82	0.07	0.03	0.00	-0.05	0.01	0.00	0.85	0.05	0.02	-0.01	-0.06	0.01	0.00	0.82	0.07	0.03	18	159	33	5	2222	194	90
	2016	-0.01	-0.07	0.01	0.00	0.74	0.13	0.04	-0.01	-0.07	0.01	0.00	0.77	0.11	0.03	-0.01	-0.07	0.01	0.00	0.75	0.12	0.04	22	188	31	4	2042	329	105
	2017	-0.01	-0.06	0.01	0.00	0.72	0.15	0.04	-0.01	-0.06	0.02	0.00	0.75	0.13	0.03	-0.01	-0.06	0.01	0.00	0.73	0.14	0.04	31	169	33	5	1982	385	116
Investment abroad	2014	0.00	0.00	0.01	0.00	0.13	0.01	0.85	0.00	0.00	0.00	0.00	0.08	0.01	0.90	0.00	-0.01	0.04	0.00	0.12	0.01	0.87	0	2	15	1	326	19	2358
	2015	0.00	0.00	0.01	0.00	0.11	0.02	0.86	0.00	0.00	0.01	0.00	0.07	0.01	0.90	0.00	-0.01	0.11	0.01	0.10	0.01	0.87	0	5	41	5	284	30	2356
	2016	0.00	0.00	0.01	0.00	0.10	0.03	0.86	0.00	0.00	0.01	0.00	0.07	0.02	0.90	0.00	-0.01	0.12	0.02	0.09	0.02	0.87	0	3	42	6	252	57	2361
	2017	0.00	0.00	0.01	0.00	0.09	0.03	0.86	0.00	0.00	0.01	0.00	0.06	0.02	0.90	0.00	-0.01	0.10	0.03	0.09	0.02	0.87	1	2	36	10	249	62	2361
Employment plans	2014	0.00	-0.02	0.03	0.00	0.88	0.04	0.02	0.00	-0.03	0.03	0.00	0.91	0.02	0.02	0.00	-0.02	0.03	0.00	0.89	0.03	0.02	10	63	74	1	2418	89	66
	2015	0.00	-0.06	0.03	0.00	0.81	0.07	0.03	0.00	-0.06	0.03	0.00	0.84	0.04	0.02	0.00	-0.06	0.03	0.00	0.81	0.07	0.03	13	165	82	1	2198	183	79
	2016	0.00	-0.09	0.02	0.00	0.72	0.13	0.03	0.00	-0.07	0.03	0.00	0.77	0.10	0.03	-0.01	-0.08	0.02	0.00	0.74	0.12	0.04	19	201	62	1	2012	326	100
	2017	-0.01	-0.08	0.02	0.00	0.71	0.15	0.03	-0.01	-0.06	0.03	0.00	0.75	0.12	0.03	-0.01	-0.07	0.02	0.00	0.72	0.14	0.04	26	195	61	2	1956	376	105
Investment certainty		-0.02	-0.15	0.00	0.00	0.80	0.00	0.02	-0.02	-0.11	0.01	0.00	0.84	0.00	0.01	-0.02	-0.13	0.01	0.00	0.81	0.00	0.02	61	345	25	9	2214	0	67
Recruitment costs		0.00	0.00	0.26	0.04	0.61	0.06	0.02	0.00	-0.01	0.18	0.03	0.73	0.04	0.02	0.00	-0.01	0.22	0.04	0.67	0.05	0.02	5	17	583	99	1818	136	63
Growth potential		-0.03	-0.45	0.02	0.00	0.39	0.09	0.03	-0.03	-0.42	0.04	0.00	0.43	0.07	0.01	-0.03	-0.44	0.03	0.00	0.41	0.08	0.03	83	1156	82	3	1114	214	69

Notes: The results of “Investment in Switzerland” and “Investment Certainty” questions are weighted using (log) reported investment figures for 2013. All other results are constructed using employment weights. The answering options are “decrease strongly” (--), “decrease” (-), “increase” (+), “increase strongly” (++), “unchanged” (=), “not specified” (k.A.), item non-response (NA).