



Europe Economics

Economic Analysis of the Grace Period

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1 Executive Summary

1.1 Background

The grace period for patent protection is an important element in the substantive patent law harmonisation work which has been ongoing with varying levels of intensity for the last 30 years.

Whilst the legal issues have been analysed at length, there is as yet little empirical evidence on the possible economic impact of introducing a grace period in Europe. To this end, the Economic and Scientific Advisory Board (ESAB) of the EPO has commissioned Europe Economics and Accent to conduct an evidence-based economic analysis of the impact of the potential introduction of a grace period in Europe. The main objective of the current study is to gain further understanding in the following areas:

- How does the use of the grace period and the motivations for using it vary across different types of patent users?
- If a grace period were introduced in Europe, what are patent users' preferences over its specific design?
- What are the main concerns over the introduction of a grace period in Europe, and do these vary across different types of patent users?
- What would be the potential impact of the introduction of a grace period in Europe on the frequency of pre-filing disclosures, and the number of patent filings?
- What is the overall assessment of the potential benefits and costs of introducing a grace period in Europe?

The data sources and methodological approach underpinning the findings of the current study are as follows:

- The primary data source is represented by 820 answers to an on-line survey which was administered to users of the European patent system in Europe, the US and Japan.
- Additional qualitative evidence was gathered through 30 structured interviews with patent users.
- Survey responses were analysed and reported separately for the following types of patent users:
 - Type of organisation: large companies, SMEs, and universities/public research organisations (PROs).
 - Country of origin: Europe, Japan, and US.
 - Technological clusters in which most patent filings were made in the last 5 years.
- Whenever appropriate, responses were analysed through multivariate econometric regressions in order to control for patent users' key characteristics.
- The overall economic assessment is both qualitative and quantitative (where appropriate) in nature.

1.2 The grace period

An invention is not novel (new) and therefore not patentable if it was known to the public before the date of filing of the patent application, or before its date of priority.

Within a patent system, a grace period is a period of time before the date of filing of a patent on an invention, during which it is possible for that invention to be publicly disclosed (for example, in a scientific publication, at a trade show, or by accident) without losing its novelty, so that the invention remains patentable.

At present, grace periods are a characteristic of several patent systems around the world, including the US and Japan. There have been historical differences in the design of the grace periods in different countries, including the length of the grace period (e.g. one year in the US, six months in Japan), but there have been ongoing efforts to engage in substantive patent law harmonisation for several decades now and it is widely agreed that the grace period is one of the crucial elements of the endeavour.

The potential positive and negative impacts that might be associated with the introduction of a grace period in Europe are summarised in the following table.

Table 1.1: Key potential benefits and costs of a European grace period

Positive impact	Negative impact
No risk of accidental premature/incautious disclosure destroying novelty	Increase in legal uncertainty, disputes over entitlement and prior art
Grace period allows for additional time for: Market screening; Presenting at trade fairs; and Testing/improving and consulting on the invention / product.	Time frame for clarifying status of information extended from 18 to up to 30 months
Joint-ventures are easier	Increased litigation costs
Greater ease to obtain financing	Possible postponement of the moment when an invention would fall into the public domain, (assuming that using the grace period resulted in a later filing date than would be the case without a grace period in Europe).
Earlier research dissemination	Complication of the patent system
Inventions can be disclosed in conferences	Search and examination more complex: Reduction in operational efficiency at the patent office
There may be more scientific publications	Lengthening of the granting procedure due to extra communication(s) with the applicant becoming necessary
Possibility to reduce costs of patenting by selecting the most promising inventions	Increases in the cost of securing freedom to operate opinions
Harmonisation of international patent law with respect to grace periods, (but only if all other	Increase of risk of unintentional infringement by competitors

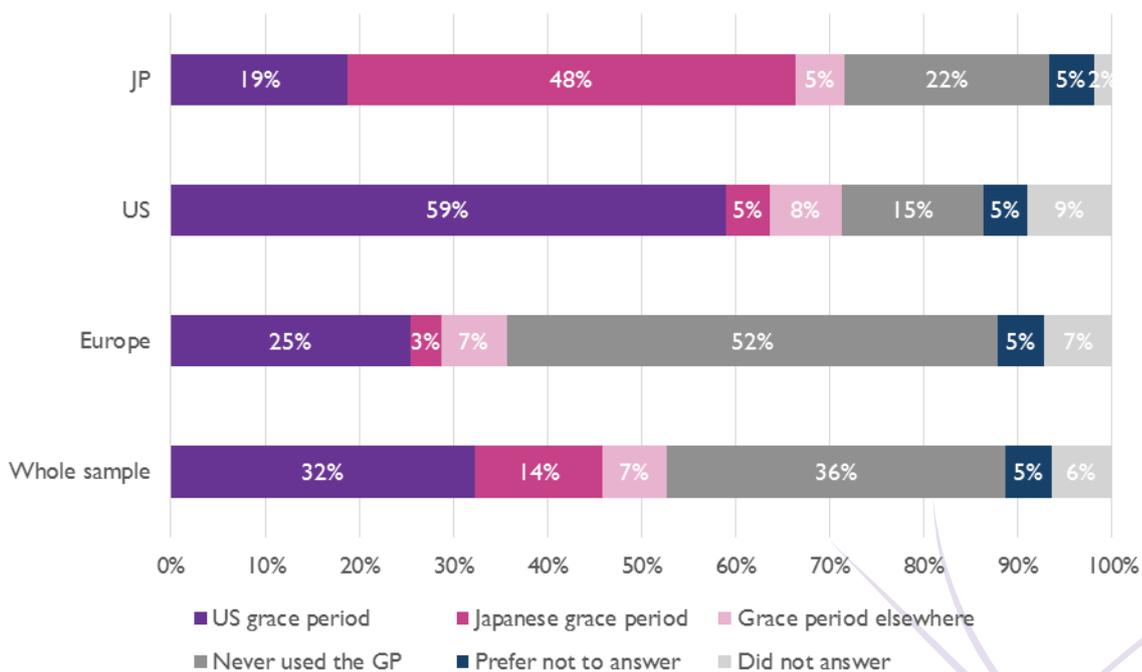
countries also agree on an international norm and align their laws)	<p>Chilling effect on rapid introduction of new technology</p> <p>Decrease of early investment decisions due to uncertainty as to status of IP rights</p>
---------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------

1.3 Experience in the use of the grace period

Past experience in the use of the grace period (i.e. whether the grace period has ever been used for patents filed in the past) varies significantly according to the geographical origin of patent users. As Figure 1.1 below indicates:

- Patent users from jurisdictions in which the grace period is present (i.e. US and Japan) are more likely to have used the grace period in the past compared to European patent users.
- Japanese and US patent users who used the grace period in the past are more likely to have used it in their country of origin.
- European patent users who used the grace period are more likely to have used it in the US than in Japan.

Figure 1.1: Percentage of patent users that have ever used the grace period (by respondent’s country of origin)

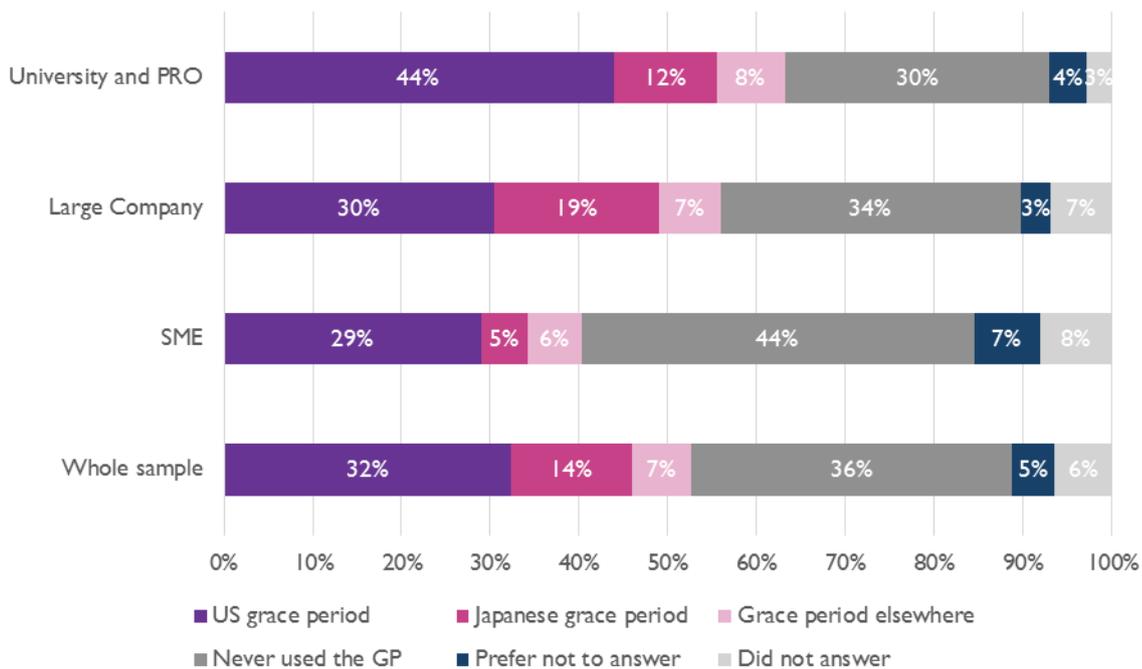


Note: This figure presents answers to: “Have you actually used the grace period for patents you have filed in the past?” The information presented in the above graph relies on 60 non-respondents and 760 respondents who provided an answer to at least one of the multiple available options, 417 of which were from Europe, 184 from the US and 159 from Japan. Respondents could choose more than one answer for this question; where more than one answer was given both answers were accounted for and were presented in this diagram.

Experience in the use of the grace period varies also according to the type of organisation. As indicated in Figure 1.2 below:

- SMEs are the patent users least likely to have used the grace period, whilst universities and public research organisations are the most likely. Even though the figure below indicates that a significantly greater proportion of large companies has used the grace period compared to SMEs, it is important to notice that this is likely to be due to the fact that large companies file, on average, significantly more patents than SMEs (i.e. the figure should not be interpreted as suggesting that large companies tend to invoke the grace period more frequently than SMEs).
- Across all types of users, the grace period is used more often in the US than in other jurisdictions
- The frequencies with which the grace period is used in the US and in Japan are most similar for large companies.

Figure 1.2: Percentage of patent users who have used the grace period in the past (by respondent’s type of organisation)



Note: This figure presents answers to: “Have you actually used the grace period for patents you have filed in the past?” The information presented in the above graph relies on 60 non-respondents and 760 respondents who provided an answer to at least one of the multiple available options, 241 of which are SMEs, 375 large companies 137 Universities or Public Research Organisations, 4 Other and 3 Prefer not to answer. Respondents could choose more than one answers for this question; where more than one answer was given both answers were accounted for and were presented in this diagram.

Despite the fact that a relatively high percentage of patent users (i.e. 53% as per Figure 1.2) have used the grace period in the past, the share of patent filings for which users invoke the grace period is relatively low. In fact we find that approximately 60% of patent users who used the grace period in the US invoked the grace period for less than 5% of the total number of patents filed at the USPTO in the last five years. The average proportion of filings that made use of the grace period in Japan is even lower: more than 80% of patent users who used the grace period in Japan invoked the grace period for less than 5% of the total patents filed at the JPO in the last five years.

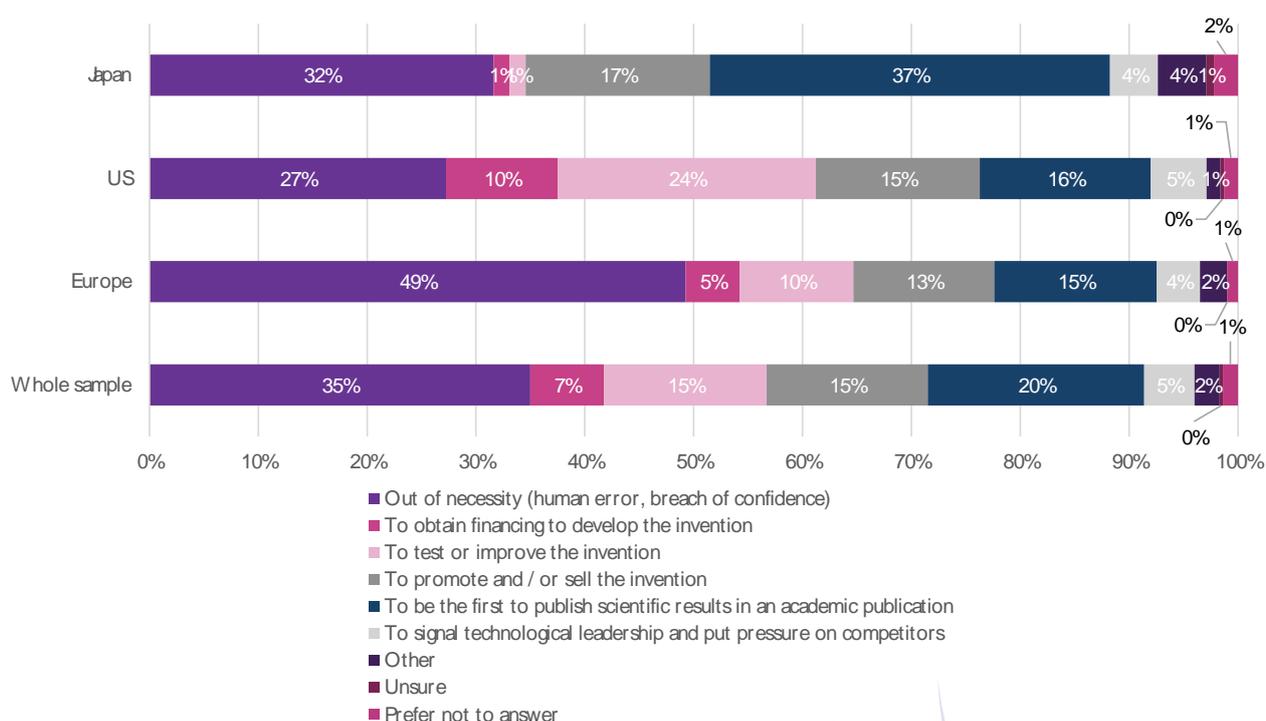
It should be noted that the past use of the grace period in Japan and the US are poor predictors of potential use of a safety-net grace period in Europe or over continued rates of use in those countries due to significant changes in the national grace period definitions enacted in 2011.

1.4 Motivations for using the grace period

The motivations for using the grace period vary quite significantly depending on the geographical origin of the patent user. As Figure 1.3 indicates:

- Almost half of the European patent users surveyed have used the grace period because of necessity arising from human errors or breach of confidence.
- US patent users are those among which the largest percentage has indicated the possibility of testing and improving invention as a motivation for using the grace period.
- Among Japanese patent users the primary motivation for using the grace period is the need to be the first to publish in scientific and academic journals.

Figure 1.3: Motivation for using the grace period, by country of origin



Note: This figure presents answers to: “What were your motivations for using the grace period”. The information presented in the above graph relies on 440 eligible responses, 173 of which were from Europe, 159 from the US and 108 from Japan; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

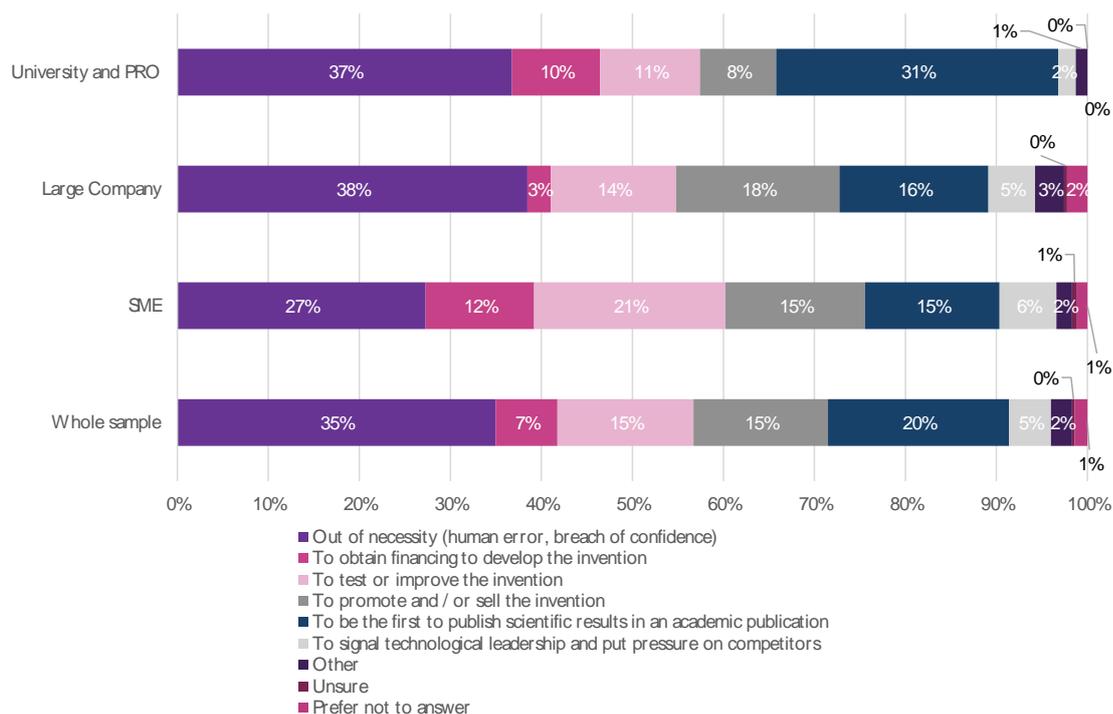
Differences in the motivations for using the grace period are somewhat less marked across types of organisations, however, and as shown in Figure 1.4 some patterns are clearly present:

- Large companies are the patent users among which the greatest share has indicated necessity as a key motivation for using the grace period. This might be due to the fact that large companies tend to file more patent applications than do smaller firms and so even a relatively

low frequency of accidental disclosure can imply a relatively large number of instances that would result in the grace period being used.

- SMEs are the type of organisation with the largest shares of patent users who indicated the ability to test and improve inventions as a motivation for using the grace period.
- For universities and public research organisations the main driver for using the grace period is the ability to be the first to publish scientific results in academic publications.

Figure 1.4: Motivation for using the grace period, by type of organisation

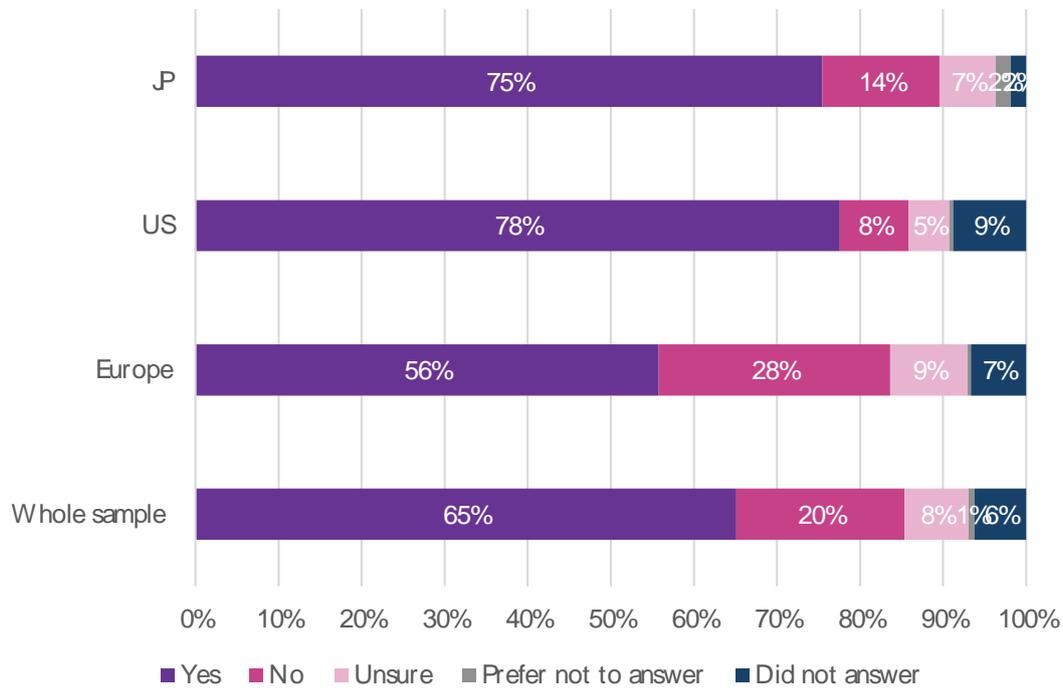


Note: This figure presents answers to: “What were your motivations for using the grace period”. The information presented in the above graph relies on 440 eligible responses, 118 of which were SMEs, 233 large companies, 84 Universities or Public Research Organisations, 3 Other and 2 Prefer not to answer; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

1.5 Position regarding the grace period

The extent to which patent users are in favour of a grace period in principle is also affected by both geographical origin and type of organisation. As shown in Figure 1.5, appreciation for the grace period is greater in US and in Japan, i.e. those jurisdictions where the grace period is already present and where patent users are more likely to have used it in the past (as already shown in Figure 1.1).

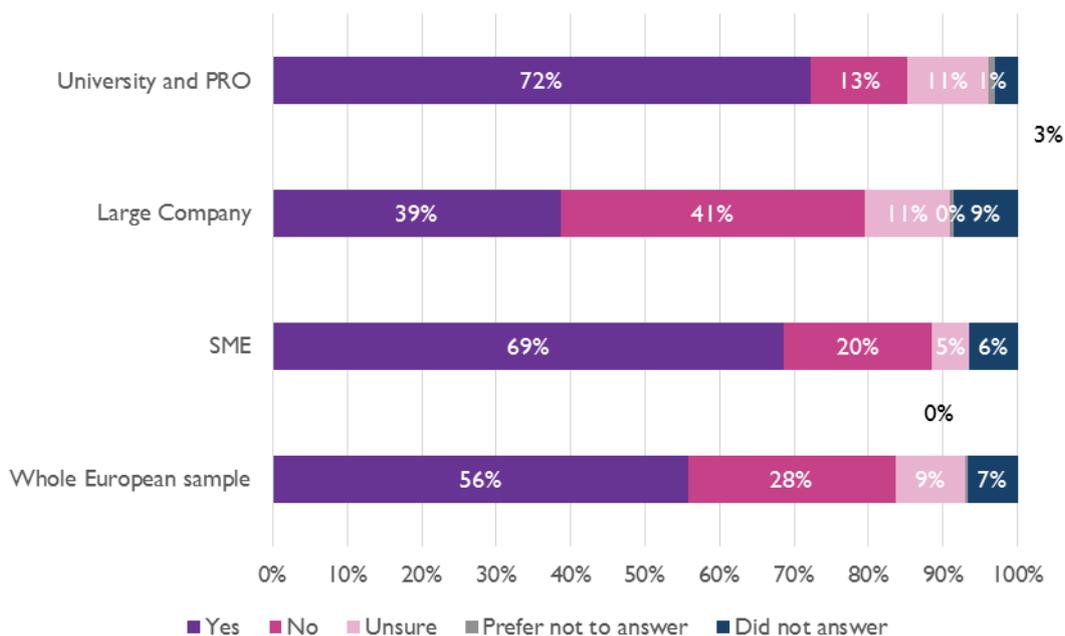
Figure 1.5: In principle, are you in favour of a grace period? Presented by country of origin



Note: The figure presents answers to: "In principle, are you in favour of a grace period?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Even though Figure 1.5 indicates that European users are relatively less in favour of the grace period (with 28% of users being not in favour of a grace period in principle) views among European patent users vary significantly across different types of organisation. As illustrated in Figure 1.6 whilst only 39% of European large companies are in favour of a grace period, the majority of European SMEs (69%) and European universities/PROs (72%) support the grace period.

Figure 1.6: In principle, are you in favour of a grace period? Presented by type of organisation for European respondents only



Note: The figure presents answers to: “In principle, are you in favour of a grace period?”. The information presented in the above graph relies on 452 responses, 140 of which are SMEs, 209 large companies, 101 Universities or Public Research Organisations and 2 Prefer not to answer.

1.6 Preferences regarding specific features of the grace period

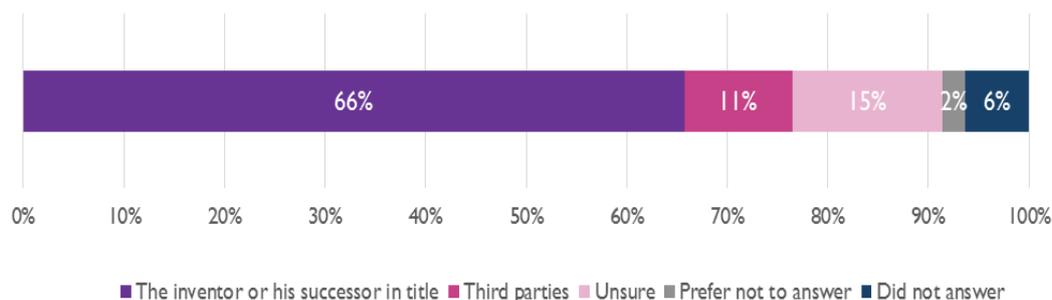
Patent users’ views on the key features and objectives of the grace period were also analysed. With regard to the grace period features, the analysis focused on the following key dimensions:

- **Duration** — how long a grace period should be.
- **Preferred date from which grace period is computed** – either filing date, or filing or priority date.
- **Declaration requirement** — a requirement to file a declaration listing when, how and which information about the invention was made available to the public. If the applicant fails to declare a pre-filing disclosure because he/she is unaware of it, the grace period would still apply, although other consequences might ensue.
- **Prior user rights** — a prior user right gives a third party acting in good faith the right to continue using an invention after a patent has been filed, provided the third party’s use of the invention began before the patent application was filed. This can happen when the third party has made the same invention independently, or has acquired knowledge of the invention from another inventor in good faith.
- **Protection from disclosure of independent inventions** — typically the grace period applies only to disclosures of the applicant’s invention. Where the same invention independently made by a third party is disclosed prior to the filing date, it forms part of the prior art and destroys the novelty of the applicant’s invention. Protection from disclosure of independent inventions

implies that, once the applicant has disclosed his/her invention, no disclosure of the invention independently made by a third party will destroy the novelty of the applicant's invention.

Before analysing respondent's views on these specific features of the grace period, we first note that, as shown in Figure 1.7, 66% of respondents indicated that the risk of pre-filing disclosure should be borne by the inventor or his successor in title.

Figure 1.7: Who should bear the risk of pre-filing disclosure?



Note: this figure is based on the full sample of 820 complete responses.

Figure 1.8 shows that, overall, respondents had mixed views in respect of the appropriate duration for the grace period.

Breaking down responses by the respondent's country of origin, we find that 62% of Japanese respondents are in favour of a duration of six months, compared to 44% of European respondents and 24% of US respondents. By contrast, 70% of US respondents support a duration of 12 months compared to 36% of European respondents and 30% of Japanese respondents.

Universities/PROs are most strongly in favour of a 12-months grace period: 58% support that duration, compared to 36% of large companies and 48% of SMEs. The six months duration is favoured by 48% of large companies, compared to 39% of SMEs and 30% of universities/PROs.

Figure 1.8: Preferences for duration of the grace period



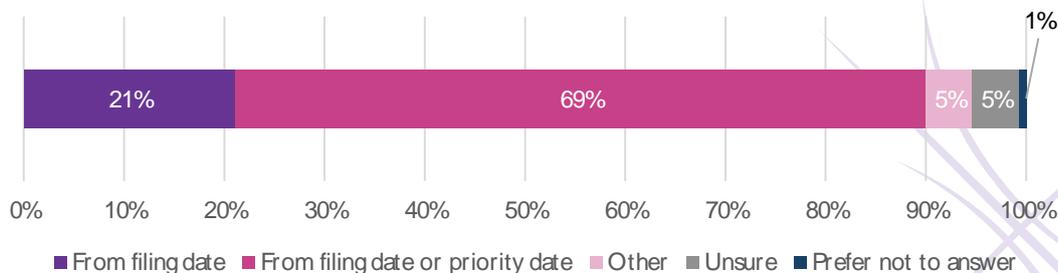
Note: The figure presents answers to: “In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?”. This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 1.9 indicates that the majority of respondents consider that the grace period should be calculated from the filing date or priority date.

This finding is consistent across respondents from the US, Japan and Europe: 72% of Japanese respondents are in favour of this option, as are 68% of respondents from the US and Europe. By contrast, 25% of Japanese respondents consider that the grace period should be calculated from the filing date, as do 19% of US respondents and 21% of European respondents.

The finding is also consistent across organisation types: calculation from the filing date or priority date is supported by 75% of universities/PROs, 70% of large companies and 64% of SMEs. Support for calculation from the filing date was received from 15% of universities/PROs, 21% of large companies and 25% of SMEs.

Figure 1.9: Preferences for date from which grace period should be calculated



Note: this figure is based on the full sample of 820 complete responses.

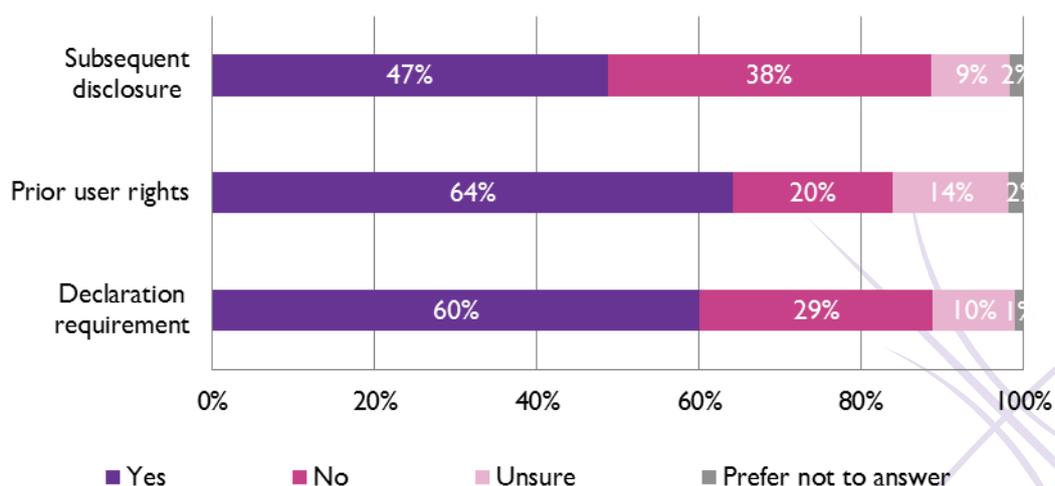
Figure 1.10 shows the proportion of respondents from the whole sample that expressed support or opposition to protection from subsequent disclosure of independent inventions, the grant of prior user rights and a declaration requirement.

Overall, 47% of respondents believed that the grace period should protect them against the subsequent disclosure of independent inventions. Large companies were less favourable towards this approach compared to universities and SMEs, with just 40% of large companies in favour compared to 46% of universities/PROs and 58% of SMEs. Moreover, 46% of large companies opposed this protection, compared to 36% of universities/PROs and 26% of SMEs. Among US respondents, 58% were in favour while 29% opposed such a feature in a grace period. This compares to support from 44% of European respondents and 41% of Japanese respondents and opposition from 39% and 47%, respectively.

With respect to prior user rights, Figure 1.10 shows that the majority of respondents were in favour. Large companies had the strongest preference with 71% supporting prior user rights against 60% of universities/PROs and 56% of SMEs. Only 16% of large companies opposed prior user rights, compared to 18% of universities/PROs and 25% of SMEs. Japanese respondents were particularly in favour of prior user rights (69% support versus 18% against), followed by European respondents (64% support versus 18% against) and US respondents (60% support versus 24% against).

A declaration requirement was also supported by the majority of respondents, as shown in Figure 1.10. Among Japanese respondents, 72% supported a declaration requirement while 17% were opposed. European respondents were also strongly in favour of a declaration requirement (64% support versus 18% opposed) whereas the majority of US respondents opposed this feature (38% support, 50% opposed). There was broad similarity in views across different types of organisation: 55% of SMEs, 63% large companies and 61% universities/PROs were in favour of a declaration requirement while 31%, 26% and 30% were opposed, respectively.

Figure 1.10: Preferences in respect of declaration requirements, prior user rights and protection from subsequent disclosure



Note: this figure is based on the full sample of 820 complete responses.

We also gathered patent users' views on specific objectives that the grace period should serve in principle. Whilst an overall majority of patent users (59%) agree that a grace period should be defined so as to ensure that any inventor with a real choice would choose to file first and then disclose his invention, there is a significant difference of opinion between patent users from Europe, the US and Japan. While 69% of European users agreed with this statement, only 54% of US users and 39% of Japanese users agreed. In all regions, the majority of users agree that a grace period should take into account both the goals of the patent system and the needs of the scientific and academic community, as well as protect inventors against the consequences of breach of confidence and theft of information.

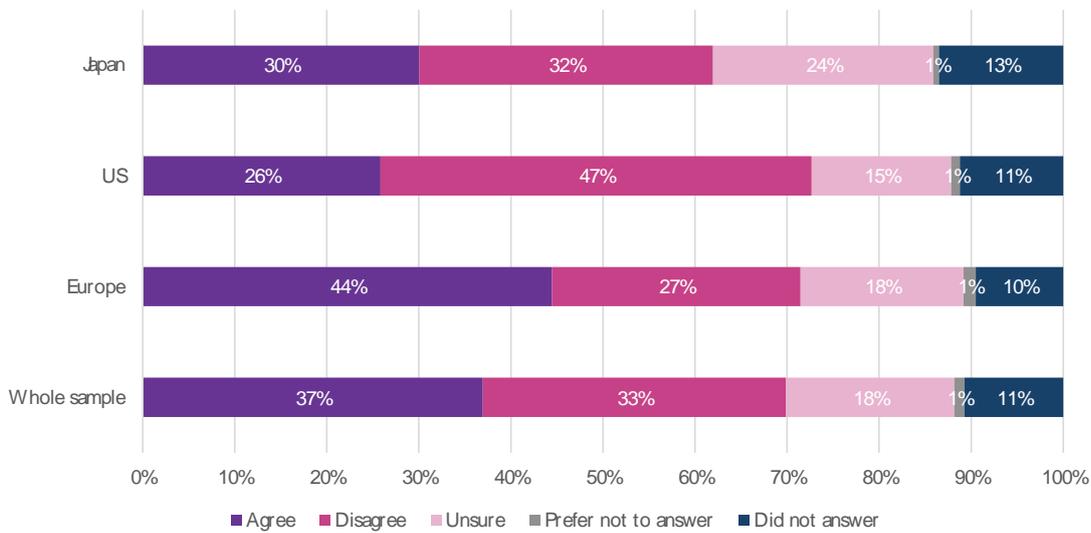
When analysing patent users' views by type of organisation, we find that universities and public research organisations are particularly keen that a grace period should take into account both the goals of the patent system and those of the academic community and also consider it important that inventors should be able to secure patent rights in cases of pre-filing disclosure. Legal certainty is considered important by a majority of users, with 73% of respondents overall (77% of Europeans) agreeing that the grace period should be defined so as to preserve maximum legal certainty.

1.7 Concerns and potential reactions to the introduction of the grace period in Europe

One of the main concerns with the introduction of a grace period in Europe is the potential increase in legal uncertainty for all stakeholders of the patent system. This is due to the fact that, after disclosure of an invention, depending on the duration of the grace period, it would take longer before third parties could know whether a patent has been filed for the subject matter or whether the invention is and shall remain in the public domain. Moreover, even post-grant, finding a piece of seemingly relevant potential prior art would no longer necessarily result in the ability to make a clear-cut assessment of the validity of the patent as granted. Such a negative impact is likely to be exacerbated if, following the introduction of a grace period in Europe, instances of pre-filing disclosures were to increase significantly.

As illustrated in Figure 7.4 concerns that a grace period, in principle, increases legal uncertainty are greater among European users than among US and Japanese users.

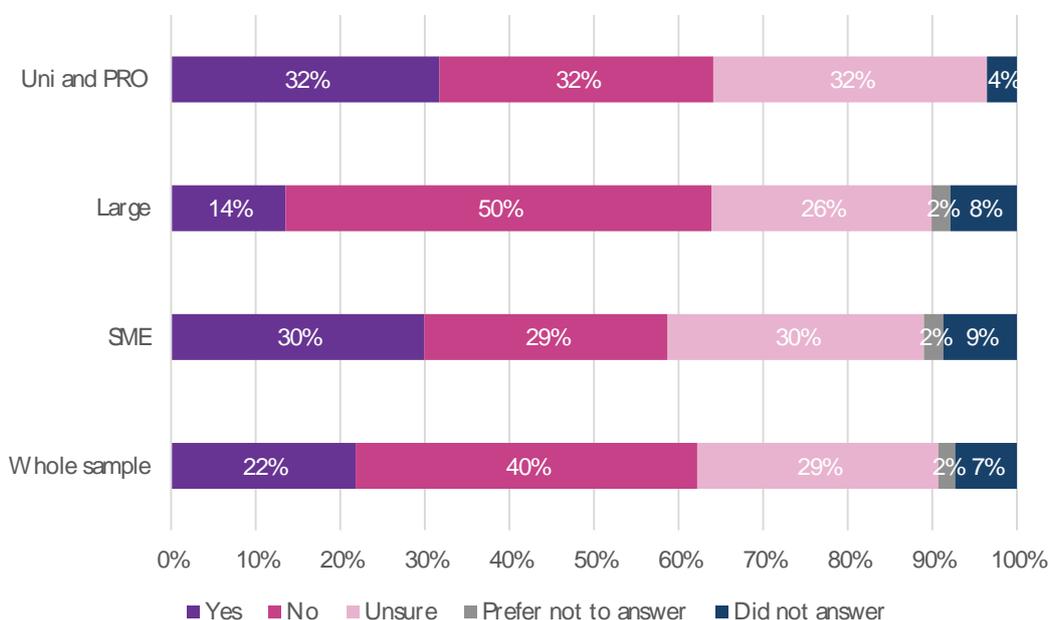
Figure 1.11: Does a grace period reduce the predictability and legal certainty of the patent system? Responses by region of origin



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

With regard to the potential increase in pre-filing disclosures, patent users were asked to indicate whether they would make pre-filing disclosures more regularly if a “safety-net” grace period (i.e. a grace period with: (a) duration of 6 months, (b) pre-filing declaration requirements, (c) prior user rights, and (d) no protection from disclosures of independent inventions by third parties) were introduced in Europe. As Figure 1.12 indicates, there is a clear difference of opinions between large companies on one side, and SMEs and universities/PROs on the other. Whilst only a minority (14%) of large companies expect to make pre-filing disclosures more regularly in Europe, the percentage is significantly greater (i.e. around 30%) among SMEs and universities/PROs.

Figure 1.12: If a “safety net grace period” were introduced in Europe, would you make pre-filing disclosures (more) regularly in Europe?



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

1.8 Assessment

Possible issues with regard to the potential introduction of a grace period in Europe have been highlighted based on an assessment of the potential positive and negative impacts included in Table 1.1.

It is important to stress that the qualitative assessment provided below has been conducted by emphasising the differential impact across different types of patent users (e.g. universities & PROs, SMEs, and large companies). However, it should be noted that in order to obtain a more representative picture of the potential welfare impact associated with the introduction of the “safety-net grace period”, such assessment should also reflect the different weights that different users have within the European patent system. More specifically, large companies file a significantly greater number of patents at the EPO than do SMEs and universities / PROs. Indeed, 65.5% of applications were from large companies in 2013.¹

Positive impacts

- **No risk of accidental novelty destroying premature/incautious disclosure** — a risk of an unintentional novelty destroying disclosure has a negative welfare impact because, to a certain extent, it reduces the patent systems’ effectiveness in incentivising innovation. *We consider that large companies and SMEs would experience greater benefits from a removal of the risk of accidental/premature disclosure than would universities.* First, we found that among patent

¹ EPO Annual Report for 2013.

users that have used the grace period in the past, SMEs and large companies are those who have more frequently indicated necessity (because of accidental disclosures or breach of confidence) as a motivation for using the grace period. Second, despite the fact that among those users who have never used the grace period, universities are those more likely to have felt the need to file a patent application after disclosure, it is also the case that error and breach of confidence are the two least frequent motivations for disclosure mentioned by universities.

- **Possibility of activity resulting in disclosure before filing** — the benefit of having the possibility of activity resulting in disclosure before filing is represented by the patent users' increased ability to screen, test, and select the most promising innovations. *We consider that SMEs are the most likely stakeholders to benefit from the possibility of activity resulting in disclosure prior to filing.* The impact on universities and large companies is likely to be less material. First, the possibility of activity resulting in disclosure before filing allows inventors to increase the chances of improving inventions, obtaining financing, and promoting/selling inventions. We then notice that for SMEs, these three aspects account for around half of the stated motivations for using the grace period, whilst for larger companies and universities/PROs they account for around one third.
- **Earlier research dissemination** — potential knowledge spill-overs associated with an earlier and faster dissemination of innovative ideas to the public. A precise assessment of such benefits is intrinsically complicated as their magnitude is closely related to the intrinsic value of the inventions being disclosed. However, conclusions can be drawn about the potential increase in the likelihood of earlier disseminations taking place. To the extent that they would occur, we expect earlier disseminations to be originated primarily by SMEs and universities and significantly less so by large companies. We draw this conclusion based on the evidence that only 14% of large companies responded that they would make pre-filing disclosures more regularly in Europe if a safety net grace period were introduced there, while the corresponding figures for SMEs and universities/PROs are respectively 30% and 32%.
- **Possibility to reduce costs of patenting by selecting the most promising inventions for protection**— this benefit is closely linked to the availability of additional time before filing. This additional time can be used in order to improve and test an invention. SMEs are the type of organisation with the largest shares of patent users who indicated the ability to test and improve inventions as a motivation for using the grace period. Moreover, given that SMEs and universities typically have smaller patenting budgets than do large companies, a single test of an invention followed by a decision not to file would have a greater proportional impact on their patenting costs than would be the case for larger companies. Therefore we expect *this benefit to be greater for SMEs than for universities/PROs and large companies.*
- **Harmonisation of international patent law with respect to grace periods** — The introduction of a grace period in Europe, if – and only if – matched by alignment on an agreed norm by other countries around the world, could lead to an internationally harmonised grace period, which could be expected to benefit all stakeholders who engage in international activities. Organisations would then be able to standardise their approach to pre-filing disclosures and so *organisations that are primarily engaged in activities that span the borders of both regions that have a grace period and ones that do not have a grace period would be more likely to benefit from this effect.*

Negative impacts

- **Increase in legal uncertainty, disputes over entitlement, costs of freedom to operate opinions and litigation costs** — the introduction of a grace period in Europe would increase legal uncertainty because, after the disclosure of an invention it would take longer before third parties could know whether a patent has been granted for the subject matter or whether the invention is and shall remain in the public domain. Also, post-grant, the assessment of the prior art remains more difficult than in the absence of a grace period. In turn this may lead to an increase in disputes over entitlement as well as an increase in the costs of litigation and in the costs of obtaining freedom to operate opinions. Whilst the evidence gathered suggests that all stakeholders agree that the introduction of a grace period in Europe would be associated with such risks, *concerns are greater for large companies than for SMEs and universities/PROs*. In fact 44% of large companies agree that a grace period reduces legal certainty compared to 27% of SMEs and 35% of universities. Moreover, 43% of large companies expect the cost of litigation to increase compared to 39% of SMEs, and 41% of universities and 47% of large companies expect an increase in the cost of freedom to operate opinions compared to a 44% of SMEs.
- **Postponement of the moment at which the invention will fall into the public domain** — because of the additional time it provides to patent users who have already disclosed their inventions, a grace period could lead to a postponement of the moment in which graced inventions will fall in the public domain (relative to a situation in which the grace period is not available). The materiality of this negative impact depends on three main factors: the duration of the grace period, the frequency with which patent users are likely to invoke the grace period for patents filed in Europe, and whether the patent in question falls into the category of those upheld to the very end of the 20-year patent term. With the duration envisaged for the “safety net” grace period being only six months and with only 16% of large companies (who file the largest number of patents) indicating they would make pre-filing disclosures more regularly in Europe if a “safety net” grace period were introduced there, the postponement would concern a relatively small amount of patents and a relatively short time period. Therefore, *we would not expect this negative impact to be material*.
- **Complication of the patent system** — The complication of the patent system is one of the primary concerns with the introduction of a grace period in Europe and sources from the addition of a new administrative dimension to the process. Overall, half of the large companies in our sample believe that the complication of the patent system is a good reason not to have a grace period, whilst only 35% of SMEs 29% of universities and PROs do so. Moreover, around two thirds of SMEs and universities agree that user friendliness for non-knowledgeable stakeholders is important while large companies diverge from this strong majority with only half of them agreeing.
- **Potential operational impact on the granting procedure** — the introduction of a grace period in Europe might have a systemic impact on the functioning of the patent system because it would complicate the process of identifying the applicable prior art. This may potentially result in a lengthening of the granting procedure and a loss of efficiency due to the necessity of additional communications between the examiner and the applicant, particularly if there is no mandatory declaration requirement. This would increase patenting costs.

- **Increased risk of unintentional infringement of competitors** — in principle, the introduction of a grace period in Europe could increase the risk of unintentional infringements by third parties who could use a disclosed invention unaware of the fact that the invention might eventually be patented. Although valid in principle, we believe that the *realisation of such risks would not be material, provided a* European safety-net definition of the grace period were adopted, allowing for prior user rights for third parties who used the invention in good faith before the filing date or the priority date of the application. This potential feature of a European grace period was warmly welcomed by all types of patent users. Furthermore, when asked how they would act if prior user rights were available to third parties having derived knowledge of the invention, who have begun using the invention in good faith, the vast majority of all types of respondent stated that they would generally try to keep their invention secret and try to file a patent application as quickly as possible, thus minimising not only the risks for competitors but all other potential negative effects of the grace period.

2 Introduction

The Economic and Scientific Advisory Board (ESAB) was established by the President of the European Patent Office (EPO) in 2011. The ESAB aims to provide accurate analysis on topical important economic and social issues relating to the patent system, thereby assisting the EPO in pursuing evidence-based policymaking.

One of the projects identified by ESAB for the period of 2013 and 2014 was to investigate the potential economic impact of introducing a grace period in Europe. Europe Economics and Accent were engaged to complete this analysis.

2.1 Grace periods

An invention is not novel (new) and therefore not patentable if it was known to the public before the date of filing of the patent application, or before its date of priority.

Within a patent system, a grace period is a period of time before the date of filing of a patent on an invention, during which it is possible for that invention to be publicly disclosed (for example, in a scientific publication, at a trade show, or by accident) without losing its novelty, so that the invention remains patentable.

It therefore allows the innovator to expose an innovation to peer review prior to filing and so potentially enables the innovation to be refined and improved before a filing is made with a patent office. The grace period also protects the innovator from the risk of accidental disclosure (which would invalidate a patent application in systems without a grace period) and may enable research to be disseminated to the scientific community more quickly than in the absence of a grace period. However, a grace period increases the degree of legal uncertainty for third parties due to the difficulty of ascertaining whether a disclosure during the grace period forms prior art or not, and lengthens the period of uncertainty between the first disclosure and the publication of the application at 18 months. It increases the complexity of the patent system, which may result in a loss of operational efficiency, and could also potentially increase patent backlogs if the number of patent filings increases thanks to the possibility of filing post-disclosure.

At present, grace periods are a characteristic of several patent systems around the world, including the US and Japan. There have been historical differences in the design of the grace periods in different countries, including the length of the grace period (e.g. one year in the US, six months in Japan), but there have been ongoing efforts to engage in substantive patent law harmonisation for several decades now and it is widely agreed that the grace period is one of the crucial elements of the endeavour. Harmonisation has the potential to amplify the impacts of grace periods as it would ensure that innovators could file for patent protection in all regions that operate a grace period, including the three largest patent offices. At present, applicants that make use of the grace period in their own countries are precluded from patenting their inventions in Europe.

2.2 Objectives of this study

The core objective of this study is to identify the potential effects of introducing a grace period in Europe, using qualitative and quantitative evidence gathered during the course of the research. More specifically, the study seeks to identify the main pros and cons of introducing a grace period in Europe and assess the extent to which each of these possible impacts are considered important by stakeholders. It also identifies how European and international applicants at the EPO might react to the introduction of a grace period in Europe with respect to issues such as filing strategies, expected use of the grace period and so on. The study also considers the issue of grace period harmonisation and assesses the extent to which different types of users of the patent system favour different features of grace periods.

2.3 Summary of our approach

We began the study by reviewing literature that could provide / form a theoretical assessment of how patent applicants should respond to the introduction of a grace period in Europe, taking into account how the grace period affects incentives and the observed actions of these parties in countries where a grace period is in force.

To understand more precisely how those that file patents in Europe would respond to the introduction of a grace period in Europe – and, more broadly, to understand their attitudes towards grace periods – it is necessary to engage with them directly. Therefore, we designed a questionnaire to extract information from European and non-European organisations which could be used in our assessment of the potential economic impacts of a grace period. The questionnaire covers issues such as current patenting practices, prior experience with grace periods, perceptions of the pros and cons of grace periods (including with respect to legal uncertainty) and stated responses to the introduction of the grace period.

While questionnaires are a useful way of collecting data from a relatively large sample of respondents, the drawback is that because of the relatively rigid format, the information retrieved in this way tends not to be very detailed or nuanced and can sometimes be difficult to interpret. For this reason we conducted a number of interviews with patent experts and organisations that responded to the survey.

Finally, we draw together these earlier tasks in our assessment of the economic impacts of a grace period. The economic analysis relies primarily on feedback from stakeholders via the survey and interviews. As described in greater detail below, survey responses were analysed both by the presentation of descriptive statistics (i.e. through the means of charts and tables) as well as via econometric analysis.

2.4 Structure of this report

The remainder of this report is structured as follows:

- chapter 2 presents the key findings from our literature review;
- chapter 3 outlines our approach to the survey and the characteristics of respondents;
- chapter 4 describes the prior experience of respondents with grace periods;

- chapter 5 discusses respondents' preferences for grace periods;
- chapter 6 assesses respondents' concerns over grace periods;
- chapter 7 considers respondents' likely responses to a possible European grace period;
- chapter 8 synthesises our assessment; and
- chapter 9 presents our conclusions.

3 Literature Review

This chapter presents a comprehensive review of the economic literature on the theoretical issues and the empirical findings that relate to the grace period. It should be noted from the outset that there is relatively little literature that focusses specifically on the grace period and its impacts, although this field of research has gained some momentum in recent years. This may, at least in part, have been prompted by the recent discussions and debate on the potential international harmonisation of grace period rules. Indeed, two important sources of information on the potential impacts of introducing a grace period in Europe are surveys of users of the European patent system that were launched with the specific purpose of gauging attitudes to harmonisation.

In this chapter we first explore the pros and cons of grace periods that have been identified in the literature and then describe the experiences of users of the European patent system in the absence of a grace period. We then present the views of various stakeholders on introducing a grace period in Europe as well as the potential benefits and drawbacks of harmonisation. We conclude by outlining some practical suggestions for designing a harmonised grace period that have been outlined in the literature.

3.1 Pros and cons of grace periods

The debate about the benefits and drawbacks of grace periods has intensified in recent years thanks to the ongoing discussions concerning the potential harmonisation of grace periods around the world. In this section, we summarise the key arguments for and against grace periods identified in the literature and describe the views of those that responded to the Tegernsee questionnaire.²

Roucounas (2006) describes the main arguments in favour of grace periods:³

“Research workers believe that the disclosure of their invention as quickly as possible by publication is a healthy procedure that advances access to knowledge and makes it possible for the inventor to ameliorate his/her findings. Besides, in many countries researchers are poorly informed about the otherwise complex Patent Law. Individual inventors by disclosing the state of their work can obtain funding and carry out tests to check whether the invention works.

² In July 2011, the patent offices of Denmark, France, Germany, Japan, UK, the USA and the EPO met in Tegernsee to consider the state of affairs concerning patent law harmonisation. This led to the creation of the "Tegernsee Group", mandated to engage in strict fact-finding on key harmonisation issues so as to provide substance for future evidence-based policy discussions. Following some initial discussions and studies it was agreed that a broad user consultation should be completed, including the development of a Tegernsee Joint Questionnaire to produce comparable data across jurisdictions. It is the results of this questionnaire that we describe in this chapter.

³ Roucounas, E. (2006), "The Debate Regarding the Grace Period in International Patent Law: A Reminder, in ALLEA Biennial Yearbook 2006", New Perspectives in Academia, Amsterdam.

Moreover, the value of an invention may not be immediately apparent to those who first produce it. When there are no definite results in a research project, and preliminary or intermediary results do not meet the conditions for patenting, researchers do not feel necessary engage into the procedure of patenting.”

In other words, the presence of a grace period “favours the quick circulation of inventions that would otherwise be kept secret”.⁴ This rationale enjoys particular support from inventors’ interest groups and the academic community as its purpose is essentially to protect their interests.⁵ Bagley (2006) points out that patenting disclosure rules constrain researchers’ behaviour and are not “conducive to academic discourse”.⁶

Straus (2006) lists a number of countries that have had grace period regimes (e.g. USA and Japan) and claims that they did not face any significant issues during its implementation period.⁷ While this supports the view that there are limited transitional issues involved in implementing a grace period, it does not provide any evidence with respect to the benefits or otherwise of grace periods. Moreover, most studies tend to overlook the fact that in a globalised world, the absence of grace periods in important markets (such as the Europe and China) influences the behaviour of global players, who usually report that their overall strategy is to file first and disclose later, thereby minimising any possible systemic negative side effects.

Support for grace periods is not universal, however, as not all stakeholders have the same interests or objectives as the academic community. Those that argue against grace periods typically put forward the following arguments:⁸

- difficulties of defining novelty;
- reduced legal certainty; and
- longer timeframe for clarifications.

Of these concerns, arguably the strongest objection of those who argue against a grace period is that it introduces significant legal uncertainty which would, in the end, outweigh the increased incentives to circulate information. Roucounas (2006) states that the reduction in legal certainty could lead to an increase in legal action which, in turn, could impede new investment in research.

Additional concerns are presented by Franzoni and Scellato (2010). Firstly, it is argued that a grace period would only act to extend the period until which protection expires. Moreover, there is a concern that while third parties can in “good faith” use inventions whose disclosure they have

⁴ Franzoni, C. and Scellato, G. (2010), “The grace period in international patent law and its effect on the timing of disclosure”, *Research Policy* 39, 200-213.

⁵ Moussa, F. (2009), “Statement in Favor of the Grace Period”, International Federation of Inventors’ Associations (IFIA).

⁶ Bagley, M. (2006), “Academic discourse and proprietary rights: putting patents in their proper place”, *Boston College Law Review* 47, 217-274.

⁷ Straus J. (2006), “Grace period: First real chance after seventy years”, Presentation in WIPO Open forum on the draft SPLT, March 3, 2006.

⁸ Straus J. (2006), “Grace period: First real chance after seventy years”, Presentation in WIPO Open forum on the draft SPLT, March 3, 2006.

witnessed, the grace period may not provide sufficient protection when third parties infringe the "good faith" principle and make inappropriate use of the invention.

Roucounas (2006) also claims that the European "first-to-file" system for patent applications would be in jeopardy because the existence of a grace period would not allow for the straightforward identification of whether a filing satisfies the novelty criterion or not.⁹

A summary of the pros and cons of grace periods is presented in the table below.

⁹ Roucounas, E. (2006), "The Debate Regarding the Grace Period in International Patent Law: A Reminder, in ALLEA Biennial Yearbook 2006", New Perspectives in Academia, Amsterdam.

Table 3.1: Pros and cons of grace periods

	Pros	Cons
Large companies*	No risk of accidental premature/incautious disclosure destroying novelty by an employee	
	GP allows for additional time for market screening	Increase in legal uncertainty, disputes over entitlement and prior art
	GP would give firms up additional time to test/improve and add features which have not been disclosed in the prior art and consult on the invention/product	Increased litigation costs
	Publications can still be used for patenting and commercial exploitation of the invention	Legal uncertainty likely to distort investment decisions
	Inventions could be presented at trade fairs without necessarily having to apply for patent protection in advance	Increased costs to secure "freedom to operate"
	Possibility to reduce costs of patenting by selecting the most promising inventions	Increase of risk of unintentional infringement by competitors Complicates the patent system

SMEs*	<p>No risk of accidental premature/incautious disclosure destroying novelty by an employee</p> <p>GP allows for additional time for market screening</p> <p>GP would give SMEs up additional time to test/improve and add features which were not disclosed in the prior art</p> <p>Publication can still be used for patenting and commercial exploitation of invention</p> <p>Inventions could be presented at trade fairs without necessarily having to apply for patent protection in advance</p> <p>Possibility to reduce costs of patenting by selecting the most promising inventions</p>	<p>Increase in legal uncertainty, disputes over entitlement and prior art</p> <p>Increased litigation costs</p> <p>Legal uncertainty likely to distort investment decisions</p> <p>Increased costs to secure "freedom to operate"</p> <p>Increase of risk of unintentional infringement by competitors</p> <p>Complicates the patent system</p>
Universities*	<p>No risk of accidental premature/incautious disclosure destroying novelty by employed researcher</p> <p>Inventions can be disclosed or presented at conferences without necessarily having to apply for patent before</p> <p>Easier to sign contracts and build Joint-Venture Research with the private sector</p> <p>Gain in academic reputation through the possibility of publishing before patenting</p>	<p>Increase in legal uncertainty, disputes over entitlement and prior art</p> <p>Increased litigation costs</p> <p>Legal uncertainty likely to distort investment decisions</p> <p>Increased costs to secure "freedom to operate"/do research</p> <p>Complicates the patent system</p>

		<p>Increase in legal uncertainty, disputes over entitlement and prior art</p> <p>Increased litigation costs</p>
Investors	<p>Inventors more keen to disclose before filing</p> <p>More time for market screening before filing increases success rates for market entry</p>	<p>Unclear IP rights phase extending from 18 to up to 30 months, longer time frame for clarifications</p> <p>Decrease in early investment decisions in firms due to uncertainty of the status of IP rights</p>
Public	<p>Earlier research dissemination</p> <p>More scientific publications</p>	<p>Complicates the patent system</p> <p>Delay of the moment at which invention will fall into public domain</p> <p>Greater and potentially longer lasting legal uncertainty</p>
EPO	<p>International harmonization of patent law generally in the interest of Patent Offices engaging in work sharing</p>	<p>Greater and potentially longer lasting legal uncertainty (extending from 18 to up to 30 months) for most stakeholders</p> <p>Greater complexity of the search and examination procedure, with resulting potential operational inefficiencies and additional costs</p> <p>Possible lengthening of the procedure due to the potential need for additional communication(s) with applicant to clarify the status of potential prior art items</p>
* From Europe/countries with no existing GP		<p>No free use of and/or license fee payments for technologies that have made use of GP before filing a patent in the US/JP/countries with GP</p>
* From US/JP/countries with GP	<p>Possibility to exclude from and/or collect additional license fee payments for technologies that have made use of GP before filing a patent in the U.S./JP/countries with GP</p>	

Note: Large companies, SMEs and Universities, have most pros and cons in common. However, each specific argument might apply to a different degree for the individual interest group.

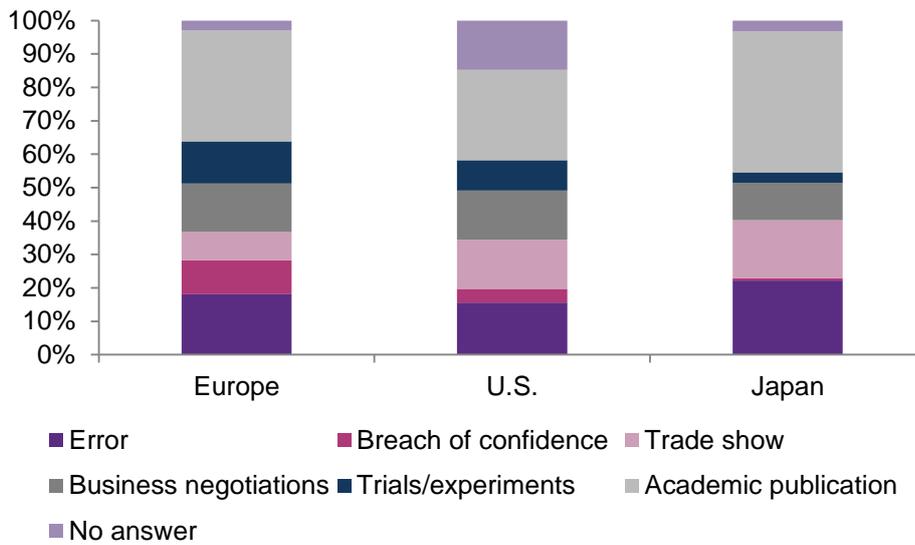
3.2 Experiences in the absence of a European grace period

In 2012, the Tegernsee Experts Group conducted a questionnaire to study four areas of substantive patent law harmonisation: the grace period; 18-month publication; the treatment of conflicting applications; and prior user rights. The questionnaire was conducted by European and national patent offices in Europe, US and Japan and a total of 737 responses were collected on the grace period part of the questionnaire. Among the European respondents, nine were national and supra-national European user associations which represent over 10,000 patent professionals and 217,000 companies across Europe. We focus our attention on results collected by the EPO and national patent offices in Europe.

At the outset, it is important to note that the sample of respondents is not necessarily representative of the whole population of users. In particular, the sampling methods employed by different patent offices are not consistent which make direct comparison of the results difficult. For instance, while some offices posted the questionnaire on their website to enable individuals to provide their responses, others used a non-self-selection procedure to gather their responses. Further, in terms of distribution of responses, some segments are less well-represented than the others (e.g. relatively few SMEs and universities responded). Although the findings are only indicative of trends and opinions, it is the most detailed survey to date on the fundamental issues explored. With the methodological caveats in mind, we summarise the findings of the grace period survey below.

In the absence of a grace period, businesses may face a risk of pre-filing disclosures by their research partners or by internal employees which may result in loss of patentability. Indeed, over 60% of the respondents reported that they had at least at one point felt the necessity to file patent applications after they had disclosed their inventions. As shown in the figure below, among those respondents who have faced a pre-filing disclosure, around 38% of disclosures occurred through the means of academic publication, particularly in Japan. Another major cause of disclosure prior to filing was internal error of inventor or employees, which accounted for around 20% of disclosures.

Figure 3.1: Causes of disclosure by region

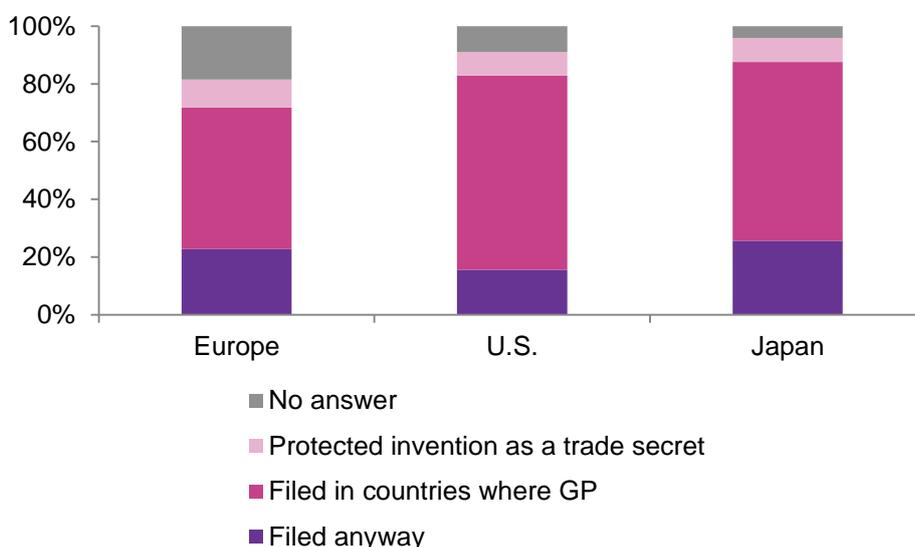


Source: "Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization", May 2014.

In Europe, around 64% of respondents indicated that they had made pre-filing disclosures. However, respondents to EPO survey suggested that the loss of patentability of an invention due to the non-existence of a grace period was rare or had limited impact.

Various strategies have been adopted by respondents to tackle pre-filing disclosures. The most popular approach, which accounted for around 60% of all responses, was to file an invention where a grace period existed. While protecting the invention as trade secret was also an option, it was noted that it may not always be feasible depending on the nature of the invention. Around 23% of respondents still filed an application for a patent anyway, perhaps with a narrower scope, and even though they might face a higher probability of rejection due to the disclosures. We present the different reaction of respondents in different regions in the event of pre-filing disclosures in the figure below.

Figure 3.2: Reactions to disclosure by region



Source: "Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization", May 2014.

It is often argued that accidental disclosure can be reduced with better understanding of the patent system and the grace period. The questionnaire results showed that while 37% of the European respondents (41%) believed their researchers/employees had a basic understanding of the patent system but little idea of grace period, only 24% believed they had sufficient knowledge of the patent system including the grace period. This finding suggests that the lack of education regarding the patent system can be a cause of untimely disclosure in Europe, given that the bulk of pre-filing disclosures were caused by academic publications or errors from internal staff and inventor.

On the other hand, since a grace period is not applicable in Europe, which is likely to be the primary market for most European respondents, it is not surprising to see little or no knowledge of its rationale and practice. The respondents who had experiences of it are likely to have exploited or at least intended to obtain a patent for their inventions in an overseas country with a grace period, such as the US or Japan. Approximately 63% of European respondents had invoked the grace period in the past, a majority of those in the US. Three respondents indicated that they had used the grace period in multiple countries, with two of those operating in the field of pharmaceuticals.

Among European respondents with experience of a grace period, a majority estimated that their frequency of using a grace period was between 0.1% and 1% of applications. However, the frequency can be argued to be overestimated if one compares it with the recorded number of applications. Findings from the EPO survey also showed that the actual frequency was likely to be lower than reported in survey responses and suggested that responses were likely to be based on perception or belief of the respondents rather than on solid empirical data. This suggests that the overall reliance on grace periods may not be high amongst those that file patents Europe and the majority of European respondents did not consider grace period to be a major factor in most of their patent applications. Indeed, several respondents to the EPO survey indicated that their reliance on the grace period was "extremely rare" since their primary market, Europe, does not offer a grace period.

The limited prior use of grace periods can be partly attributed to the lack of harmonisation of the grace periods between, say, the US and Japan together with the non-existence of the grace period in Europe. International players who aim to protect their inventions in Europe, for example, may not make use of the available grace period in other markets in order to avoid potential loss of patentability. As suggested by one European respondent, this has resulted in a "rare" reliance of grace period and limited number of patent conflicts.

Regarding their experience of the grace period, a majority of European respondents felt that the procedures involved when invoking the grace period were easy to follow in the various jurisdictions, representing 78% of respondents to EPO survey. However, one key difficulty that was reported by those that had made use of the grace period is the burden to prove that the inventor and/or author in the patent application is identical to the author of the earlier publication during the grace period.

The questionnaire also explored the role of a grace period in the success of a business or research activity. Among the European respondents in the EPO survey who had relied on the grace period

in the past, 54% did not see the grace period as a contributory factor to the success of their business. The comments collected from the respondents suggested that the reliance on the grace period was limited due to geographical constraints of the grace period on patentability. However, around 33% of respondents that had relied on the grace period indicated that it had contributed to the success of their business, for example by enabling a business to extend the sales of a product to the US market following a trial in one market. In contrast, a higher proportion of respondents in the US felt that the grace period played a positive role in the success of their business or research activities, representing around 56% of respondent to the US survey.

While the impact of a grace period on the success of a business or research activity may be limited, only 16% of European respondents felt that the absence of a grace period in a country was a factor in research or business decisions. The proportion of respondents was again higher in the US, with around 52% of respondents feeling that non-availability of a grace period would affect their research or business decisions. For instance, some European respondents suggested that the inability to secure patent protection in a sufficient number of markets when a grace period has been used in one market can affect the performance of a project and thus alter the decisions of the inventors with respect to disclosure and filing.

The experience in the absence of the European grace period faced by users is likely to vary by the characteristics of the organisation. Next, we report on results of the Tegernsee study broken down by affiliation - large companies, SMEs and universities.

Large companies

In general, the Tegernsee study shows that a majority of large companies in all three regions had used a grace period in the past but the frequency of their reliance on it was fairly low. For instance, 65% of large companies in Japan have used a grace period for less than 0.1% of their patent applications. One of the major reasons for using a grace period is pre-filing disclosure at academic conferences. This is not surprising in the context of a growing popularity of joint research projects with universities/research institutions, with over 70% of large companies in Japan and US having had such collaborations. Other reasons for using grace period systems are accidental disclosure due to internal errors, representing 50%, 16% and 28% in Japan, the US and Europe respectively, noting that the European results were based on only the EPO, Germany and UK surveys.

Regarding the level of support for the grace period, there was a large discrepancy between respondents from different regions. A large proportion of large companies in Japan and the US favoured the grace period while only a minority of respondents (around 32%) in Europe agreed.

SMEs

Due to insufficient information collected from SMEs in Europe, the Tegernsee study's findings on SMEs were limited to Japan and the US. In these countries, the experience and views of SMEs of a grace period was very different to those of large companies. In particular, many SME respondents had no experience of using the grace period. This may be due to their lack of resources or knowledge of a grace period or patent system in general, but also to the limitations of the Japanese grace period under the old law. As suggested by respondents in Japan, many SMEs may

not have dedicated staff to manage patent related issues and would not be aware of the possibilities afforded by a grace period when they tried to file patent applications.

Also, a larger proportion of SMEs felt the need to file patent applications after they had disclosed their inventions than large companies. The pre-filing disclosures were reported to be driven by a mixture of causes. These were internal errors (39%), disclosure at exhibitions (37%), disclosure at business meeting (31%) and presentations at academic conferences (37%). It is interesting to note that the percentages of disclosure caused by exhibitions and business meetings for SMEs were higher than that for large companies and universities/research institutions.

In the event of disclosures, their strategies also differed from those of other two types of applicants. While large companies and universities/research institutions tended to file patent applications only in countries/regions where they were able to use grace periods, SMEs choose to file patent applications after disclosure even in the absence of a grace period.

Overall, a majority of SMEs expressed support for grace period.

Universities/research institutions

Once again, due to limited responses collected in Europe, the Tegernsee analysis on universities/research institutions was confined to responses from Japan and the US only.

With the academic interest to publish research results as early as possible, one would expect that universities/research institutions would be a heavy user of a grace period as it can difficult to conciliate academic freedom with the limitations of patent management. This is confirmed by the survey results of the Tegernsee study. The level of support for the grace period among universities/research institutions is the highest among all type of organisations, representing 80% in Japan and 73% in the US. Also, a significant proportion felt the necessity to file patent applications after they had disclosed their inventions in academic papers. The proportion of the respondents who had used the grace period was also very high. In particular, around 94% of respondents in Japan had used a grace period and the most common frequency of reliance was recorded to be relatively high, at about 10% of applications.

3.2.1 Empirical evidence on the impact of the US grace period

Franzoni and Scellato (2010) undertook an empirical analysis of the US grace period which sought to:

- determine how often the grace period is used;
- estimate the lag until an invention is disclosed in academia (both with and without grace period); and
- investigate the factors that determine the lag between patent application and academic dissemination.

The study's methodology involved the matching of patents with scientific articles into so-called "duals". "Duals" are pairs of scientific articles and the patents which these articles describe. Through this matching exercise, one can directly account for the time lag between the patent priority date and the date of publication of the paired scientific article. This approach has been

used extensively in past empirical studies as it is a relatively simple and robust approach to defining the time lag (Ducor, 2000; Murray and Stern, 2009; Lissoni and Montobbio, 2008)".¹⁰

The Franzoni and Scellato paper was the first attempt to quantify the frequency with which the grace period is used and hence the results came with a number of caveats. First, since their sample is based on university patents only, one should be cautious when extrapolating the results to other types of applicants. Second, there can be factors external to the grace period, such as procedural differences, which could be responsible for publication delays and so an observation that time lags are lower where the grace period is used may not only reflect the decision to use the grace period.

Bearing these caveats in mind, the authors found that, despite the lack of international harmonisation, the grace period provision is used by nearly one third of US applications from universities. Their results also confirm that if the inventor wishes to patent outside the US, or if an industrial collaborator is present, the publication is increasingly delayed as the grace period is used less frequently for such applications.

The Tegernsee study also explored the reliance of the grace period by US respondents. Assuming that the US is the primary market for most of the respondents to the survey conducted by the USPTO, the findings show that around 67% of US respondents had used the grace period. The most commonly reported frequency of reliance on the grace period was between 1% and 10% of applications.

The extent to which the results of Franzoni and Scellato (2010) and US survey of the Tegernsee study are applicable to the European patent system – and to the debate over whether a grace period should be introduced in Europe – is not clear. It may be the case that the characteristics, attitudes and behaviour of academics that file in the US differ significantly (in an unobserved manner) from those that file in Europe. To understand how European researchers might react to the introduction of a grace period it is necessary to rely on surveys of users of the European patent system. The results of such studies are discussed in sections 3.3.1 and 3.3.2.

3.3 Views on introducing a grace period in Europe

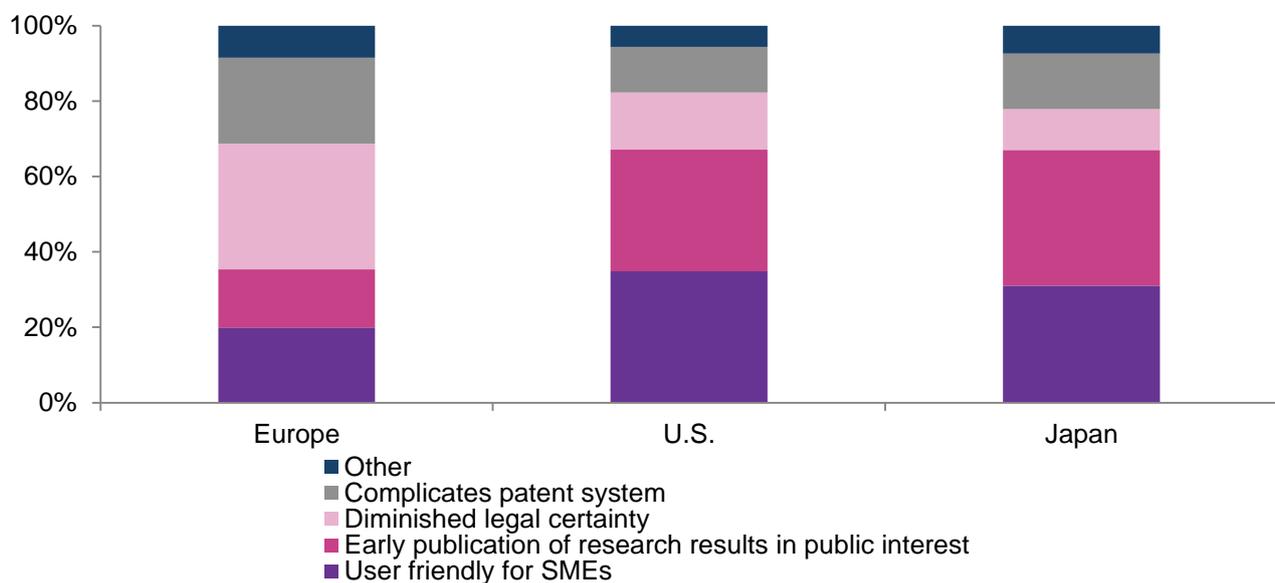
3.3.1 Views of respondents to the Tegernsee survey

There was no consensus amongst respondents to the Tegernsee survey on the importance of introducing a grace period in Europe. In contrast to the vast majority of the respondents in Japan and the US who supported a grace period, only a slim majority of European respondents favoured it, at 53.8%. Within Europe, views also differed across Member States. A large majority of respondents to the survey conducted by the German national patent office were opposed to the introduction of the grace period (61.5%) against only 13% of respondents to the survey conducted by the UK's national patent office.

¹⁰ Franzoni and Scellato (2010), "The grace period in international patent law and its effect on the timing of disclosure", *Research Policy* 39, p.204.

The questionnaire also explored the rationale underlying the respondents' positions. Respondents were asked to specify the potential implications of the grace period they would expect. The feedback collected from European respondents differed significantly from the views of respondents from the US and Japan. A higher percentage of European respondents selected options reflecting negative impacts of the grace period than respondents from the other two regions. Around 33% of European respondents felt that the introduction of the grace period would hamper legal certainty while around 23% of respondents believed that it would complicate the existing patent system. On the other hand, over 60% of respondents in the US and Japan indicated that the grace period can be user friendly for SMEs and/or enable early publication of research which would be in the interests of the general public. We present the views of respondents in different regions below.

Figure 3.3: Implication of the grace period, by region



Source: "Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization", May 2014.

To illustrate the range of views on the impact of the grace period more clearly we present a selection of comments from European respondents below.

In favour:

"The grace period adds complexity to the patent system however on balance it is worthwhile in order to provide a harmonized patent system which allows equivalent patents to be obtained in all major commercial territories. The current two tier system is not ideal to stimulate the innovation economy."

Against:

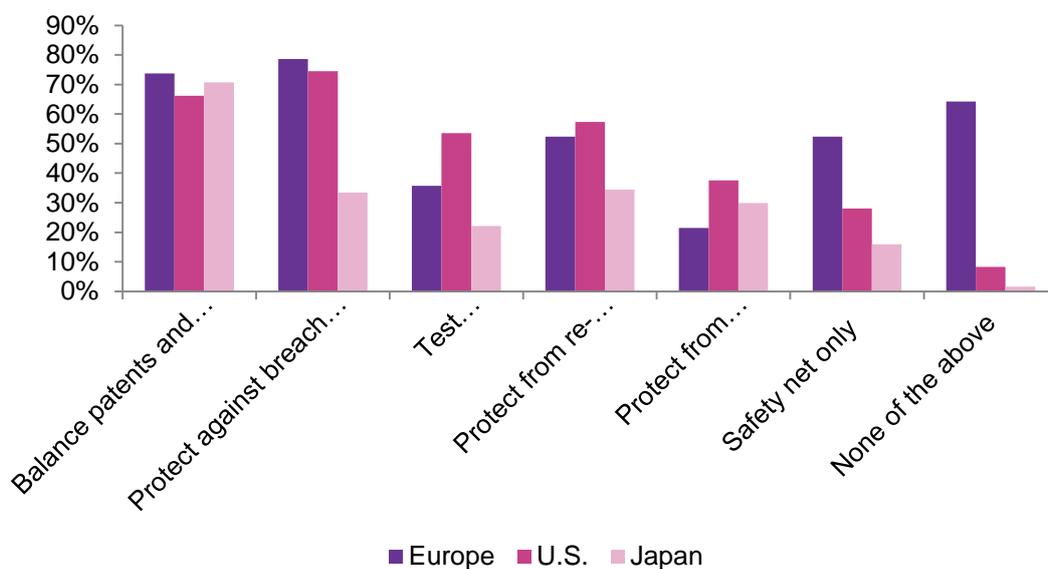
"The grace period, although a desirable feature, should not become the norm because of legal certainty risks, and thus SMEs and individual inventors, like any other users, should be educated on the risks involved and should continue to strive for filing before disclosing."

"A grace period causes confusion and leads to a false sense of safety. Premature publication undermines the potential value of a new technology."

The questionnaire also explored the policy objectives of a grace period with the respondents who were in favour of it. The results suggested that protection against breach of confidence and balancing patents and science were the two main policy goals that should be pursued through a grace period. On the other hand, only 18% of European respondents supported that a grace period should protect applicants from disclosures of independent inventions in the grace period interval between the first disclosure and the filing date of the application, compared to 38% of respondents in the US and 30% in Japan. Also, around 49% of European respondents suggested that the scope of a grace period should be limited to a safety net function only, but only 28% and 16% of respondents in the US and Japan, respectively, supported this view. Finally, in an additional question asked by the EPO questionnaire, 88% of respondents believed that inventors should bear any risks associated with pre-filing disclosures.

However, given that individuals were allowed to select multiple options, a grace period defined as a safety net may be incompatible with other policy goals chosen by the respondents. This included protecting inventors who first disclosed an invention from any third-party interference during the grace period. Overall, the disagreement on the policy goals of the grace period, particularly on the safety-net design indicates that there is a degree of divergences with respect to how users view the ideal scope of the grace period across jurisdictions. We present the responses below.

Figure 3.4 Policy goals of a grace period



Source: "Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization", May 2014.

A selection of comments on the policy objectives of a grace period from European respondents is shown below, the majority of which suggest that a grace period should act as a safety net.

"A grace period just increases legal uncertainty and therefore in the long run threatens the patent system. The patent system ought to be made simpler than it is in order to function properly, not more complex or legally uncertain, which is the case when a grace period is used."

"We are only in favour of a grace period as part of global harmonization of the patent law in this respect. Otherwise we do not support the introduction of a grace period beyond what already exists. The safety net function needs to include disclosures of the inventors' invention

not only by inventors/patentee himself, but also e.g. by collaborators (if not inventors) or by official bodies. This should also include instances other than breach of confidence, in particular if inventor/collaborator/official body is required to disclose this information. Third party disclosures derived from the invention that was published should be graced.”

“A grace period should only be available in cases where the discloser is either the inventor or the applicant or disclosure is in breach of the inventor's rights and thereby the grace period acts as a safety net.”

3.3.2 Views of the academic community

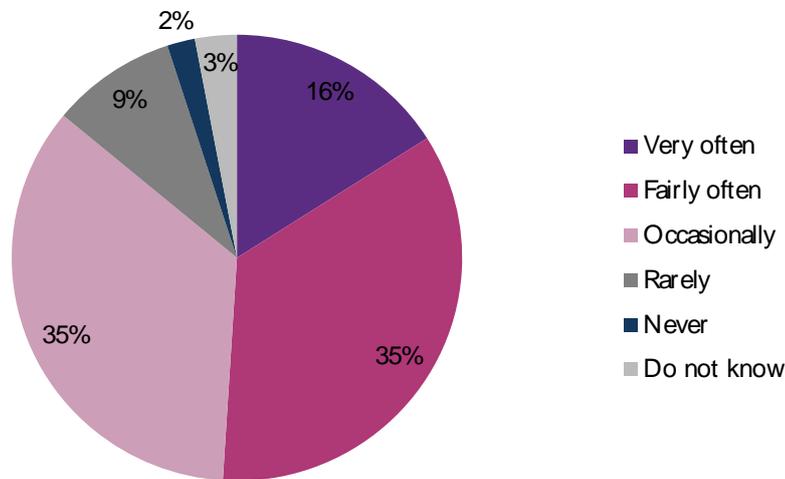
The Science Business Innovation Board conducted a survey to gauge the attitudes of European universities and research institutes regarding the grace period. Its main finding is that academic researchers consider premature public disclosure to be an important issue and, for that reason, they are strongly in favour of a grace period. A total of 147 responses was received, of which 67% indicated that they are in favour of implementing a grace period in Europe while just 24% were against.

Of those that favour the implementation of a grace period in Europe, almost half claim that it will enhance academic freedom to disseminate information while approximately 45% claim that they are motivated by the avoidance of potential losses due to the inability to protect their intellectual property. Thus, they tend to view the grace period primarily from the point of view of the innovator, since they are rarely in the position of using new technology from the vantage point of the competitor.

On the other hand, those who are against the implementation of the grace period are primarily concerned with the increased uncertainty that would surround issues of both patent entitlement and validity, due to an increased level of difficulty in ascertaining the status of prior publications as prior art while an increase in patent or litigation costs deriving also from these issues is considered to be the second most important reason to be against the implementation of a grace period.

The survey also asked respondents about the extent to which the lack of a grace period has affected the possibility of filing for patent protection in the past. As shown in the figure below, more than half of respondents reported that premature public disclosure had led to the inability to protect their invention with a patent either fairly or very often. Moreover, only 2% claim that they never had such an issue.

Figure 3.5: Percentage of respondents from the academic community who feel premature public disclosure has led to an actual loss of patent protection for their organisation



Source: Science Business Innovation Board (2013), "A grace period for patents: Could it help European universities innovate?".

Given that the European patenting system has been established for a significant period of time, these results are somewhat surprising: we might have expected the frequency of accidental premature disclosure to be lower than reported in the survey results as people would be expected to learn from their past mistakes. One possible explanation may be that while university technology transfer offices are well aware of the rules surrounding pre-filing disclosure, individual academic researchers may be less well informed. If so, the spirit of academic critique and feedback may lead to a higher rate of accidental disclosures than would be expected *ex ante*. However, the possibility of strategic responses to the survey cannot be ruled out given that universities and research institutes are, overall, in favour of a European grace period.

The hypothesis of the previous paragraph is supported to some degree by the survey finding that, most often, premature public disclosure is handled through the provision of formal training/education. Alternatively, a significant number of respondents resort to *ad hoc* management of occurring issues, dissemination of information regarding the issue or the enforcement of written policies.

The findings of the survey are summarised in the following statement:¹¹

"European technology transfer professionals favour a grace period for inventors by 2-to-1, our research suggests. Further, individual experts provide strong anecdotal evidence to highlight the potential economic loss to European universities resulting from an environment that forces academics to choose between patenting and academic advancement. On the other hand, support for a grace period isn't universal, particularly, it appears from our preliminary soundings, in the corporate world."

¹¹ Science Business Innovation Board (2013), "A grace period for patents: Could it help European universities innovate?", p.26.

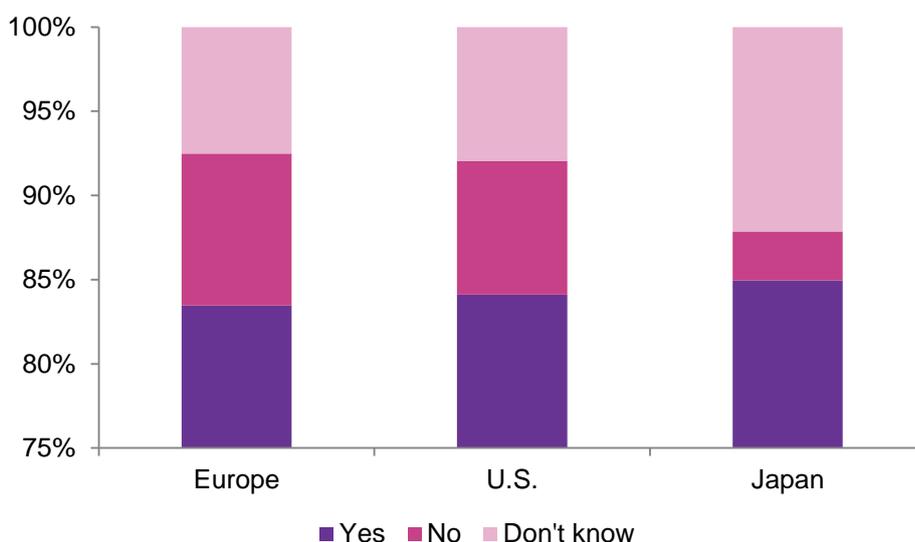
3.4 Harmonisation

At present, a key issue for those that would wish to make use of national grace periods lies in the lack of harmonisation between countries. While inventors that wish only to patent in their domestic market are not affected by a lack of international harmonisation, those who are interested in accessing markets abroad may face some challenges due to the lack of harmonisation and this may affect their decisions of whether to make use of the grace period in their home market.

More specifically, an inventor who can make use of a grace period in their domestic market but who wishes to exploit the patent for their product overseas will need to consider the relevant grace period rules in all markets of interest. Hence, if one of the target countries does not allow for a grace period then the domestic grace period becomes irrelevant. This is the case because the disclosure that took place in the domestic market will be considered “prior art” abroad and thus the invention will not be classified as novel. For inventors who have a choice, this will lead them not to disclose their invention prior to filing their first patent application.

Overall, 84% of respondents to the Tegernsee survey had experienced different patenting outcomes in different countries due to the lack of a grace period, i.e. they have obtained a patent in one country but failed to obtain protection in another country with no grace period. Interestingly, the findings on different regions covered by the survey suggest a similar picture, with a vast majority of individuals having faced problems in obtaining a patent in the absence of a grace period. We present the distribution of the responses below.

Figure 3.6: Instance of inability to obtain patent due to lack of grace period with differences in patent outcomes



Source: “Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization”, May 2014.

The lack of harmonisation has resulted in a loss of novelty in some countries and somewhat undermined the benefits of a grace period. This is because any information disclosure of an invention in a targeted market where grace period exists (e.g. US) will be considered as pre-filing disclosure in another market with no grace period, such as Europe. As long as one or more of the

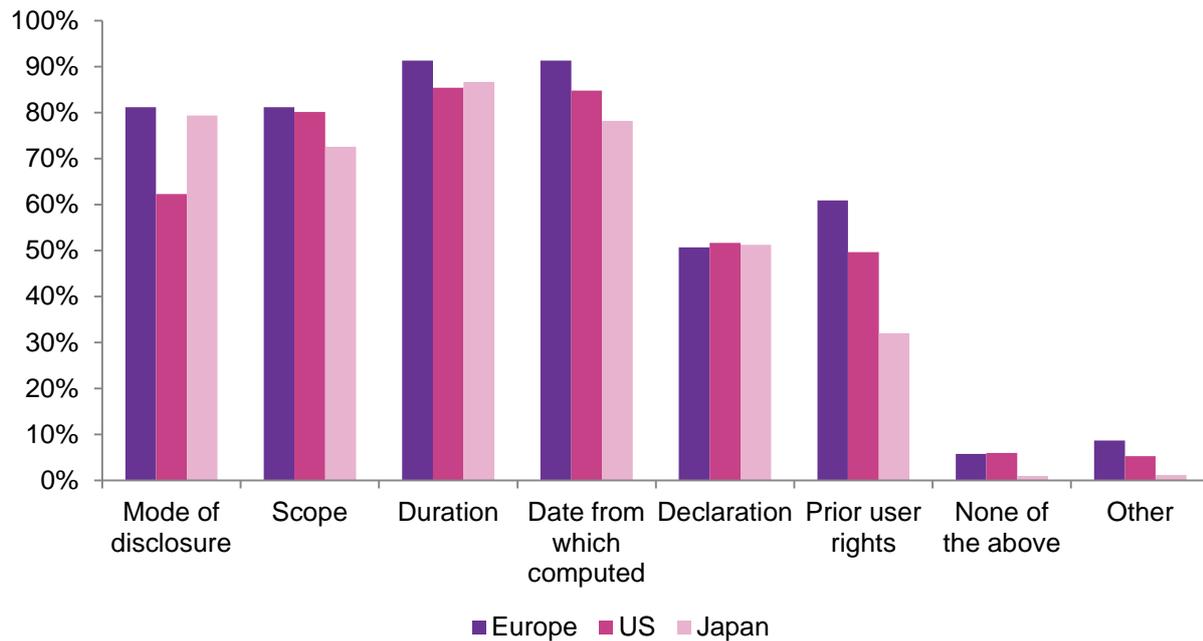
targeted markets have no grace period, the inventors may not be able to benefit from the existence of a grace period or may have to alter their patenting strategy, i.e. by adjusting the timing in filing a patent or changing the geographical coverage. In addition, the reliance on the grace period is further restricted due to the variation in the grace period in different jurisdictions, such as duration and filing procedures.

Indeed, among all the respondents who supported a grace period in principle, the vast majority (84%) felt that if there was a grace period, it should be harmonised with other international systems. Three out of the nine European user associations having responded to the EPO survey provided the following suggestion:

“A grace period only makes sense if it is harmonized worldwide, without which the patent system would only be further complicated and would amount to a patchwork of diverging regulations. Introducing a grace period without harmonization would result in a situation where patents would be granted in some countries but not in others, depending on the availability of a grace period or not, on its length and on its features. Such a situation would trigger unnecessary complexity for both patent applicants and third parties, resulting in an unpredictable and uncertain environment from both a legal and business perspective. However, the need for global harmonization regarding the grace period does not exclude the possibility for a few countries to have a leading role in this process.”

On the other hand, some respondents were against the grace period in principle and believed that there should be harmonisation on the basis of an absence of grace periods to improve legal certainty.

Regarding individual elements of the grace period, the duration and date from which the grace period is computed, mode of disclosure and scope of the grace period were ranked as the four most important features requiring international harmonization, each representing 60 to 90% of respondents in each region. With regard to prior user rights within the context of a grace period, around 62% of European respondents stated that they should be harmonised, compared to 50% in the US and 32% in Japan. We present the results of the survey below.

Figure 3.7: Elements for harmonisation

Source: "Consolidated Report on the Tegernsee user consultation on substantive patent law harmonization", May 2014.

3.5 Practical suggestions

Building on their research findings, several papers have offered policy recommendations or suggestions as to how to improve the current legal framework governing grace period issues. For example, Franzoni and Scellato (2010) make the following policy recommendations:¹²

"We thus suggest that an efficient international law should introduce the grace period, without extending the exposure by third-parties to uncertainty. In particular, we propose the introduction of a grace period exception for a limited time, such as six months, coupled with a duty of declaration and a request of accelerated procedure. The disclosure prior to filing should be clearly indicated by the patent applicant upon filing for the exception to be effective. This helps also to ease the work of patent examiners. Whenever such a course of action is taken, the applicant must be required to file an accelerated examination request and pay an additional fee. This way, the patent application will be published at the latest 12 months after filing and thus a maximum of 18 months after the initial disclosure."

Bagley (2006) offers an additional point of view.¹³

"Under my proposal, the current one-year prior art grace period and the eighteen-month publication system would remain intact. The patent laws would be amended, however, to create an optional two-year grace period for university researchers needing the additional prior art protection because of public disclosures made through presentation or publication activities. In

¹² Franzoni, C. and Scellato, G. (2010), "The grace period in international patent law and its effect on the timing of disclosure", *Research Policy* 39, p.209-210.

¹³ Bagley, M. (2006), "Academic discourse and proprietary rights: putting patents in their proper place", *Boston College Law Review* 47, 217-274.

exchange for the front-end extension of grace, researchers choosing to avail themselves of the provision would agree to immediate publication of their patent application upon filing, instead of relying on the eighteen-month blanket of secrecy provided to other applications.' This two-part system would have the effect of enabling academic researchers to engage in the discourse so necessary to norms of open science while still giving third parties an early indication, through immediate publication, of whether patent protection would be sought for information disclosed in public forums. By narrowly tailoring these proposed changes for exclusive use by academic researchers, the impact of increased uncertainty on third parties should be minimized.”

The recommendation drawn from the results of the Science Business Innovation Board survey is that further research should be conducted, particularly on the economic impact of different grace period regimes. Policy makers are urged to consider universities’ arguments, especially since they face increasingly challenging economic goals. The report suggests that a possible solution could be to introduce a six month grace period in Europe which would be restricted to the applicant’s own-disclosures – a solution which exists in most of the countries which have a grace period, including such major jurisdictions as Japan and Korea. It is also suggested that there may be merit in requiring the formal identification of such “applicant disclosures” at the time of filing.

Finally, respondents to the Tegernsee survey were asked to provide their opinions on the following areas of a grace period:

- Formal procedures/declaration.
- Duration of the grace period.
- Date as of which the grace period term should be computed.
- Prior user rights, to protect third parties.

The majority of respondents to the Japan and EPO surveys (64% and 62%) supported a mandatory declaration, mainly because it would enhance legal certainty for third parties and would simplify both the work of patent offices and the communication process. For example, one European respondent stated:

“A majority number of our member companies support the principle of a declaration. It is however understood that the specifics of a declaration are significant and will require further discussion.”

On the other hand, a large proportion of respondents to the US survey felt that a mandatory declaration was not necessary and would impose an additional burden on applicants and/or patent offices. It was argued that it might also have a preclusive effect in that a failure to declare could lead to a disclosure not being graced and there were arguably risks of possible manipulation by applicants.

The duration of a grace period can be considered an important feature of a grace period and should balance the interests of different parties. The majority of respondents to the EPO and Japan surveys (57% and 65% respectively) favoured a six months duration of the grace period whereas 65% of respondents to the US survey supported a longer duration of 12 months.

Another debate surrounding the implementation of a grace period concerns the starting date of the term of a grace period. Unlike the views on the duration of a grace period, the majority of respondents in all regions stated that a grace period should start from the priority date so that all

subsequent filings would also benefit from the grace period, representing 63%, 64% and 71% of respondents in Japan, the US and Europe respectively. On the other hand, around 30% of respondents overall felt that a grace period should be computed as of the filing date, in line with the non-prejudicial disclosures provision of current Art. 55 EPC.

3.6 Summary

Overall, there is little clear evidence from the literature on the potential impacts of implementing a grace period in Europe. It is clear that such a proposal is more attractive to some stakeholders (e.g. universities) than to others and it is equally clear that there are both pros and cons to grace periods. The literature does not provide a sufficient basis on which to weigh up those pros and cons, nor to assess the extent to which different definitions of the grace period would affect the magnitude of those pros and cons.

4 Survey Approach

To understand more precisely how those that file patents in Europe would respond to the introduction of a grace period in Europe – and, more broadly, to understand their attitudes towards grace periods – it is necessary to engage with them directly. Therefore, we designed a questionnaire to extract information from European and non-European organisations which could be used in our assessment of the potential economic impacts of the grace period.

4.1 Questionnaire design

The key purpose of the survey is to provide information on patent applicants' perceptions of the pros and cons of grace periods (including with respect to legal uncertainty) and to understand how applicants are likely to react if a grace period were to be introduced in Europe. More precisely, the questionnaire (which was developed in close collaboration with the EPO) focuses on the following issues:

- **Opinions on different aspects of the grace period:** The survey asked respondents to indicate whether or not they support a grace period in principle and to report their views on a number of specific issues, in particular on duration, mandatory declaration requirements, the scope of the grace period and prior user rights amongst others.
- **Grace period design:** Respondents were asked to consider the characteristics of three specific grace periods – the current grace period provided under US law, the current grace period in Japan and a grace period aligned on a safety-net definition proposed by European users within the framework of the Tegernsee User Consultation. The questions sought to understand whether each definition would be supported by the respondent if it were the only option available, and which of the options would be preferred.
- **Prior experience of grace periods:** Given that grace periods are a feature of numerous patent systems around the world it was likely that some respondents would have had prior experience of them. This set of questions asked respondents to indicate the extent to which they had used different grace periods in the past, the reasons for such use and the manner in which the pre-filing disclosure occurred.
- **Expected response to introduction of European grace period:** Should a safety-net grace period be adopted in Europe, it could be expected to affect the filing strategies of users of the European patent system. It would allow inventions having been patented thanks to the benefit of a grace period abroad to be protected also in Europe and might affect the decisions of users about when to disclose their innovation. This set of questions aimed to identify the expected scale of such effects.
- **Legal uncertainty:** If a grace period were introduced in Europe, it would create greater legal uncertainty for all stakeholders of the patent system. These questions explore respondents' views on the potential impacts of greater legal uncertainty, including costs.

- **Profiling questions:** It was anticipated that respondents' views would vary depending on the country in which they were based, the type of organisation, their prior use and/or knowledge of the patent system and so on. For example, respondents from the US might be more likely to favour a harmonised grace period which shares attributes with the current US system than would be Japanese respondents (who are more likely to favour a harmonised definition in line with the current Japanese system). Therefore, the questionnaire also included a number of profiling questions allowing us to break down responses according to the affiliation, technical field and geographical origin of the respondents.

A total of 43 questions were included in the questionnaire, which was distributed to entities having filed a patent application at the EPO in 2013, as described in greater detail below.

4.2 Sample selection

Based on the discussions with the EPO, a target of 800 responses was set to ensure that we would achieve significant results. The main target groups were applicants from the US, Japan and EPO member states, split between universities/public research organisations (PROs), large companies, and SMEs. The breakdown of the target was as follows:

- 400 respondents from EPO member states, of which 40% would be large companies, 40% would be SMEs and 20% would be universities / PROs.
- A total of 400 respondents from Japan and the US, of which 40% would be large companies, 40% would be SMEs and 20% would be universities / PROs. An even split between US and Japanese respondents for each target quota group was to be sought.

The rationale for seeking more respondents from Europe than from either the US or Japan individually was twofold. First, the majority of applications filed at the EPO are from European organisations and so it is more representative to secure a higher number of responses from Europe than to seek equal response numbers in the US, Japan and Europe. Second, in some cases it will be interesting to analyse responses from European applicants alone and 400 responses is a sufficient basis for that purpose.

To achieve these responses, a minimum sample of 8,100 applicants was requested with the following split:

- 2,600 from EPO Member States;
- 1,100 from Japan; and
- 4,400 from the US.

To avoid possible survey fatigue among EPO applicants 'small' applicants that were already listed to be approached for the EPO annual Patent Filing Survey 2014 were excluded.¹⁴

¹⁴ Each year, the EPO surveys a sample of its applicants annually to: estimate how many filings might be expected at the EPO and other patent offices over the next three years; forecast the budget and manpower resources required to cope with the estimated number of filings; understand the processes that lead to an application being filed; and collect information about economic trends.

The EPO provided the market research company Accent (Europe Economics' collaborators on this study) with a sample based on applications filed at the EPO in 2013 (Euro-direct, excluding divisionals, and Euro-PCT regional phase) with simple random samples taken separately for US, Japan and European applicants.¹⁵ This strategy could result in the same company being selected more than once but any such duplicates (identified using the raw name of the applicant) were then removed.

To distinguish 'large' from 'small' applicants at the EPO, it was assumed that large companies file more applications than the smaller ones. On this basis, applicants with more than four applications were classified as 'large', and applicants with fewer than five applications were classified as 'small'. Universities and PROs were identified only after the sample was selected.

On this basis, the EPO provided a gross sample of 12,846 contacts, broken down as per the table below.

Table 4.1: Sample characteristics

Region	Number of applications sampled	Number of applicants	Applicants with five or more filings in 2013	Applicants with fewer than five filings in 2013
Europe	10,000	4,393	1,385	3,008
US	27,000	6,591	924	5,667
Japan	22,555	1,862	484	1,378
Total	59,555	12,846	2,793	10,053

Note: a higher response rate was expected from European companies and hence there were fewer contacts from this region than from the US. The Japanese sample included all companies from that country having filed an application at the EPO during 2013.

An additional sample of universities, public research organisations and non-profit organisations was subsequently provided by the EPO. Participants in the Unitary Patent / United Patent Court survey, which was carried out at the end of last year, were only approached if they had expressly agreed to be contacted again by ticking the appropriate box within that survey. Given that these sample overlapped, it was necessary to remove perfect duplicates (i.e. users with identical addresses and names) were removed from the final sample. This resulted in a final usable sample of 12,228 companies.

Prior to distributing the survey, Accent contacted companies in the sample by telephone to secure their participation in the study and to identify the appropriate email address to send the survey to. One element of the recruitment process was to identify the person within the company that would be best placed to complete the survey on the company's behalf. We first asked to speak to the person who decides if the company needs to apply for patents, for example the head of the legal department, the head of the intellectual property department or the head of the research and development department. Having identified that individual, we provided a detailed description of the survey and checked that they were indeed the best person to respond on the company's behalf.

¹⁵ Due to the sampling strategy, non-users of the EPO were not included in the sample and hence their views could not be analysed. We note that this sampling strategy means that the likelihood on inclusion in the random sample is increasing in the number of filings made at the EPO during 2013.

Given that the total number of contacts exceeded the target of 8,100 it was not necessary for Accent to contact every company for which information was available, with the exception of Japan. A total of 10,109 telephone number were dialled and 2,335 email addresses were obtained. In addition, there were 1,464 email addresses that could be re-used from the Unitary Patent study and hence the Grace Period survey was sent to 3,799 email addresses. A total of 820 complete responses to the survey (i.e. responses where all sections of the questionnaire were at least partly responded to) were achieved, giving a response rate of 22 per cent relative to the number of emails sent.

4.3 Questionnaire dissemination

A number of questions in the survey are likely to have required the respondent to refer to records, consult with colleagues or spend some time considering the response. It is more difficult to obtain accurate feedback on these topics in a one-to-one telephone interview where the respondent may feel they have to give instant and less than fully considered responses. An online approach enhanced the quality of responses by taking these factors into account in designing the questionnaire interface. Respondents had the opportunity to suspend completion and log on at a later time without losing previously entered data.

The online self-completion survey was also designed to help address the problem of other self-completion methodologies, such as the postal route, where the effort of completing and posting the survey can deter respondents. These are also more likely to attract respondents atypical of the survey population as they tend to be more positively or negatively motivated to respond. In addition, as some respondents may regard the topic to be commercially sensitive, this may discourage participation. With the online methodology, a number of steps were taken to minimise this kind of survey bias and enhance completion rates. The approach used in the survey was to send email invitations with a link to the survey questionnaire. In order to encourage participation the email and letters included the following:

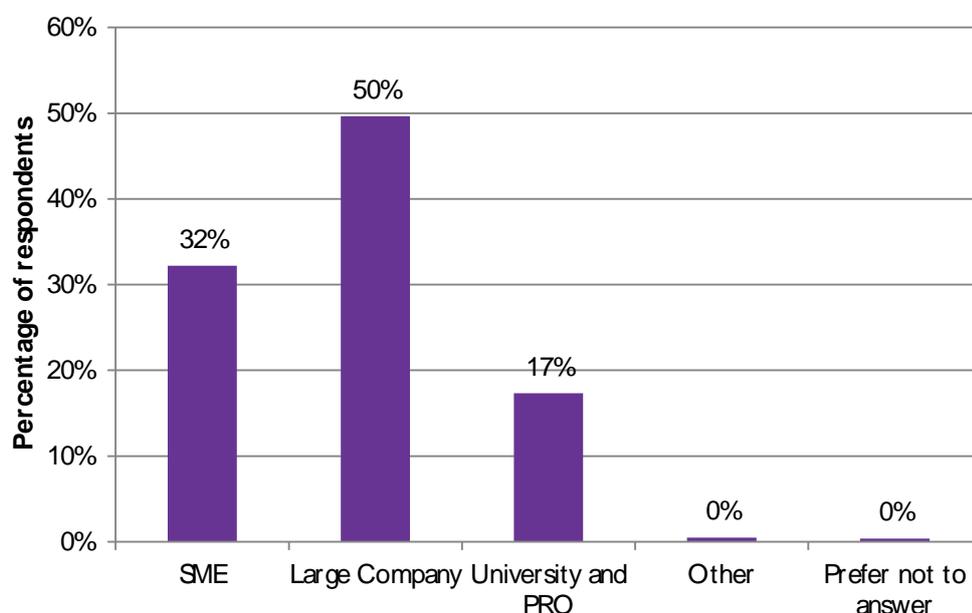
- emails contained a link to a statement of authority hosted on the EPO's website. A letter of authority was enclosed with the letter of invitation. The statement included a contact email address at the EPO, enabling the EPO to answer any queries about the research;
- an email address for the UK's Market Research Society was included allowing verification that Accent and Europe Economics are bona fide research providers;
- information was given highlighting that the email link is secure;
- a statement was included guaranteeing respondent confidentiality;
- contacts at Accent and Europe Economics were given in case respondents had any queries;
- when a respondent clicked on the link they saw a message making it clear that they were being transferred to a secure 'https' type website – this was to further enhance confidence in the confidentiality of the research;
- clear instructions were given on how to proceed through the questionnaire using appropriate signposting; and
- a Word version of the questionnaire was sent for them to review the questions in advance and if necessary complete the survey as a Word document.

The pilot phase of the survey commenced on 13 May 2014 and the required sample of 20-complete responses had been achieved by 15 May 2014. Following some minor edits to the questionnaire, the main stage of the fieldwork commenced on 23 May 2014 with a soft launch (i.e. a few hundred invitations were sent) in advance of a full launch on 27 May 2014. The survey closed on 15 July 2014.

4.4 Characteristics of respondents

The results presented in this section are based on 820 complete responses to the survey (i.e. responses where all sections of the questionnaire were at least partly responded to) of which 452 are from Europe, 163 are from Japan and 205 are from the US. Out of these respondents, 759 answered to all questions presented in the questionnaire. The characteristics of respondents by type of organisation, as reported by survey respondents themselves, are shown in the figure below.

Figure 4.1: Respondents by type of organisation



The number of respondents per type of organisation is further broken down by country of origin with the results presented in the following table. The most represented sub-group is that of large companies in Europe (25%) followed by SMEs in Europe (17%). SMEs are the most represented category in the US with 12% of total answers while large companies follow closely with 10%. For Japanese respondents the vast majority are large companies.

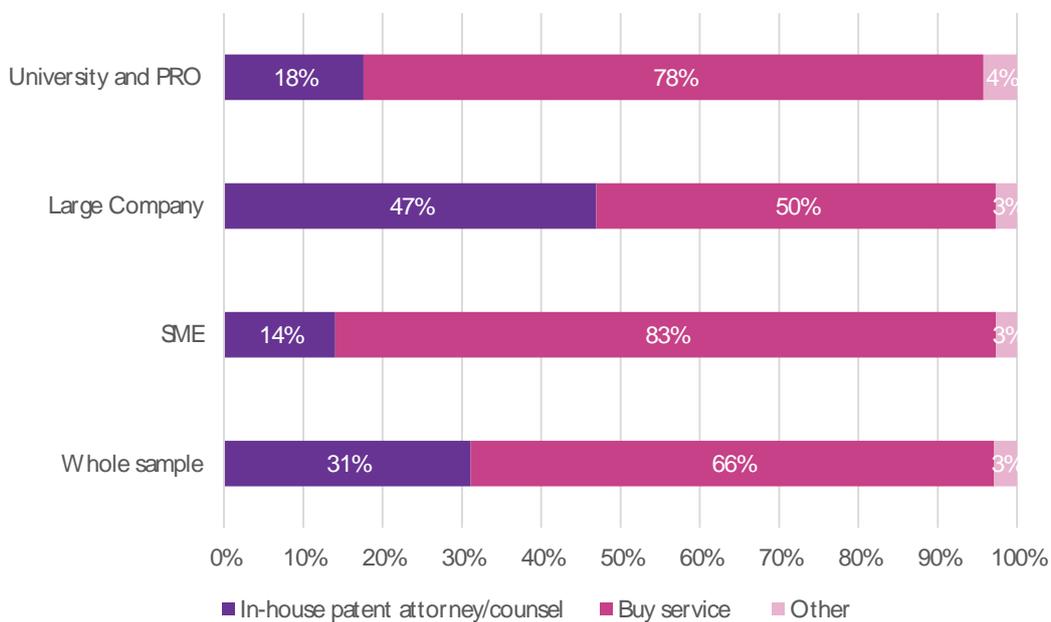
Table 4.2: Number of responses per type of organisation by country

Type of organisation	Responses from Europe/(percentage of total responses)	Responses from US/(percentage of total responses)	Responses from Japan/(percentage of total responses)
SME	140 (17%)	96 (12%)	28 (3%)
Large company	209 (25%)	85 (10%)	113 (14%)
University or PRO	101 (12%)	23 (3%)	18 (2%)
Other	-	1 (0%)	3 (0%)

Prefer not to answer	2 (0%)	-	1 (0%)
Total	452 (100%)	205 (100%)	163 (100%)

In addition to understanding the characteristics of respondents in terms of their geography and organisation type it is also relevant to understand the extent to which respondents have in-house specialist resources for managing their patent portfolio. As shown in the figure below, the vast majority of universities /PROs and SMEs do not have their own in-house resources and instead consult outside attorneys or counsel as required. In contrast, almost half of large companies have their own in-house resources.

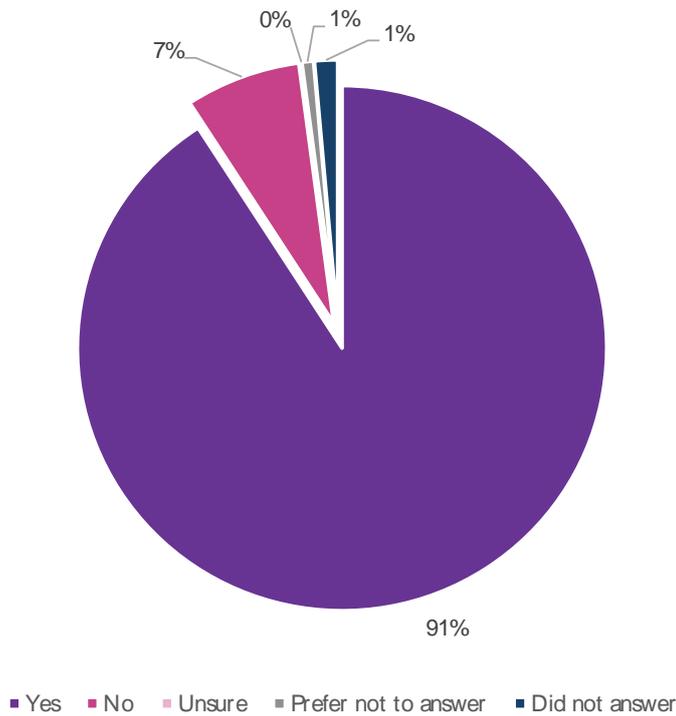
Figure 4.2: Do you have your own in-house patent attorney / counsel or do you consult external professionals as needed?



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Finally, we explored the extent to which universities / PROs have a technology transfer office. The responses to our survey indicate that the vast majority (91%) of such organisations have technology transfer offices and hence have an interest in commercialising the research of academics at the university.

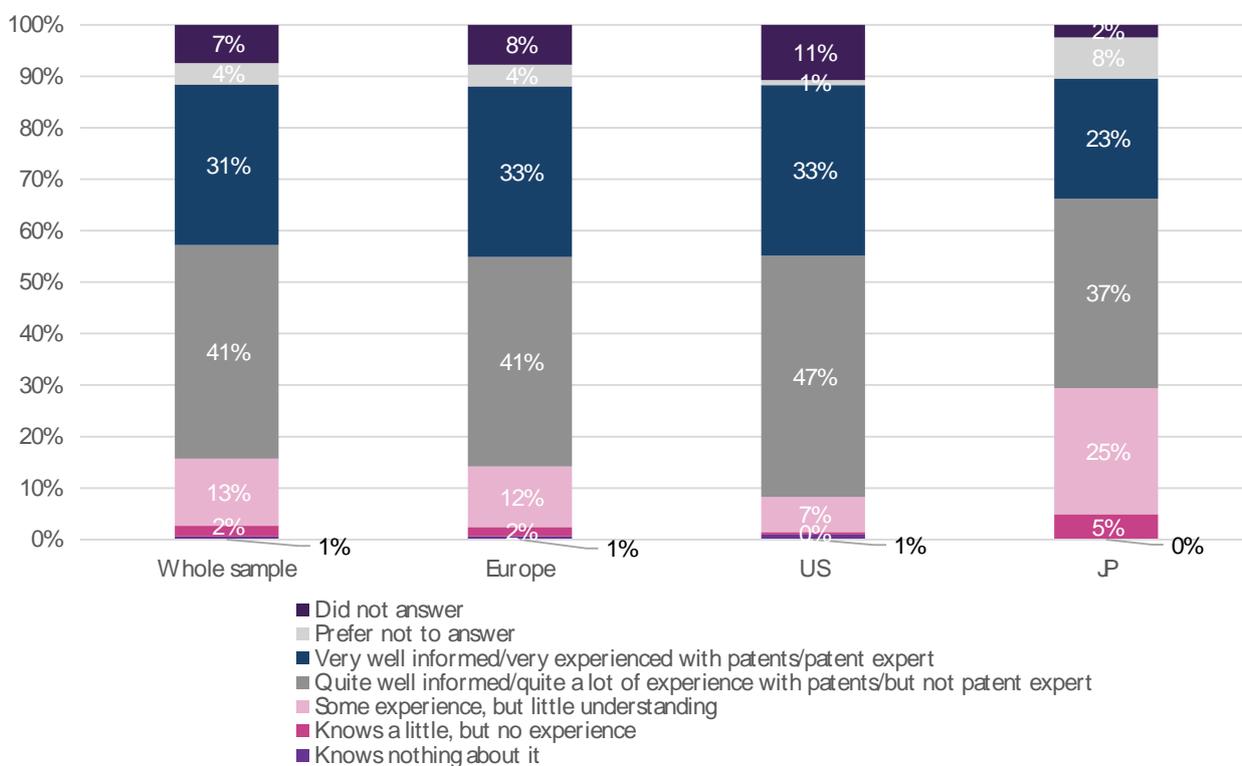
Figure 4.3: Does your university / PRO have a technology transfer office?



Note: This figure is based on 140 responses from Universities and Public Research Organisations; there were two Universities or PROs that were eligible to answer this question but provided no answer.

Another important consideration when assessing survey responses is whether individuals responding actually possessed sufficient information (or had sufficient knowledge) to provide informed responses. It is always challenging to provide evidence for this but it was sought to address this challenge by asking respondents to rate their own knowledge of the patent system. As shown in the figure below, more than 70% of respondents considered themselves to be either well-informed or very well-informed. However, a minority of respondents had more limited experience and knowledge of the system and hence those responses are possibly less reliable and may bias the overall results.

Figure 4.4: Knowledge of the patent system



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

4.4.1 Response consistency checks

If we are to draw meaningful conclusions from the survey responses, it is essential that respondents to the questionnaire answer consistently and not simply select random responses options for each of the questions. In addition to basic checks such as verifying whether respondents had provided the same response for a substantial proportion of questions, a set of ‘logic pairs’ was identified in conjunction with the EPO. These ‘logic pairs’ are questions for which a response to one question could be perfectly predicted from the response provided to a second question if the respondent had provided consistent answers. The results of our analysis of responses to these questions, described in Appendix 4, demonstrate that there is logical consistency within survey responses. Therefore, we consider that meaningful conclusions can be drawn from an analysis of those responses..

4.4.2 Potential sample selection bias

The degree to which grace periods are currently used as well as the perceptions concerning the potential introduction of a grace period in Europe are likely to differ significantly across different types of patent users. This raises the concern that survey results may suffer from sample selection bias, which could arise if the sample of users who answered the questionnaire is not a random sample of all the patent users approached. For example, one might expect that those users who tend to use the grace period more frequently are also more likely to answer the survey compared

those users who use the grace period seldom, less frequently or not at all. Our assessment of this issue, reported in Appendix 4, indicates that there is an overrepresentation of European users (relative to US and Japanese users) and of users who file the majority of their patent in the Chemistry technological cluster amongst survey respondents.

4.5 Structured interviews

Questionnaires are a useful way of collecting data from a relatively large sample of respondents. However, the drawback is that because of the relatively rigid format, the information retrieved in this way tends not to be very detailed or nuanced and can sometimes be difficult to interpret.

For this reason, we complemented the statistical and econometric analysis of questionnaire responses with a series of semi-structured interviews. These offer the flexibility to ask more detailed questions, tailor the wording to participants to clarify meaning and follow up issues that need to be explored more. In this way, interviews allowed us to gather rich, complex and diverse information and provide detailed insights not only into interviewees' point of view, but also help to understand the reasons behind these. In particular, the interviews were designed to enable us to secure a better understanding of the filing strategies that applicants have used in the absence of a grace period, attitudes towards grace periods and perceptions concerning the impact of the grace period on those decisions.

4.5.1 Sample selection

We sought to achieve a total of 30 interview responses from a range of users of the European patent system with characteristics as shown in the table below.

Table 4.3: Target sample characteristics of interviewees

	University	SME	Large companies
US	1	3	3
Japan	1	1	1
EU	3	8	9
Total	5	12	13

We selected potential interviewees from the sample of survey respondents. In particular, one of the survey questions asked if respondents would be willing to be contacted for the purpose of follow-up questions. Amongst those that answered 'yes' to that question, we used the following selection criteria in short-listing the respondents to ensure that they would be most well-placed to participate in an interview:

- Knowledge of patent system: respondents should be well informed or above in all types of organisation.
- Use of grace period: for US and Japan organisations, they must have experience of usage in at least one or more grace period from different countries. For EU, a mix of experience was chosen.
- Presence of in-house patent attorney: a mix of profile for SMEs and large companies.
- Presence of technology transfer officer: a mix of profile for universities.

- EU country: cover at least two different countries for the University group and at least five different countries for the SME and large companies groups.

We selected a sample of around 74 potential interviewees with all of them fitting the above criteria. This extended pool of respondents was used as the basis for our initial selection of interviewees and the remainder of the sample was employed to boost the number of participants as some organisations decided not to participate in an interview.

Each potential interviewee was sent an email invitation and, following their agreement to participate, was sent a list of interview questions. The full list of interview questions is presented in Appendix 6.

Interviewees had the option to respond either verbally or in written format. In practice, the majority of respondents chose to reply in writing. A total of 30 responses was achieved, as shown in the table below.

Table 4.4: Final sample characteristics of interviewees

	University	SME	Large companies
US	3	3	2
Japan	1	2	1
EU	2	7	9
Total	6	12	12

4.5.2 Interview responses

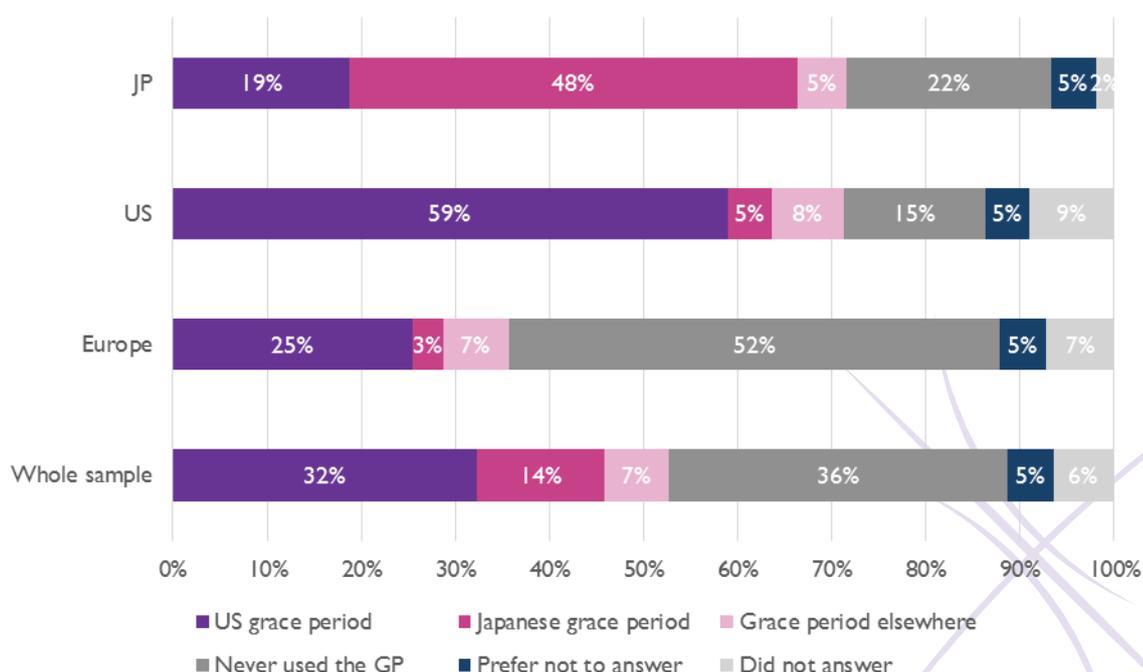
The purpose of the interviews was to provide additional, detailed, information on issues that were covered by our survey of users of the European patent system. Given the complementary nature of the survey and interviews, we present the lessons from these sources together in the remainder of this report. More precisely, we do not present a separate chapter on interview responses but instead discuss the issues covered by the survey in turn and add information gathered through our interview programme wherever appropriate.

5 Experience of Respondents with Grace Periods

The survey began with an explanation of what a grace period is in the context of the patent system. More specifically it was explained that an invention is not novel (new) and therefore not patentable if it was known to the public before the date of filing of the patent application, or before its date of priority. It was further indicated that, within a patent system, a grace period is a period of time before the date of filing of a patent application on an invention, during which it is possible for that invention to be publicly disclosed (for example, in a scientific publication, at a trade show, or by accident) without losing its novelty, so that the invention remains patentable.

Before analysing views on the potential introduction of a grace period in Europe, it is important to understand how respondents have used grace periods in the past. To explore these issues respondents were asked to indicate whether they had made use of a grace period in at least one country. Figure 5.1 shows that the majority of US and Japanese respondents have made use of a grace period in the past whereas only a minority of European respondents have done so. The Japanese grace period has been little-used by non-Japanese respondents whereas the US grace period has been used by approximately 25% of European respondents and 19% of Japanese respondents.

Figure 5.1: Q18. Past use of grace periods by country of origin



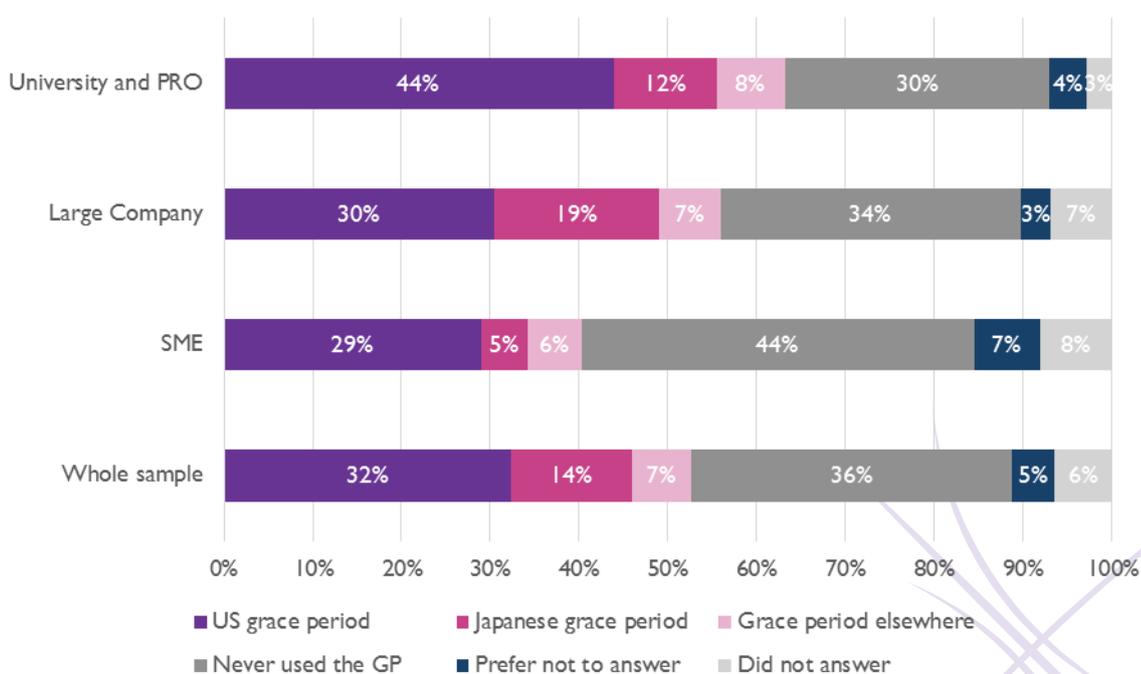
Note: This figure presents answers to: “Have you actually used the grace period for patents you have filed in the past?” The information presented in the above graph relies on 60 non-respondents and 760 respondents who provided an answer to at least one of the multiple available options, 417 of which were from Europe, 184 from the US and 159 from Japan. Respondents could choose more than

one answers for this question; where more than one answer was given both answers were accounted for and were presented in this diagram.

The following figure breaks down the results by type of organisation. It can be observed that 44% of the SMEs in the sample have not used the grace period while the corresponding figure for large companies and universities and public research organisations is considerably lower. In terms of comparing the usage of the US and Japanese grace periods, the US one has been used significantly more often across all respondent types. This certainly reflects the generous definition of the grace period under the first-to-invent system, as opposed to the grace period which existed in Japan until the 2011 revision of the Japan Patents Act, which was comparatively quite restrictive, in that it was confined to experimental tests, printed publications, electronic communications, academic presentations approved by the JPO and displays at government-hosted exhibitions. The use of the two different systems is most similar for large companies, of which 30% have used the grace period in the US while 19% have used it in Japan.

An important caveat of these results is the occurrence of double counting due to the fact that respondents had the opportunity to select more than one answers. In that case, respondents who have used both grace periods are accounted for twice (potentially thrice if they have also used it elsewhere). On the other hand, respondents who have not used the grace period before, stated that they preferred not to answer or did not answer fall into mutually exclusive categories and are thus under-represented compared to the other response categories. Comparability across different grace period regimes is still maintained however.

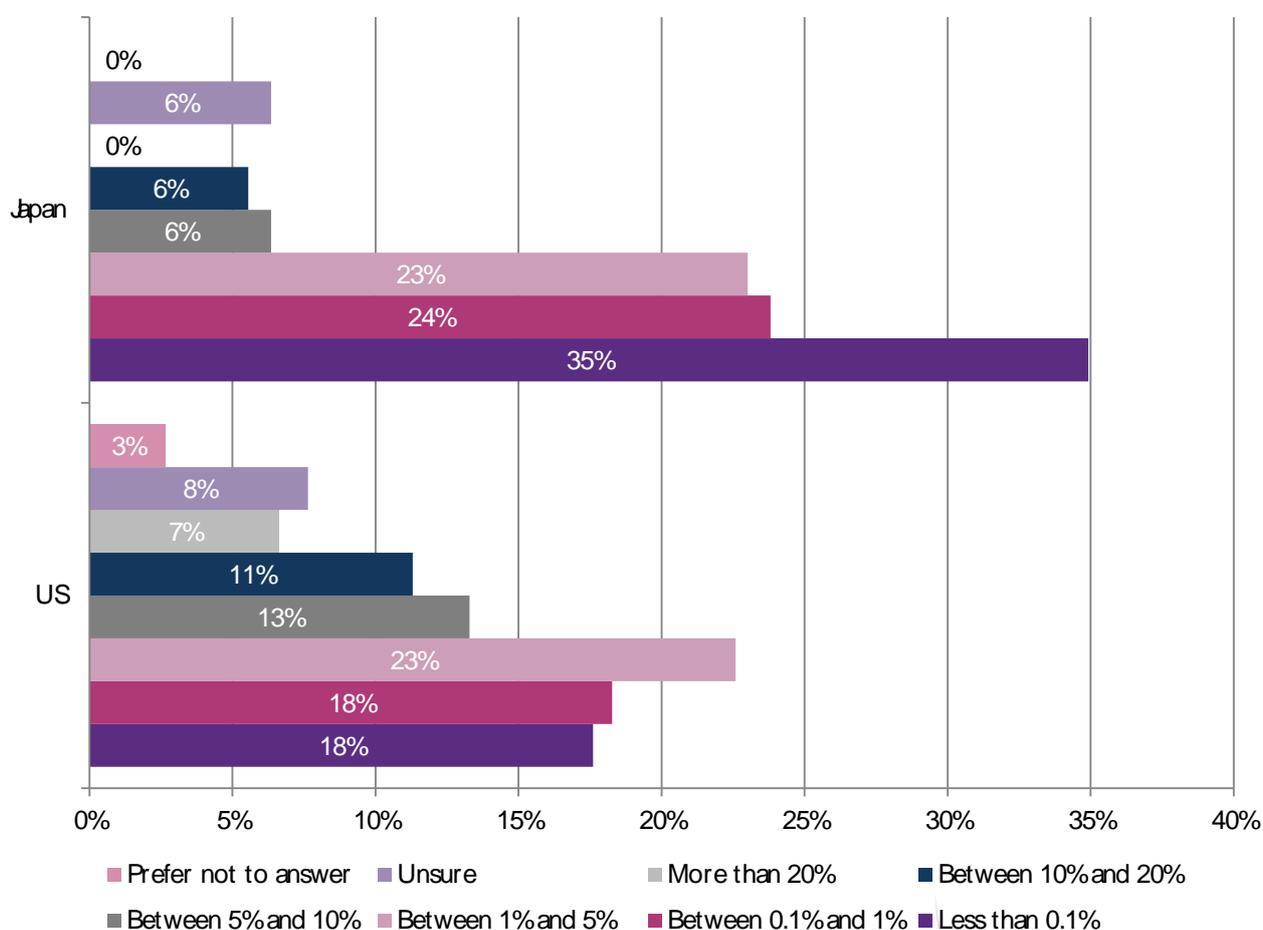
Figure 5.2: Q.18 Past use of grace periods by type of organisation



Note: This figure presents answers to: "Have you actually used the grace period for patents you have filed in the past?" The information presented in the above graph relies on 60 non-respondents and 760 respondents who provided an answer to at least one of the multiple available options, 241 of which are SMEs, 375 large companies 137 Universities or Public Research Organisations, 4 Other and 3 Prefer not to answer. Respondents could choose more than one answers for this question; where more than one answer was given both answers were accounted for and were presented in this diagram.

We then asked those respondents having previously used the grace period in at least one country to report the percentage filings to the USPTO and JPO in the last five years in which the grace period was invoked. Figure 5.3 shows that the average proportion of filings that made use of the grace period is greater for the US than for Japan. As noted above, this certainly reflects the generous definition of the grace period under the first-to-invent system, as opposed to the grace period which existed in Japan until the 2011 revision of the Japan Patents Act. No other disclosures were covered.

Figure 5.3: Q23/Q25. What percentage of the total number of patents filed in the last five years in the US or in Japan used the grace period?



Note: The information presented in the above graph relies on 301 responses for the US, 8 of which were "Prefer not to answer" and 126 responses for Japan.

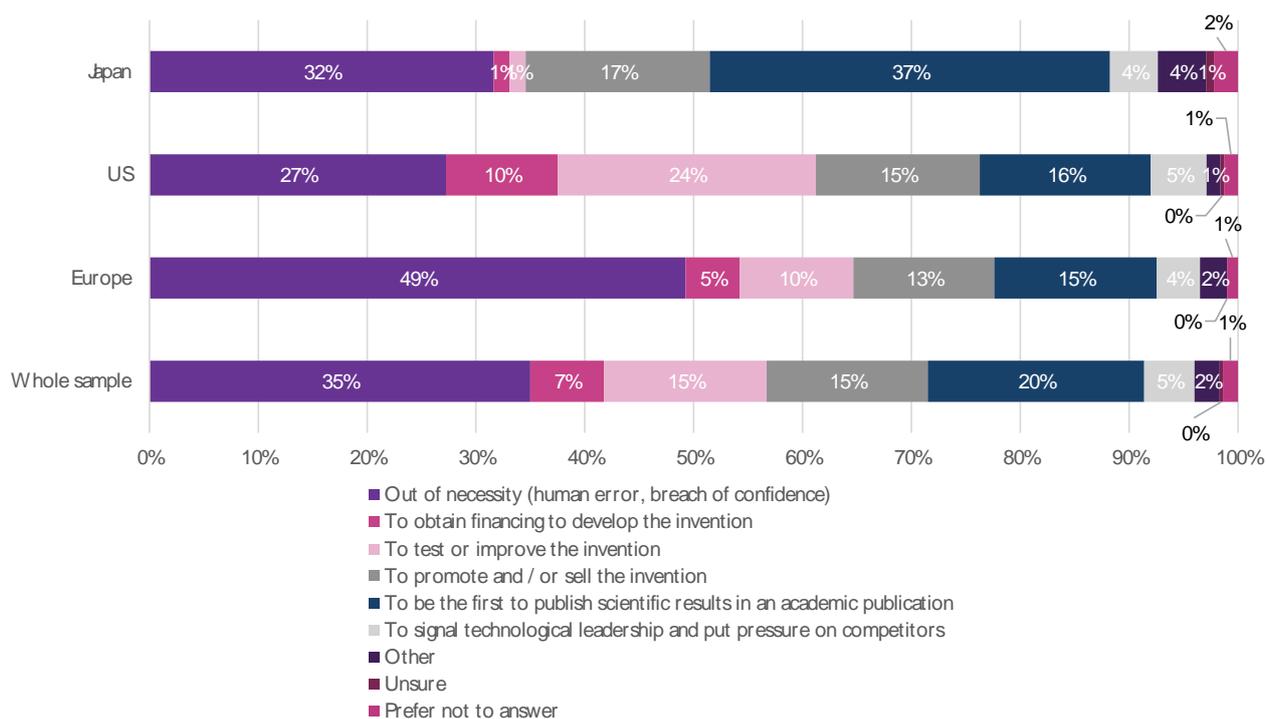
5.1 Respondents with prior experience of using grace periods

For those respondents that have made use of the grace period in the past, it is important to understand both their motivations for using the grace period and how their inventions were disclosed to the public before a patent application was filed. If a grace period were to be introduced in Europe, it might be expected that users of the patent system would have similar motivations for using the grace period and that the methods of disclosure might be similar. This

would, however, depend on the design of a harmonised grace period: patterns of deliberate disclosure may not be predictive of applicant behaviour which would occur should a safety-net grace period be adopted, for example.

As shown in the figure below, the most common reason for using the grace period is necessity, a finding which is particularly prevalent amongst European respondents.

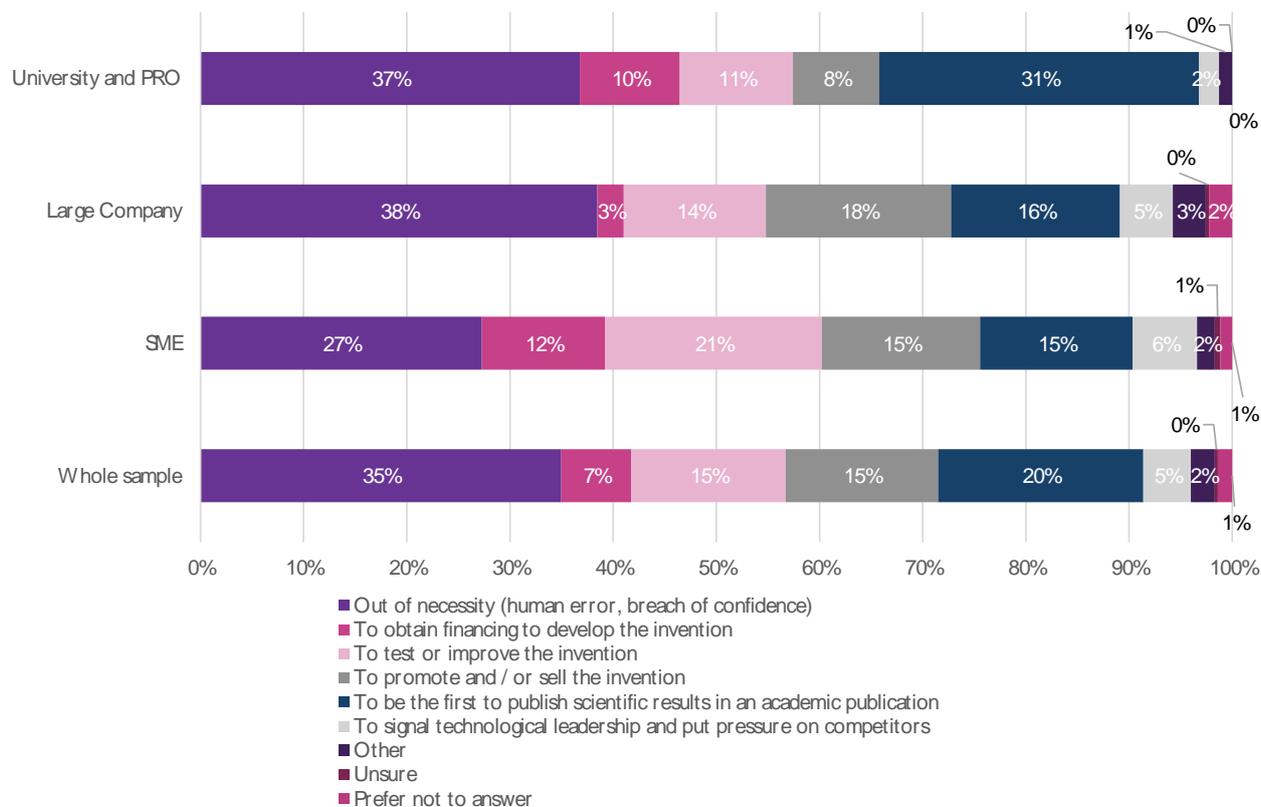
Figure 5.4: Q21. Motivation for using the grace period, by country of origin



Note: This figure presents answers to: "What were your motivations for using the grace period". The information presented in the above graph relies on 440 eligible responses, 173 of which were from Europe, 159 from the US and 108 from Japan; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

Somewhat more surprising is the finding that necessity is a key driver for large companies (see figure below). Large companies are more likely to have specialised patent services in-house and so it might reasonably be expected that the frequency of accidental disclosure would be lower amongst such companies than amongst smaller firms. While this may be the case, it must be noted that larger firms tend to file more patent applications than do smaller firms and so even a relatively low frequency of accidental disclosure can imply a relatively large number of instances that would result in the grace period being used. Moreover, in large companies the root of accidental disclosure it may be difficulties in coordination and communication between areas/departments due to size rather than a lack of knowledge of the patent system. Small firms tend to use the grace period either due to necessity or to test / improve the invention while the main motivations for universities are to either be the first to publish scientific results in an academic journal or out of necessity.

Figure 5.5: Q21. Motivation for using the grace period, by type of organisation

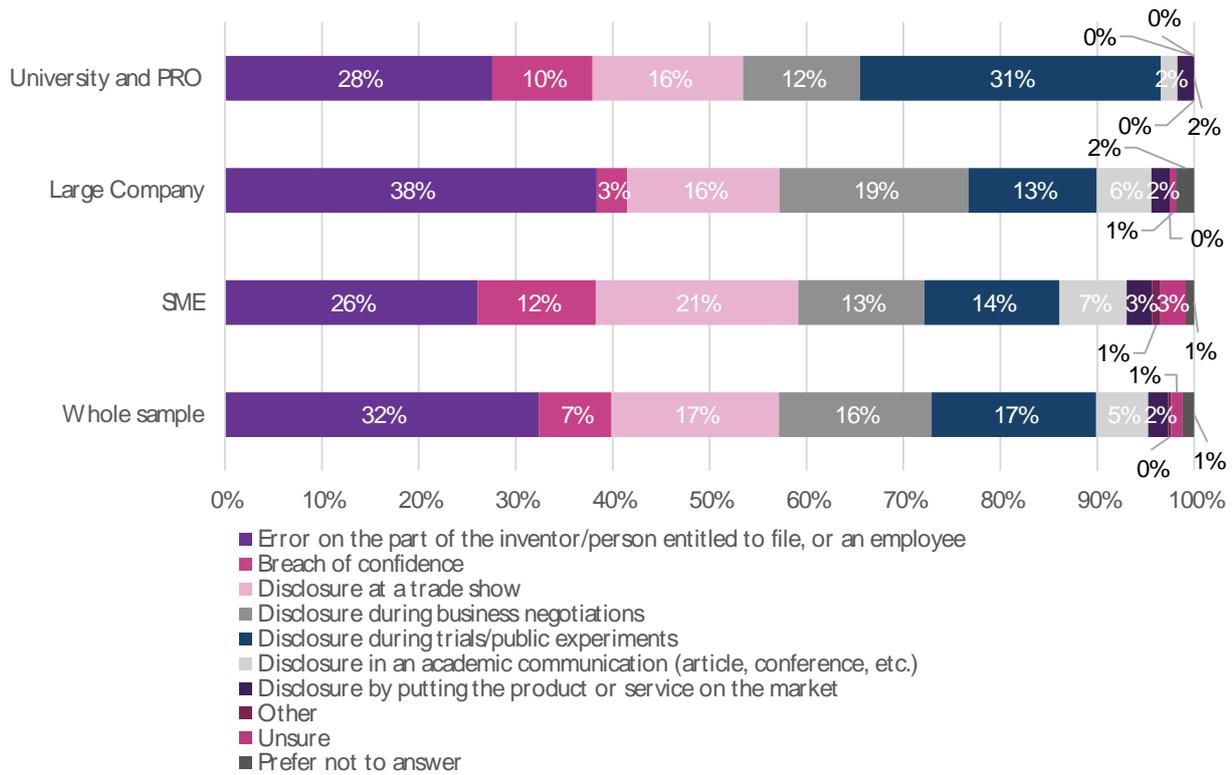


Note: This figure presents answers to: “What were your motivations for using the grace period”. The information presented in the above graph relies on 440 eligible responses, 118 of which were SMEs, 233 large companies, 84 Universities or Public Research Organisations, 3 Other and 2 Prefer not to answer; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

Figure 5.6 shows that where the grace period has been used, the most common means by which inventions were disclosed prior to filing was an error on the part of the inventor/person entitled to file, or on the part of an employee. This result is in line with the findings of our literature review that, amongst universities at least, premature public disclosure is handled through the provision of formal training/education of the individual(s) concerned.¹⁶

¹⁶ Science Business Innovation Board (2013), “A grace period for patents: Could it help European universities innovate?”.

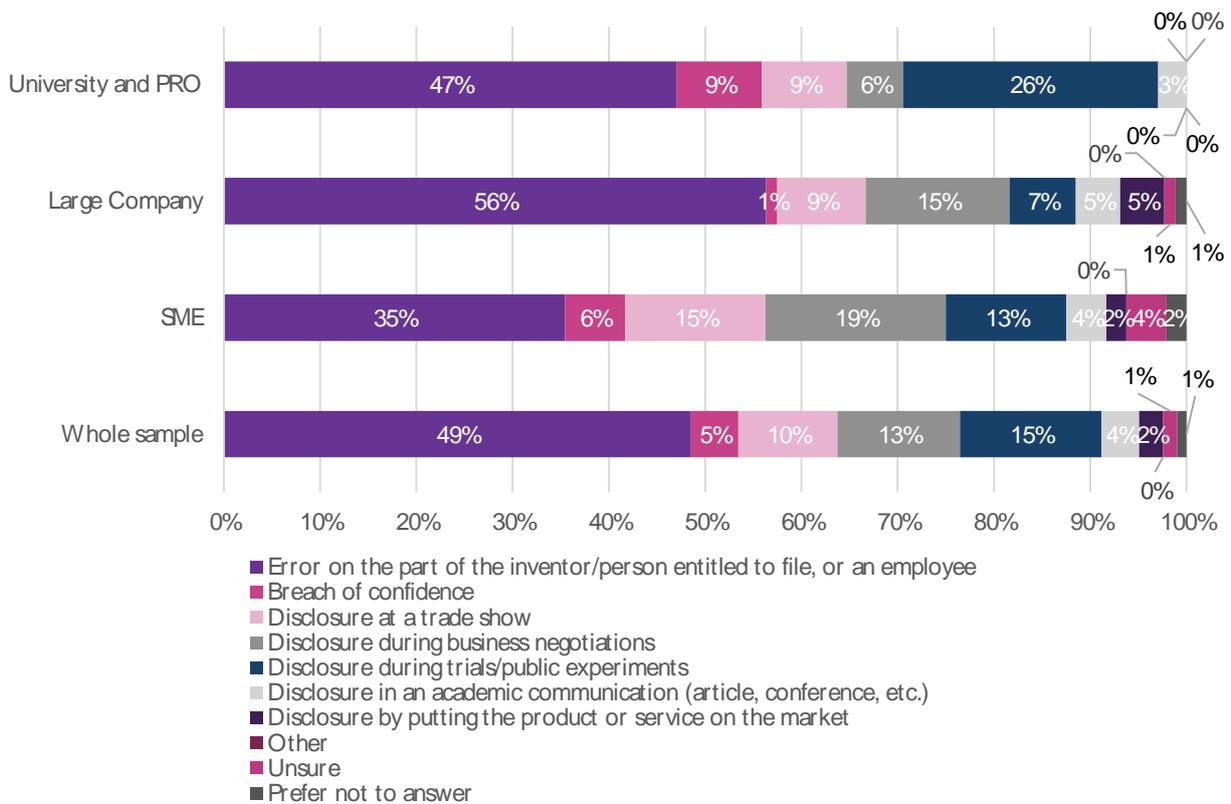
Figure 5.6: Q22. Means of pre-filing disclosure, by type of organisation



Note: This figure presents answers to: “How was your invention disclosed to the public before you filed your patent applications”. The information presented in the above graph relies on 440 eligible responses, 118 of which were SMEs, 233 large companies, 84 Universities or Public Research Organisations, 3 Other and 2 Prefer not to answer; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

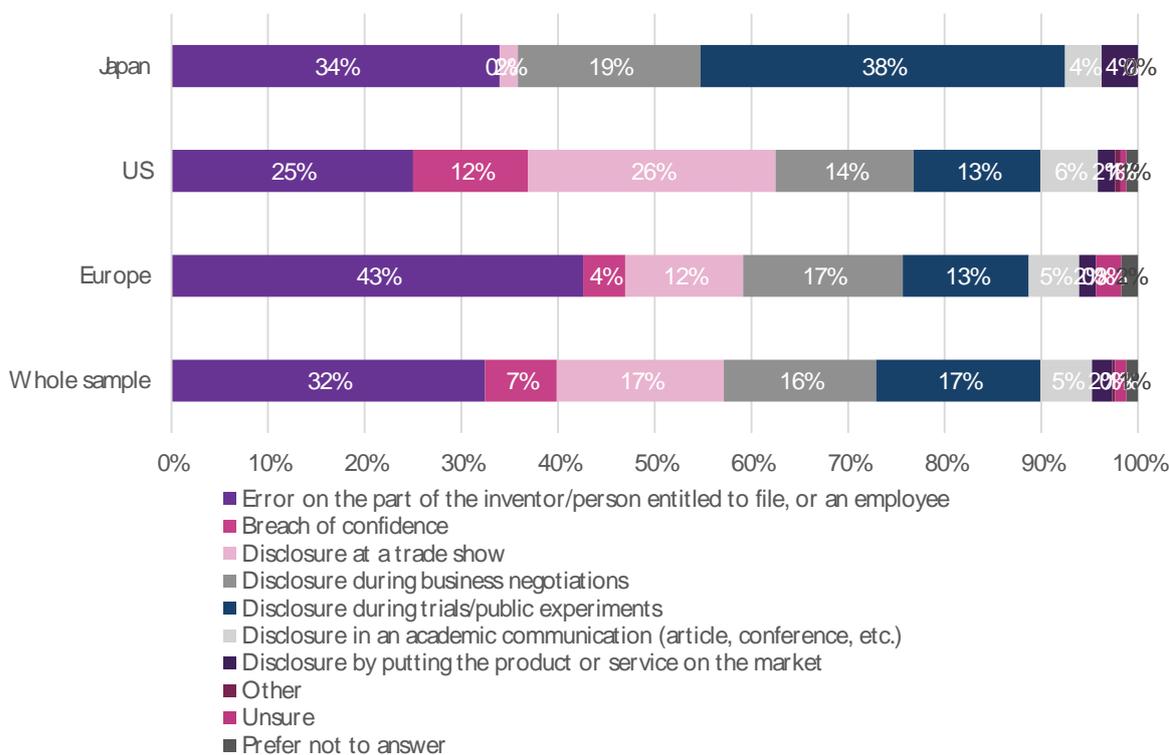
In the figure below we confine the sample of respondents to those from Europe and present a breakdown by type of organisation for the same question. It is clear that error is an even more significant cause of pre-filing disclosure for European organisations than for respondents as a whole. Indeed, more than half of large European companies that were eligible to respond to this question indicated that error had been a reason for disclosure while close to half of European universities / PROs reported the same. Given the absence of a grace period in Europe at present, and taking into account the fact that most companies operate heavily in local markets, the prevalence of errors as a cause of disclosure is to be expected: the rationale for making deliberate disclosures is weaker where such an action would result in it being impossible to file for patent protection in local markets.

Figure 5.7: Q22. Means of pre-filing disclosure, by type of organisation for European respondents



Note: This figure presents answers to: “How was your invention disclosed to the public before you filed your patent applications”. The information presented in the above graph relies on 173 eligible responses, 43 of which are SMEs, 83 large companies, 46 Universities or Public Research Organisations and 1 Prefer not to answer; 279 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

There are some differences between respondents from different countries, as shown in Figure 5.8. Pre-filing disclosure by European respondents was significantly more often the result of an error on the part of the inventor/person entitled to file than of any other reason. For respondents from the US, disclosure during a trade show was an equally common means of disclosure as an error on the part of the inventor/person entitled to file, while disclosure during trials or business negotiations were also important. The primary means of disclosure amongst Japanese respondents were during trials / public experiments and due to an error.

Figure 5.8: Q22. Means of pre-filing disclosure, by country of origin

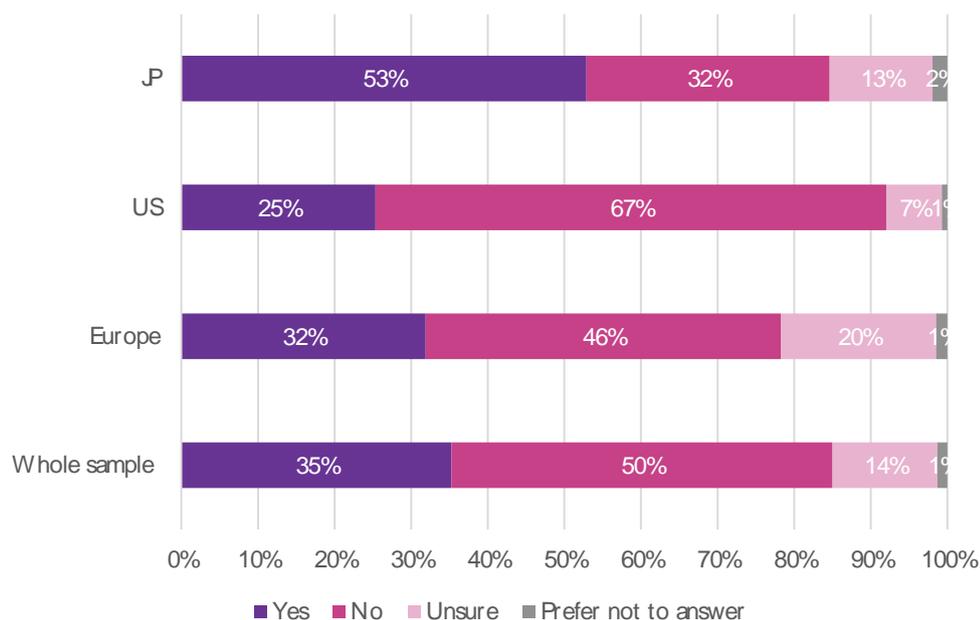
This figure presents answers to: "How was your invention disclosed to the public before you filed your patent applications". The information presented in the above graph relies on 440 eligible responses, 173 of which were from Europe, 159 from the US and 108 from Japan; 380 respondents were not eligible to answer this question as they had not used the grace period in the past. Multiple responses were possible.

If a grace period were to be introduced in Europe, it is possible that the administrative burden on both users of the patent system and patent offices might increase. To explore this issue we asked respondents having used the grace period to specify whether applications that invoked the grace period involved extra procedural steps with the patent office concerned. As shown in the figure below, the majority of respondents reported that there were no extra procedural steps, although a majority of Japanese respondents reported experience of extra procedural steps. This is likely to be a function of the definition of the grace period in different jurisdictions. Prior to the passing of the America Invents Act ("AIA"), the rules on entitlement, novelty and the definition of the grace period were such that communicating with the applicant to ascertain whether a prior disclosure was graced or not was not necessary. On the other hand, given that Japanese respondents typically have experience only of invoking the grace period in Japan, this finding may reflect the JPO's procedural approach to applications invoking the grace period, which will be influenced by two elements:

- Japanese law requires the filing of a mandatory declaration; and
- the definition of the grace period in Japan is such that communication with the applicant may become necessary if it is unclear whether the disclosure within the grace period was derived from the applicant's invention, in which case it would be graced, or whether it is an independent disclosure emanating from a third party's invention, in which case it is novelty-destroying.

There was no significant difference in responses by type of organisation: a majority in each type reported that there were no extra procedural steps.

Figure 5.9: Q20. Whilst invoking the grace period, were there extra procedural steps?



Note: This figure presents answers to: "In your experience of obtaining patents whilst invoking the grace period, did this lead to extra procedural steps with the patent office concerned?". The information presented in the above graph relies on 440 eligible responses, 173 of which were from Europe, 159 from the US and 108 from Japan; 380 respondents were not eligible to answer this question as they had not used the grace period in the past.

5.2 Respondents without prior experience of using grace periods

For those that have not actually applied for patent protection using the grace period in the past, it is important to understand whether the reason for their lack of experience is because:

- all disclosures were deliberate and the respondent did not intend to file for patent protection following disclosure; or
- the respondent felt the need to file a patent application following disclosure but did not do so.

As shown in the figure below, the majority of respondents have, at least once, felt the need to file a patent application after a research and/or product development result was disclosed. This finding is common to respondents from all countries and for all types of organisation. Moreover, the views of European SMEs, large companies and universities are very similar to the overall breakdown by type of organisation, as evidenced by comparing Figure 5.10 and Table 5.1.

Figure 5.10: Q27. Whether the respondent has ever felt the need to file a patent application after disclosure

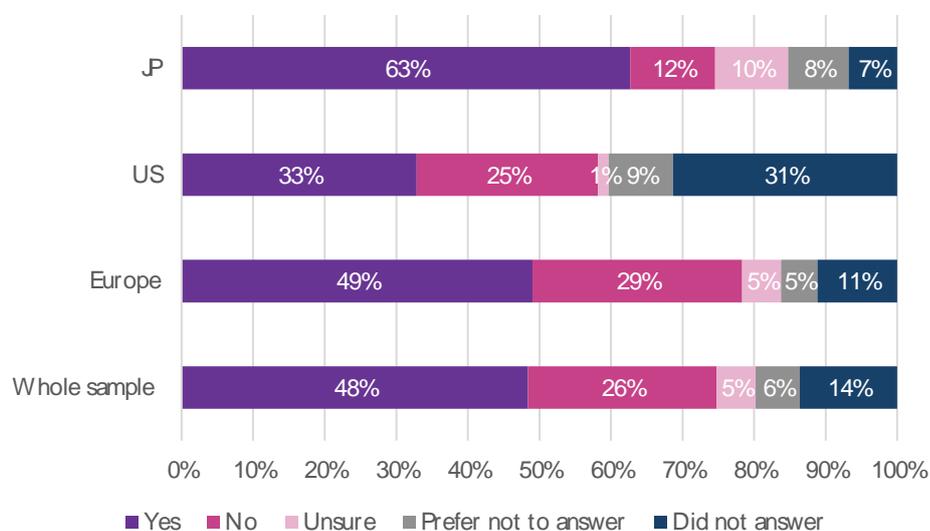
Note: This figure presents answers to: "Have you ever felt the need to file a patent application after you disclosed a research and/or product development result?". The information presented in the above graph relies on 440 eligible responses, 43 of which are SMEs, 83 large companies, 46 Universities or Public Research Organisations and 1 Prefer not to answer; 380 respondents were not eligible to answer this question because they indicated they had used the grace period in the past or failed to answer the relevant question.

Table 5.1: Q27. Whether respondent has ever felt the need to file a patent application after disclosure (European respondents only)

	Yes	No	Unsure	Prefer not to answer	Total
Prefer not to answer	0%	0%	100%	0%	100%
Other	0%	0%	0%	0%	0%
University and PRO	65%	16%	11%	7%	100%
Large Company	52%	38%	2%	7%	100%
SME	54%	36%	7%	3%	100%
Whole sample	55%	33%	6%	6%	100%

Note: This table presents the answers of European respondents to Q17. There were 279 eligible responses out of a total of 820 available responses.

Figure 5.11: Q27. Whether the respondent has ever felt the need to file a patent application after disclosure, by country of origin



Note: This figure presents answers to: "Have you ever felt the need to file a patent application after you disclosed a research and/or product development result?". The information presented in the above graph relies on 440 eligible responses, 173 of which were from Europe, 159 from the US and 108 from Japan; 380 respondents were not eligible to answer this question because they indicated they had used the grace period in the past or failed to answer the relevant question.

The two figures above illustrate that the need to file a patent application after disclosure appears to have been felt more regularly by Japanese users, and by universities and PROs, particularly so the ones based in Europe.

A limitation of the findings presented above is that they do not allow us to test the extent to which other users' characteristics might be playing a role in whether the respondent has ever felt the need to file a patent application after disclosure. For example the fact that, as indicated in Figure 5.11, the need to file a patent application after disclosure appears to have been felt more regularly by Japanese users might be due to other idiosyncratic features that tend to occur across this group of users in our sample (e.g. organisation type, the technological clusters in which patent applications are typically filed, etc.). Therefore, in order to be able to draw more meaningful conclusions, in the remainder of the report we have conducted — where appropriate — econometric analysis that attempts to explain a variable of interest while controlling for a number of different factors. For example, we have complemented the descriptive analysis presented in the figures above by estimating a probit model.¹⁷ The dependent variable used was sourced from respondents' answers to whether they had ever felt the need to file a patent application after disclosure. Based on the observed responses, a value of one was allocated to those that had felt such a need while a value of zero was allocated to those that had not felt such a need (respondents that answered "Unsure" and "Prefer not to answer" or did not answer the question are excluded from the analysis).

¹⁷ A probit model is one type of 'discrete choice model', in which the dependent variable is a dummy, taking either the value of zero or of one. The probit model assumes a normal distribution.

The dependent variable was then regressed on a number of explanatory variables and the output of the estimation is presented in Table 5.2. The explanatory variables included three standard sets of dummy variables which will be used in all of the following econometric models:

- Type of organisation. There were three dummy variables created, one for large companies, one for SMEs and individuals, and one for universities and public research organisations.
- Geographical origin of the applicant. These were created to reflect the three potential regions, Japan, Europe and the US.
- Previous GP experience. This dummy variable was created to identify respondents who had used the grace period in the past. It took the value one for respondents that had used the grace period in one or more of the US, Japan or elsewhere.
- Technological cluster where the respondent has filed the majority of their patent applications (electrical engineering, instruments, chemistry, mechanical engineering or other fields). In cases where more than one cluster were tied for the majority position, the selection of the majority cluster was then randomised.

The “marginal probability coefficient” column in the table below shows the ‘marginal effect’ of the explanatory variable on the likelihood that the respondent is in favour of the grace period in principle. For instance, a type of organisation dummy variable with a positive, significant coefficient implies that this type of organisation, when compared to the base case type of organisation (i.e. the one out of three dummy variables that was excluded – large company in the table below), is more likely to be in favour of the grace period in principle. The opposite would apply for a negative significant coefficient. The greater the magnitude of the coefficient (either positive or negative), the greater the impact on the likelihood associated with the dependent variable, as long as it is statistically significant. For the purpose of this study we consider variables to be significant if they are significant at 10% level and all significant variables are presented in bold letters in the results tables.

We see that the results of the probit regression reported below confirm that the need of filing patent applications after disclosure is higher among Japanese users and among Universities and PROs. In particular, universities and PROs are, all else being equal, 24.1% more likely to have felt the need to file for patent protection after disclosure than are large companies. Similarly, Japanese users are 21.6% more likely to have felt the need to file following disclosure than are European users, perhaps reflecting the greater experience of Japanese users with grace periods.

Table 5.2: Likelihood of having felt the need to file a patent after disclosure

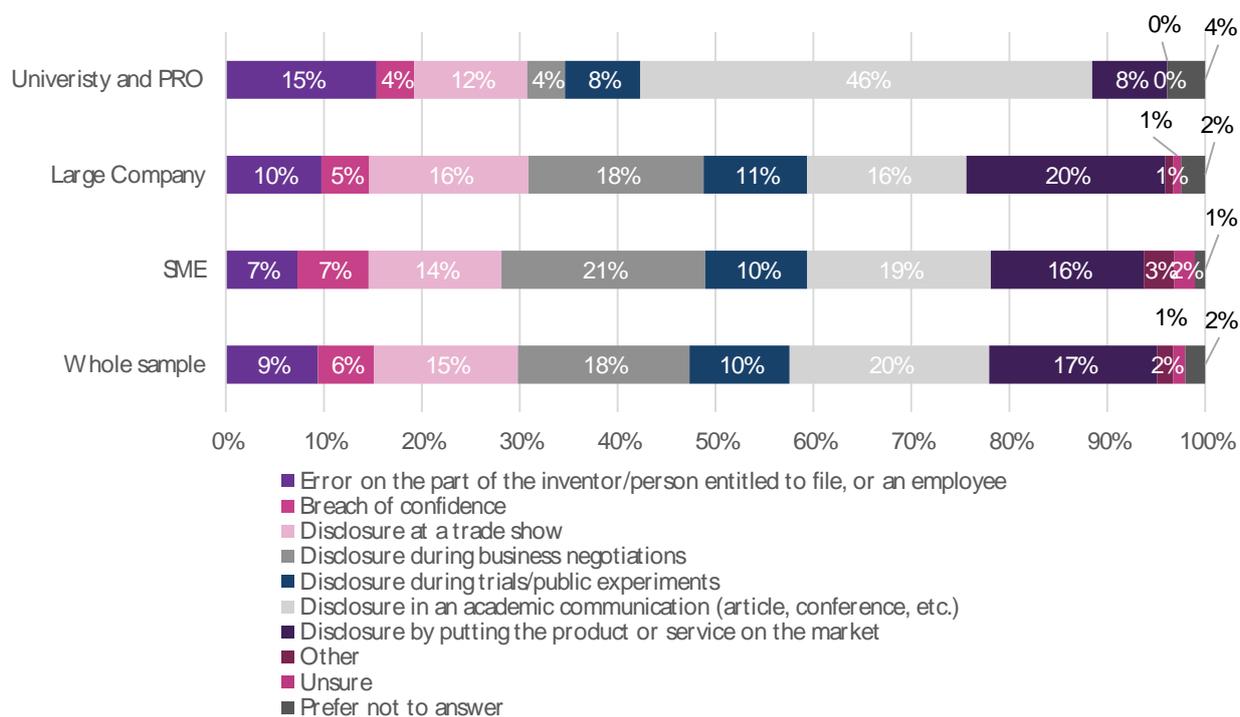
Dependent Variable: Felt the need of filing patent after disclosure		
Variable	Marginal probability coefficient	Std. Error
SME	-.0004	.0610
University & PRO	.2411	.0666***
US user	-0.0880	.0945
JP user	.2157	.0676***
Electrical engineering	.0292	.1060
Instruments	-0.0356	.1019
Chemistry	-0.0538	.0961
Mechanical engineering	.0004	.0940
Log likelihood	-188.6444	
LR statistic	20.6294	
Prob(LR statistic)	0.0082	
Total obs	304	
Obs with Dep=0	110	
Obs with Dep=1	194	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

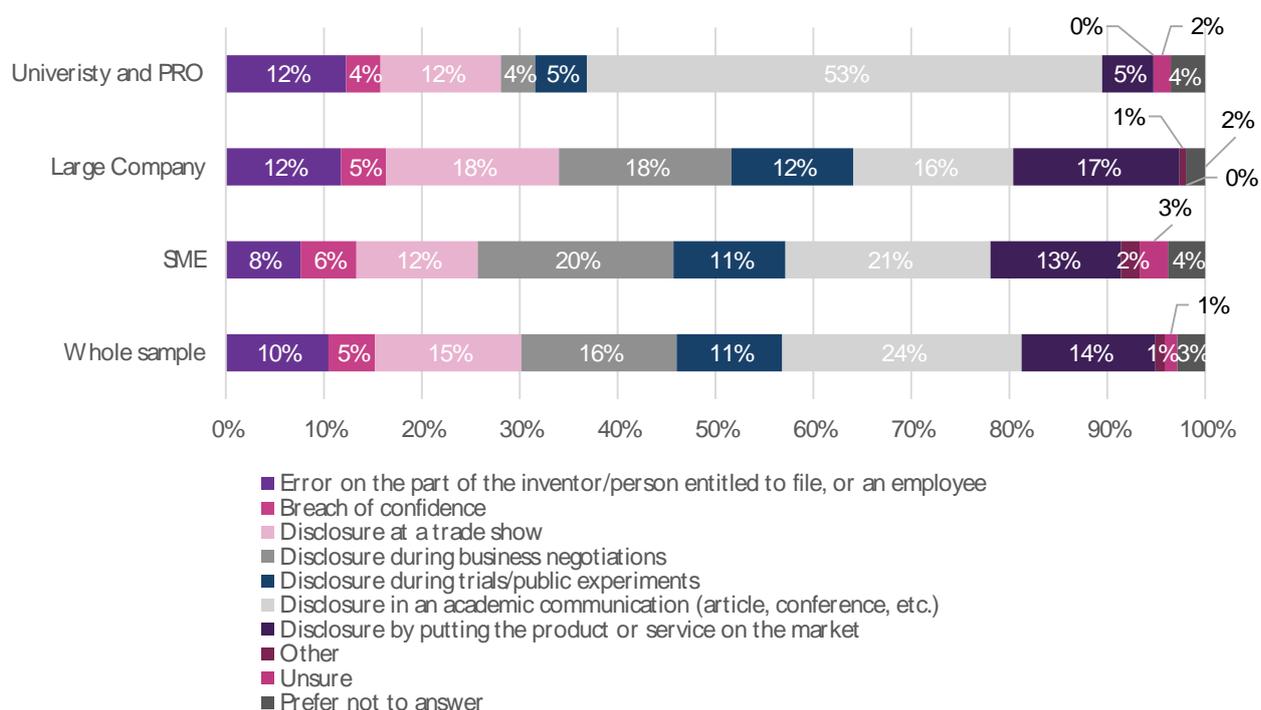
As shown in the figure below, many different types of disclosures have occurred amongst those that have not made use of the grace period in the past. However, the results suggest that the majority of disclosures for universities and PROs occurred through the means of an academic publication. Overall, there is similarity between SMEs and large companies in terms of the methods of disclosure, with disclosure during business negotiations, disclosure in academic communications and disclosure by putting the product/service in the market being among the most important and breach of confidence being the least important. When considering European respondents only (Figure 5.13) the situation is very similar, with one exception; disclosure at a trade show becomes the most important means of pre-filing disclosure for large companies

The most common means of disclosure amongst respondents from European countries was through an error. Given that there is no grace period in Europe at present, and given that European respondents are likely to be interested in protecting their inventions in Europe, such a finding is not surprising. Amongst US respondents, disclosure at a trade show and errors were the most common means of disclosure while errors and disclosure during trials / public experiments were the most common disclosure means amongst Japanese respondents.

Figure 5.12: Q28. How did this pre-filing disclosure occur?



Note: This figure presents answers to: “How did this pre-filing disclosure occur?”. The information presented in the above graph relies on information provided by 416 responses from 273 eligible respondents, 101 of which were SMEs, 129 large companies, and 43 Universities or Public Research Organisations. Multiple responses were possible.

Figure 5.13: Q28. How did this pre-filing disclosure occur? European respondents only

Note: This figure presents answers to: "How did this pre-filing disclosure occur?". The information presented in the above graph relies on information provided by 315 responses from 189 eligible respondents, 64 of which were SMEs 85 large companies and 40 Universities or Public Research Organisations. Multiple responses were possible.

5.3 Interview feedback

As noted above, academics can face pressure to publish their research findings as soon as possible and this can lead to pre-filing disclosures that destroy the novelty of an invention which is the product of such research and hence prevent a patent application from being filed.

While some instances of pre-filing disclosure by academics are deliberate, others are accidental. One interviewee mentioned a recent example concerning the case of a pharmaceutical invention for which the draft patent application had already been completed: all that remained was to file the application. An academic journal was also prepared to publish the scientist's findings and all that remained was for the scientist to give his approval that the paper could be published. Following a lot of long days in the office, the scientist gave approval for the journal to publish the article before the patent application had been filed. This was an accident that resulted from tiredness on the scientist's part. The publication meant that the patent application could no longer be filed and hence the university tried to identify small bits of the application that had not been disclosed, and then filed a different patent application for those parts.

More generally, interviewees reported that pre-filing disclosure usually happens due to a lack of knowledge or awareness of researchers on the implications of such a disclosure on patent applications. In cases of pre-filing disclosure, interviewees informed us that universities typically respond by choosing not to file for patent protection anywhere in the world, although there are some exceptions to this rule. In particular, universities will sometimes choose to seek protection in countries that offer grace periods and/or may choose to seek protection for certain elements of an

invention that have not been disclosed (especially in cases where the invention is perceived to be of high value).

SMEs and large companies do not face the same pressure to publish as academics but there are nonetheless instances in which inventions are disclosed prior to filing, either intentionally or unintentionally, thereby destroying novelty in Europe.

SMEs from the US and Japan reported in interviews that they are generally not involved in the European patent system and so the absence of a grace period in Europe has had little impact on their patent filing strategies or the decision of when to disclose information on the invention. In the event that the respondents are interested in filing a patent in Europe, they change their patent filing strategies and timing of information disclosure.

The absence of a grace period in Europe has a greater impact on the disclosure practices of European SMEs. More specifically, European SMEs tend to delay product releases until the patent application for the invention has been filed. The absence of a grace period in Europe has affected the patent filing strategies employed by respondents in the past.

Interviewees from large European companies, especially those that have filed in many jurisdictions around the world, informed us that the absence of a grace period in Europe has influenced their patent filing strategies. In particular, interviewees informed us that they typically delay any disclosure of their products / inventions until after the patent application is filed.

6 Respondents' Preferences

6.1 The grace period in principle

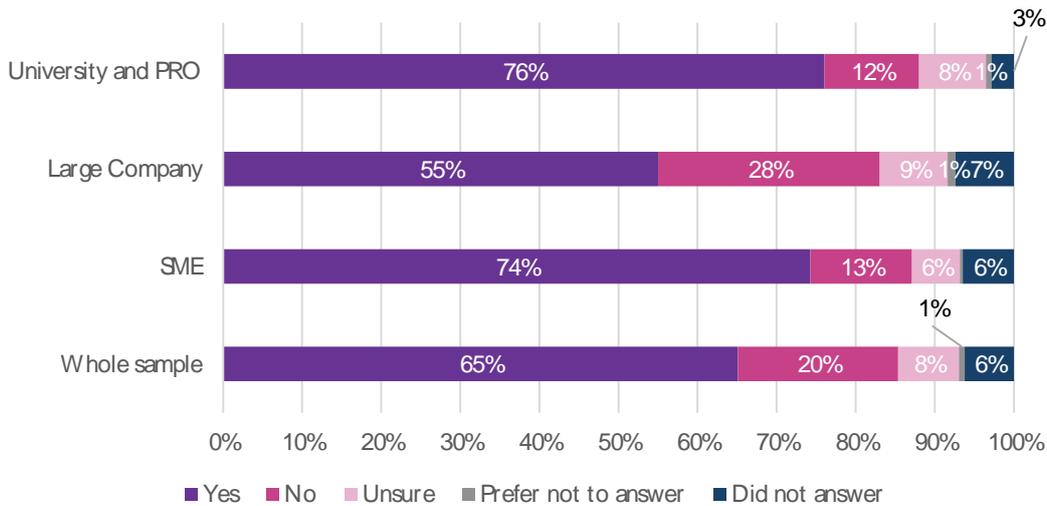
Before respondents were asked about their attitudes towards specific features of the grace period they were first requested to indicate whether or not they are in favour of a grace period in principle.

The majority of universities that participated in interviews informed us that they would welcome the introduction of a grace period in Europe. The key benefit perceived by university interviewees was the ability to safeguard against accidental pre-filing disclosure. This would ensure that universities would be able to file for patent protection in cases where an invention has been disclosed and would help to overcome some of the tension experienced by academics with respect to the pressure to publish information before filing. Some respondents suggested that a grace period would also enable them to explore inventions in greater detail prior to filing and to use their limited patenting budgets more effectively by filing only for those inventions that have the greatest market potential. The extent to which universities would undertake active disclosure may, however, depend on the precise characteristics of a European grace period. In particular, a 'safety-net' design would be expected to limit the extent to which users of the European patent system engage in active pre-filing disclosure.

Many interviewees from SMEs and large companies were also broadly supportive of a European grace period, for similar reasons to those specified by universities. However, some interviewees from large companies stated that they would not welcome the introduction of a grace period because of concerns that it would complicate the patent system and would lead to an increase in legal uncertainty associated with disclosures made during a grace period. More specifically, one respondent stated that the introduction of a grace period in Europe would make it more difficult to determine what comprises the prior art and would delay the point in time that a technology can be considered part of the public domain. Other interviewees stated that the grace period would make it more difficult to assess the likely valid scope of patent rights of third parties and would therefore make it more difficult to complete a freedom to operate assessment for a new innovation.

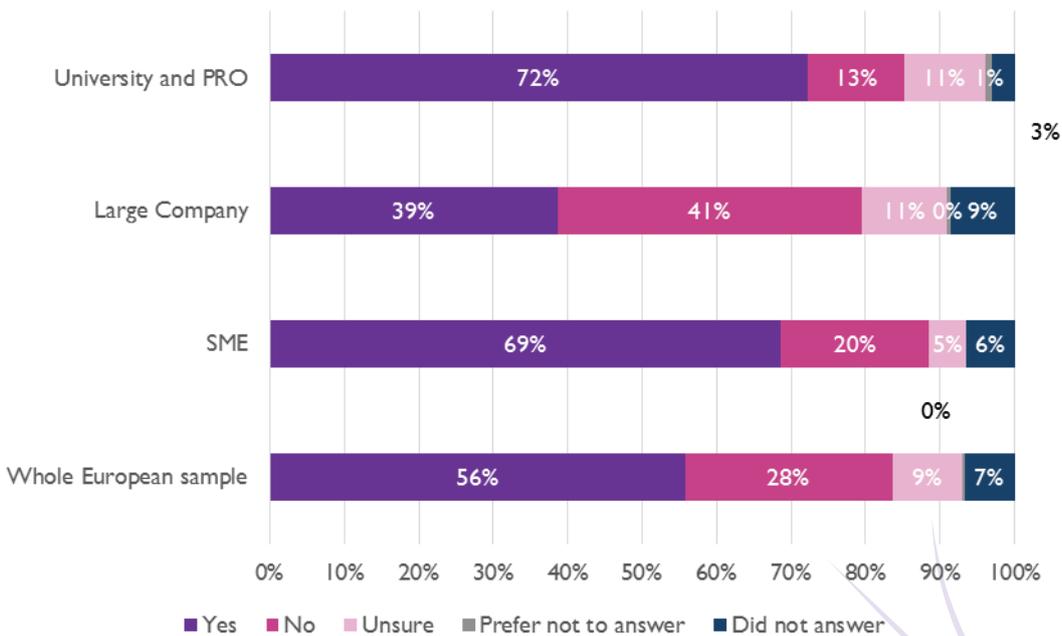
Responses to the survey were consistent with the information gathered through our interview programme. As shown in Figure 6.1, whilst the majority of users (universities, SMEs, and large companies) are in favour of a grace period, the share of patent users in favour of the grace period is materially higher among universities and SMEs than among large companies. These results are also consistent with the responses of European respondents as illustrated in Figure 6.2. Moreover, the percentage of those in favour of a grace period across all types of organisations are lower for European respondents compared to the whole sample averages.

Figure 6.1: Q11. In principle, are you in favour of a grace period? Presented by type of organisation



Note: The figure presents answers to: "In principle, are you in favour of a grace period?". Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 6.2: Q11. In principle, are you in favour of a grace period? Presented by type of organisation for European respondents only



Note: The figure presents answers to: "In principle, are you in favour of a grace period?". The information presented in the above graph relies on 452 responses, 140 of which are SMEs, 209 large companies, 101 Universities or Public Research Organisations and 2 Prefer not to answer.

Figure 6.3: Q11. In principle, are you in favour of a grace period? Presented by country of origin



Note: The figure presents answers to: "In principle, are you in favour of a grace period?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Among all respondents from the US, approximately 78% are in favour of a grace period while the corresponding statistic for Japanese respondents is 75%. European respondents, as observed above, are somewhat less enthusiastic with just 56% being in favour of a grace period in principle.

We consider that there are two factors that are likely to explain the above findings. First, the responses are likely to reflect the past experience of the respondent: grace periods have been a feature of the US and Japanese patent systems for many years and given the tendency for individuals to prefer the status quo, and for respondents to prefer the system they are the most familiar with, i.e. their own, it is not surprising that the majority of such respondents are in favour of a grace period being introduced in Europe. By contrast, grace periods are not a feature of the European patent system, although some European countries had grace periods prior to joining the European Patent Organisation (e.g. Germany). Second, European companies may have benefitted from the absence of a grace period in Europe as it has allowed for the free exploitation of technology which was patented abroad due to the benefit of a grace period, and thus precluded from patent protection under European laws. Therefore, the grace period may pose additional costs on European countries (relative to the counterfactual of no grace period) as it would become necessary for European companies either to pay licence fees to use certain technologies or to find alternative solutions.

A limitation of the findings illustrated in Figure 6.1 is that they do not allow us to test the extent to which other users' characteristics might be playing a role in shaping preferences for the grace period. We therefore complemented the descriptive analysis presented in Figure 6.1 by estimating a probit model in which the dependent variable was sourced from respondents' answers to whether they were, in principle, in favour of the grace period.

The results show that both SMEs/individuals and Universities/PROs were more strongly in favour of a grace period in principle than were large firms while US and Japanese respondents were more in favour of a grace period in principle than were European respondents. We also note that previous grace period experience is positively associated with preference for a grace period in principle while the chemistry and mechanical engineering sectors are less in favour of a grace period in principle than are respondents from other fields.

Table 6.1: Econometric output for being in favour of the Grace Period in principle

Dependent Variable: In favour of GP in principle		
Variable	Marginal probability coefficients	Std. Error
SME and individuals	.1773	.0314***
University and PROs	.1998	.0283***
US user	.1739	.0338***
JP user	.1515	.0320***
Electrical engineering	-0.0319	.0826
Instruments	-0.0773	.0818
Chemistry	-0.1725	.0737**
Mechanical engineering	-0.1388	.0814*
Previous GP experience	.1349	.0377***
Log likelihood	-306.2423	
LR statistic	105.1084	
Prob(LR statistic)	0.0000	
Total obs	648	
Obs with Dep=0	157	
Obs with Dep=1	491	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. When re-running the model replacing the university dummy with a large company dummy the coefficient was significant. However, the coefficient for SMEs with respect to universities becomes insignificant. The dummy for Japanese user was replaced with European user and the resulting coefficient was significant. However, the coefficient for the US user with respect to Japanese user became insignificant. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

Running this model alongside its rearranged version allows us to infer which type of organisation is more likely to be in favour of a grace period in principle. This is done by observing the sign of coefficients and by establishing whether they are significant or not.¹⁸ We reiterate that the main purpose of this exercise is to effectively isolate the effects of key users' characteristics (e.g. type of organisation and geographical origin) by controlling for the impact of other users' characteristics (e.g. previous experience in the use of the grace period) might have on the dependent variable of interest. The observed ranking is presented in the following table. From the table above, one can also observe the general attitude towards the grace period with 491 out of 648 respondents (76%) being in favour in principle. It can be seen that both universities and SMEs have a significant, positive effect when compared to large companies and thus large companies are classified as least

¹⁸ For the purposes of this analysis, we define significance at the 10% level; this implies that the value presented in the "Prob." column of the regression outputs should be less than 0.10.

favourable. When rearranging the model however with universities as the base case, SMEs appear not to have any additional influence (coefficients reported in the table note above). Hence, SMEs and universities are classified together as the most favourable.

Table 6.2: Ranking of preference according to type of organisation

	Most favourable	Least favourable
In favour of the Grace Period in principle	SMEs / Universities	Large companies

An identical table is presented below, following the same line of thinking and ranking the exhibited preferences of respondents by their different areas of origin.

Table 6.3: Ranking of preference according to applicant origin

	Most favourable	Least favourable
In favour of the Grace Period in principle	Japan/US	Europe

Moreover, using other fields as the base case, we observe that, compared to it, applicants active in chemistry and mechanical engineering are less favourable towards the grace period in principle. The others two clusters appear not to have a significant difference compared to other fields.

Table 6.4: Ranking of preference according to technological clusters

	Most favourable	Least favourable
In favour of the Grace Period in principle	Electrical Engineering, Instruments, Other fields	Chemistry, Mechanical Engineering

The final dummy variable included in this model captures any previous experience with using the grace period. Its estimated coefficient is positive and significant indicating that respondents who have had previous experience of using the grace period view it more favourably, in principle,

6.2 Preferences for grace period features

In this section we report respondents' preferences on five key features of a grace period design:

- duration (i.e. the period after disclosure during which it would be possible to file a patent application invoking the grace period);
- preferred date from which calculated (i.e. the date from which the term of the grace period should be computed, irrespective of its duration: either the filing date; or the filing date or priority date);
- declaration (i.e. whether or not applicants that wish to invoke the grace period should be required to file a declaration listing when, how and which information about their invention was made available to the public);
- prior user rights (i.e. whether prior user rights, which give third parties the right to continue using an invention after a patent has been filed, provided the third party's use of the invention

began before a critical date, should be available to third parties in good faith throughout the grace period.); and

- independent disclosure (i.e. whether the grace period should protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing).

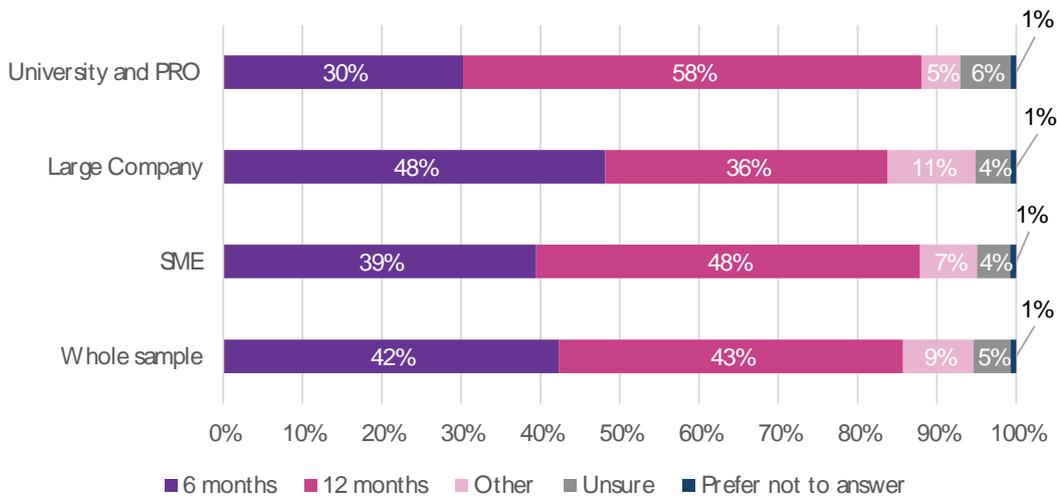
6.2.1 Duration

In assessing how long a grace period should last, policy makers need to balance the needs of two sets of parties affected by it:

- it should give inventors a reasonable amount of time to prepare a patent application after they have made details of the invention public; and
- third parties, and in particular competitors, should be able to assess within a reasonable time period whether an application has been filed for an invention which has already been made public.

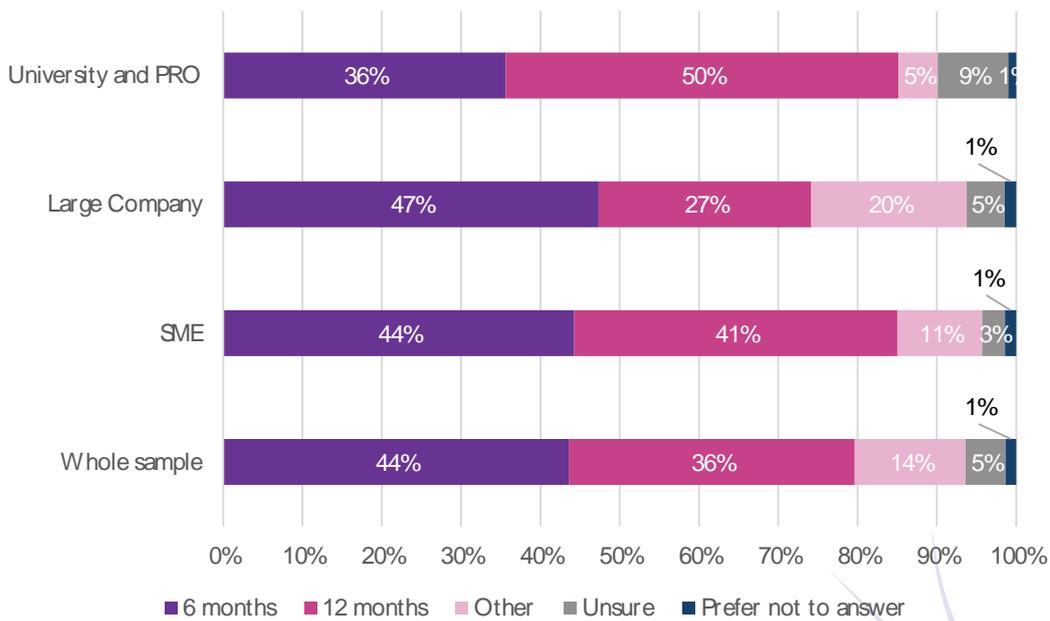
We asked survey respondents to weigh up these points and to identify the appropriate duration of a grace period if it were to be introduced in Europe. The breakdown of responses by type of respondent is shown in Figure 6.4, followed by a breakdown by type of respondent for European respondents only. A breakdown by country of origin is presented in Figure 6.6.

Figure 6.4: Q4. Preferred duration of the grace period by type of organisation



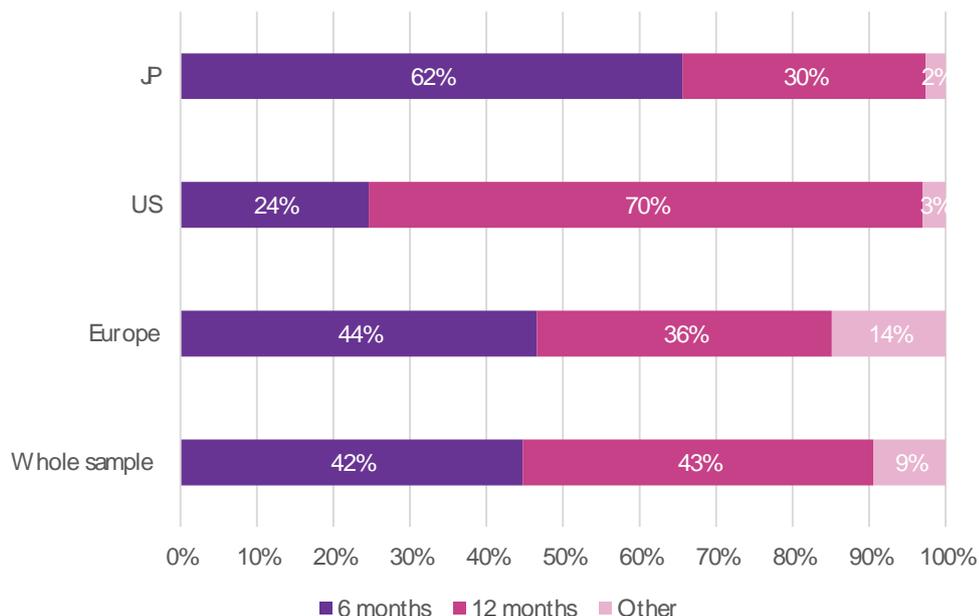
Note: The figure presents answers to: "In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?". Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 6.5: Q4. Preferred duration of the grace period by type of organisation for European respondents only



Note: The figure presents answers to: "In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?". The information presented in the above graph relies on 452 responses, 140 of which are SMEs, 209 large companies, 101 Universities or Public Research Organisations and 2 Prefer not to answer.

Figure 6.6: Q4. Preferred duration of the grace period by country of origin



Note: The figure presents answers to: "In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Overall, there is no clear preference amongst respondents between the two specified duration options of six months or 12 months. However, there is evidence from the Japanese and US responses that companies would prefer a European grace period to share the same characteristics as that which currently applies in their home country (i.e. since the current grace period duration in Japan is six months while it is 12 months in the US. On the whole, larger companies prefer a shorter duration and universities prefer a longer duration for the grace period. The opinions of SMEs are more mixed but a small minority is in favour of a duration of 12 months.

When considering European respondents only the situation is slightly different. As illustrated in Figure 6.5, the percentage of respondents across most types of organisations that are in favour of the shorter duration is now greater compared to the whole sample.

An econometric model was specified for this topic where the binary dependent variable was defined to take the value of one when the preferred duration was greater than six months and zero when preferred duration was six months or less. The results of the estimation are presented in the table below.

Table 6.5: Econometric output for being in favour of duration greater than six months

Dependent Variable: In favour of duration >= 6 months		
Variable	Marginal probability coefficient	Std. Error
SME & Individual	.0860	.0481*
University & PRO	.2964	.0535***
US user	.3096	.0497***
JP user	-0.0555	.0544
Electrical engineering	-0.2136	.0786***
Instruments	-0.1186	.0832
Chemistry	-0.1589	.0790**
Mechanical engineering	-0.1455	.0798*
Previous GP experience	.1798	.0436***
Log likelihood	-403.3875	
LR statistic	113.8732	
Prob(LR statistic)	0.0000	
Total obs	668	
Obs with Dep=0	364	
Obs with Dep=1	304	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. When re-running the model replacing the university dummy with a large company dummy the coefficient was significant. The coefficient for SMEs with respect to universities is also significant. The dummy for Japanese user was replaced with European user and the resulting coefficient was insignificant while the coefficient on the US was significant. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

The general attitude towards a duration greater than six months is close to being balanced with 45% being in favour. The observed ranking of organisation types is presented in the following table. It can be seen that large companies are least favourable towards a grace period with duration longer than six months (positive and significant coefficients on both university and SME dummies). When rearranging the model with universities as the base case, SMEs appear with a negative, significant coefficient (see notes to above table), which implies that they are less favourable to durations of longer than six months compared to universities. Hence, large companies are the least favourable, SMEs are comparably more favourable and universities are classified as the most favourable.

Table 6.6: Ranking of preference according to type of organisation

	Most favourable	Less favourable	Least favourable
In favour of Grace Period duration longer than 6 months	Universities	SMEs	Large companies

An identical table is presented below, following the same line of thinking and ranking the preferences of respondents by their different countries of origin. In this case, respondents from the US have a positive and significant coefficient in both iterations thereby enabling us to classify them as the most favourable. European and Japanese respondents, on the other hand, do not exhibit

statistically significant differences between them and are hence classified together as least favourable.

Table 6.7: Ranking of preference according to applicant origin

	Most favourable	Least favourable
In favour of Grace Period duration longer than 6 months	US	Europe/Japan

Moreover, using other fields as the base case, we observe that, compared to it, electrical engineering, chemistry and mechanical engineering are less favourable towards the grace period in principle. Instruments appears not to have a significant difference compared to other fields.

Table 6.8: Ranking of preference according to technological clusters

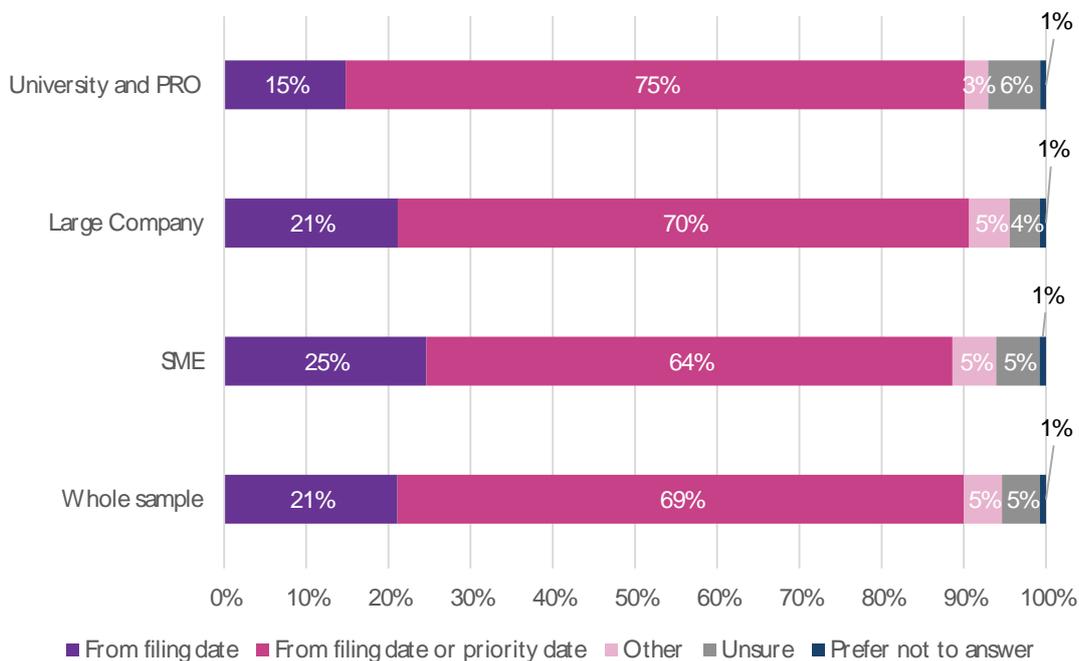
	Most favourable	Least favourable
In favour of Grace Period duration longer than 6 months	Instruments, Other fields	Electrical Engineering, Chemistry, Mechanical Engineering

The dummy variable capturing whether the respondent has had any previous experience with using the grace period has an estimated coefficient which is positive and significant indicating that respondents who have had previous experience using the grace period, view a longer duration more favourably.

6.2.2 Preferred date from which grace period should be computed

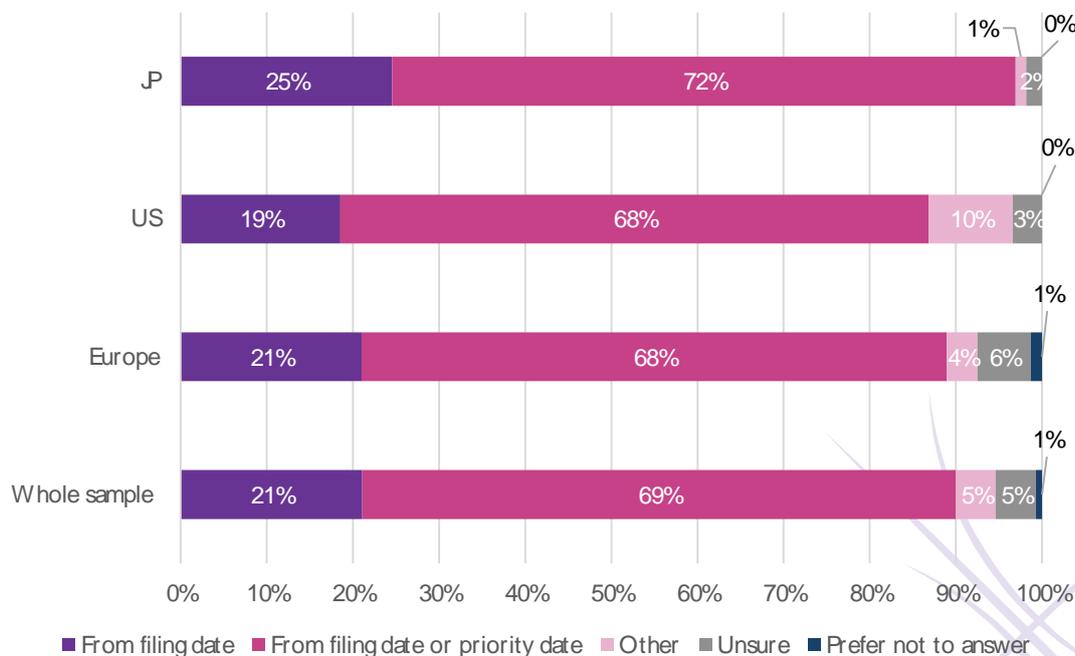
Respondents were then asked to consider the date from which the term of the grace period should be computed, irrespective of its duration: from the filing date; or from the filing date or priority date. As shown in Figure 6.7, there is a reasonably strong preference among all groups of respondents for the option in which the grace period would be computed from the filing date of the patent or the priority date, if applicable. Similarly, Figure 6.8 shows that there is a strong preference that the grace period be calculated from the filing date or priority date amongst respondents from Europe, Japan and the US. Indeed, more than 67% of respondents from each of these countries suggested that the relevant date should be the filing date or priority date.

Figure 6.7: Q5. Preferred date from which grace period should be calculated, by type of organisation



Note: The figure presents answers to: "Q5. Regardless of its duration, from which date should the term of the grace period be computed?". Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 6.8: Q5. Preferred date from which grace period should be calculated, by country of origin



Note: The figure presents answers to: "Q5. Regardless of its duration, from which date should the term of the grace period be computed?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

An econometric model was developed to analyse the extent to which preferences for the date from which grace period should be calculated differ between country, organisation type and

technological cluster. All such variables were insignificant in the model and hence we conclude that there is no clear difference in preference by the characteristics of the respondent.

6.2.3 Declaration

In some of the countries that have grace periods (including Japan but not the US), patent applicants must file a declaration listing when, how and which information about their invention was made available to the public. If the applicant fails to declare a pre-filing disclosure because he or she is unaware of it, the grace period still applies. The declaration requirement entails an additional formality for applicants but it enhances legal certainty as well as the efficiency of the patenting procedure. By consulting the patent office file, any third party can quickly check whether a pre-filing disclosure is graced, in which case it does not affect the validity of the patent. This information remains relevant after the patent has been granted.

In this context, we asked respondents to specify whether inventors should be required to make a declaration when they apply for a patent if they want to use the grace period. As shown in Figure 6.9, the majority of European and Japanese respondents considered that inventors should be required to make a declaration whereas respondents from the US felt the opposite. Once again, this finding reflects the prior experience of respondents from the US and Japan and the desire to ensure that should a European grace period be adopted, it would match the system to which they are accustomed. Breaking these responses down by type of organisation we find that the majority of respondents from all types of companies stated that the grace period should include a declaration requirement.

Figure 6.9: Q6. Should the grace period include a declaration requirement?



Note: The figure is based on answers to: "Do you think that inventors should be required to make a declaration when they apply for a patent if they want to use the grace period?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

An econometric model was specified for this topic where the binary dependent variable was defined to take the value of one when the respondent was in favour of a declaration requirement and zero when the respondent was not in favour. The results of our econometric estimation are presented in Table 6.9 below.

Table 6.9: Econometric output for being in favour of a declaration requirement

Dependent Variable: In favour of declaration requirement		
Variable	Marginal probability coefficient	Std. Error
SME & Individual	-0.0331	.0455
University & PRO	-0.0382	.0565
US user	-0.2820	.0530***
JP user	.0935	.0491*
Electrical engineering	.0600	.0762
Instruments	.1386	.0672**
Chemistry	.1325	.0705*
Mechanical engineering	.1230	.0682*
Previous GP experience	-0.1063	.0417**
Log likelihood	-363.0833	
LR statistic	75.0157	
Prob(LR statistic)	0.0000	
Total obs	640	
Obs with Dep=0	204	
Obs with Dep=1	436	

Note: The coefficients reported are marginal effects while the rest of the statistics presented source from the underlying probit model. When re-running the model replacing the university dummy with a large company dummy the coefficient was insignificant. The coefficient for SMEs with respect to universities also not significant. The dummy for Japanese user was replaced with European user with the resulting coefficient being significant and the coefficient on the US being also significant. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

There are no observable differences among organisation types, indicated by the fact that the coefficients on their dummy variables, in both iterations, are not significant. For that reason, there is no ranking table provided. In general, more than two thirds of the responses used in this model are in favour of a declaration requirement.

Below we present a table ranking the preferences of respondents by their country of origin. In this case, respondents from Japan have a positive and significant coefficient compared to those from Europe. In addition, Europe and the US have a negative coefficient when compared to Japan as a base case; this indicates that Japanese respondents view declaration requirements more favourably than do respondents from the US and Europe. Moreover, US users have significant and negative coefficients in both models thus enabling us to conclude that they have the least favourable preferences.

Table 6.10: Ranking of preference according to applicant origin

	Most favourable	Less favourable	Least favourable
In favour of declaration requirement	Japan	Europe	US

Moreover, using 'other fields' as the base case, we observe that, compared to it, instruments, chemistry and mechanical engineering are more favourable towards a declaration requirement. Electrical engineering appears not to have a significant difference compared to other fields.

Table 6.11: Ranking of preference according to technological clusters

	Most favourable	Least favourable
In favour of declaration requirement	Instruments, Chemistry, Mechanical Engineering	Electrical Engineering, Other fields

The dummy variable capturing whether the respondent has had any previous experience with using the grace period has an estimated coefficient which is negative and significant indicating that respondents who have had previous experience using the grace period view a declaration requirement less favourably than those who have not had any experience.

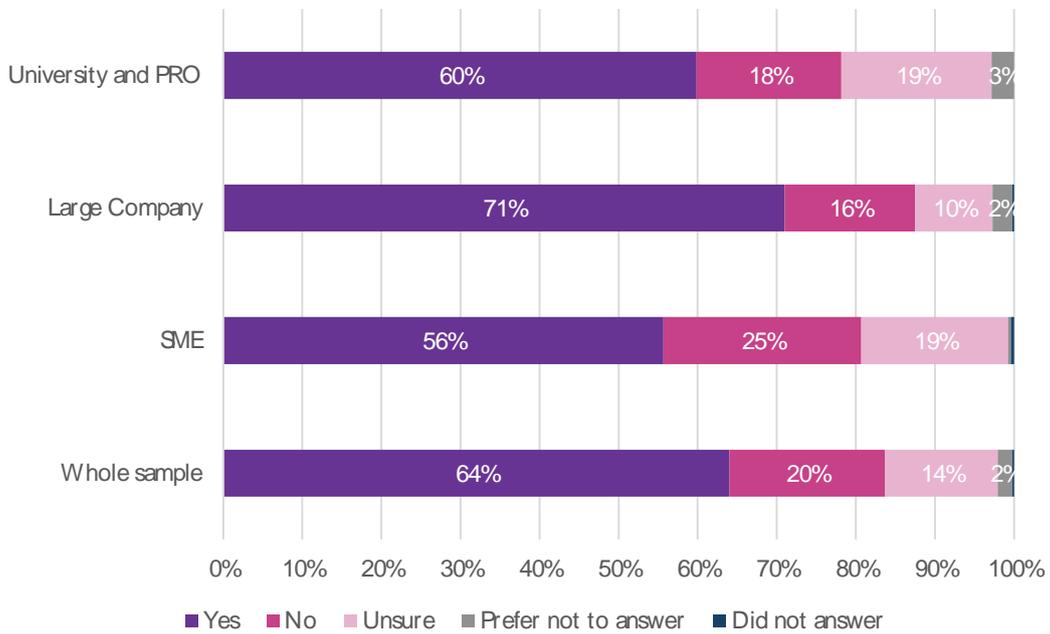
6.2.4 Prior user rights

A prior user right gives a third party the right to continue using an invention after a patent has been filed, provided the third party's use of the invention began before a critical date, usually the filing date of the patent application, or where applicable, the priority date. This can happen when the third party has made the same invention independently, or has acquired knowledge of the invention from another inventor in good faith. In countries which have a first-to-file patent system, prior user rights allow patents to be granted to the first applicant to file without destroying the investments in good faith made by third parties who may be using the same invention, but chose to do so secretly. These rights are rooted in policy considerations of both efficiency and fairness.

We asked respondents to specify whether prior user rights should be available to third parties in good faith throughout the grace period.

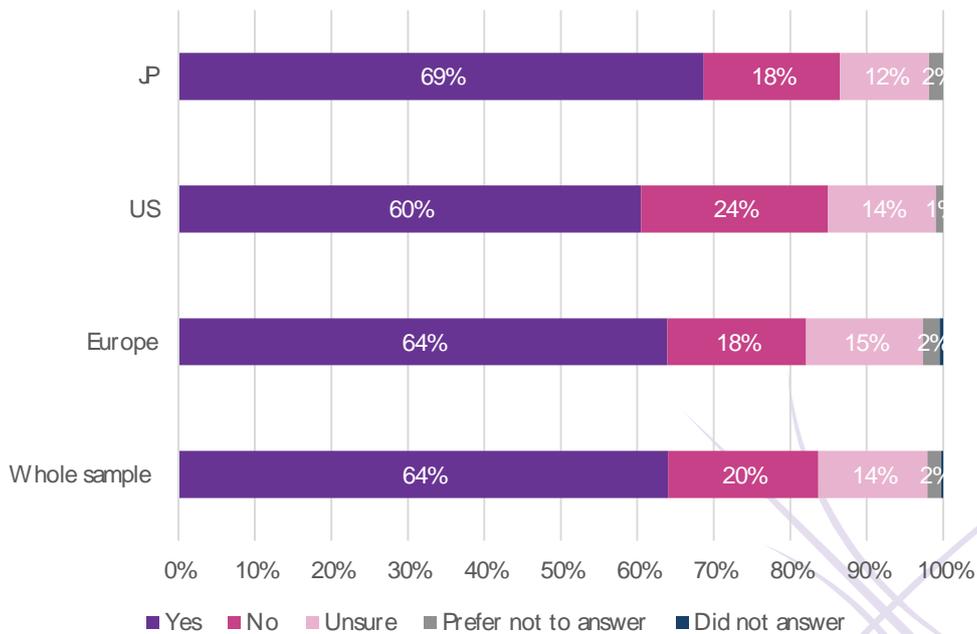
University interviewees stated that a grace period should protect applicants from prior user rights being acquired by third parties having used their own invention in good faith during the grace period. However, it should be noted that the issue of prior user rights was met with limited understanding amongst university interviewees and hence we received only limited responses to this question. This is to be expected, as universities may generate innovation, but they are much less likely to adopt technology for commercial purposes which would put them in the position of a competitor in the market place needing prior user rights to continue what they did before the application was filed. The results presented in Figure 6.10 show that the majority of survey respondents believe that such rights should be available, for all types of organisation. A similar finding applies when responses are broken down by the origin of the applicant, as shown in Figure 6.11: the majority of respondents from the US, Japan and Europe consider that prior user rights should be available to third parties in good faith throughout the grace period.

Figure 6.10: Q7. Should prior user rights be available to third parties in good faith throughout the grace period? Responses broken down by type of organisation



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 6.11: Q7. Should prior user rights be available to third parties in good faith throughout the grace period? Responses broken down by country of origin



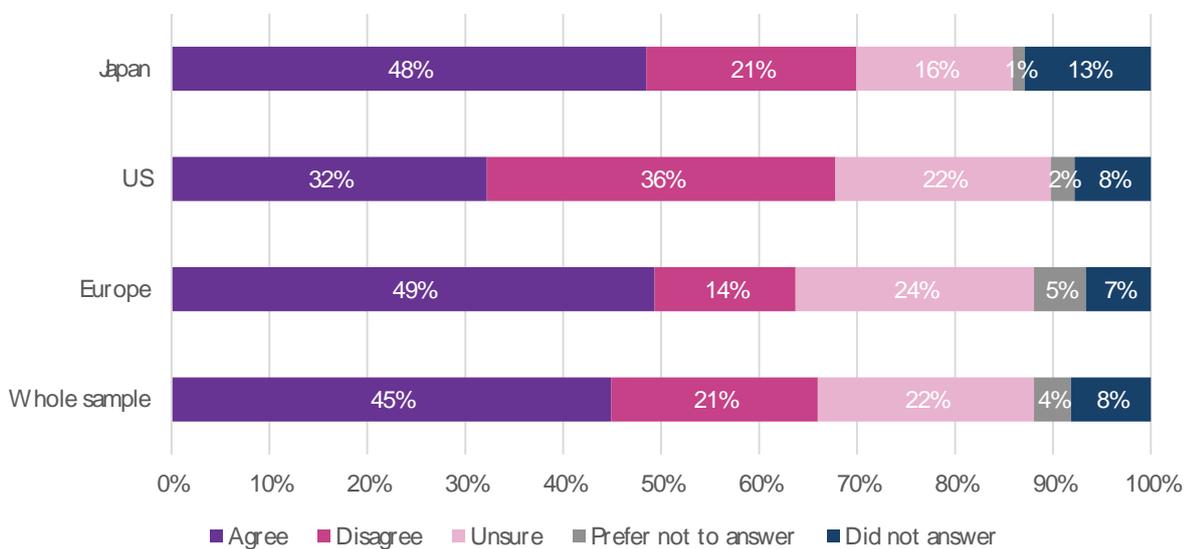
Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Building on these responses, we asked respondents to specify whether or not they agree with certain statements about prior user rights. Perhaps the most interesting finding here was the number of respondents who either stated being unsure, preferred not to answer or did not answer

the questions: respectively 34%, 29% and 23% for all three questions. This further indicates possibly a surprising lack of understanding amongst users of the relationship between the grace period and prior user rights, or a quandary as the respondent considered the situation from the perspective of both the rights holder and the competitor. These figures must be borne in mind in reviewing the results below.

Figure 6.12 shows that a significant portion of European (49%) and Japanese (48%) respondents (a majority of those who actually took a position on this issue) agreed that prior user rights are an essential component of the grace period contributing to enhancing legal certainty by discouraging pre-filing disclosure, compared to only 32% of US respondents.

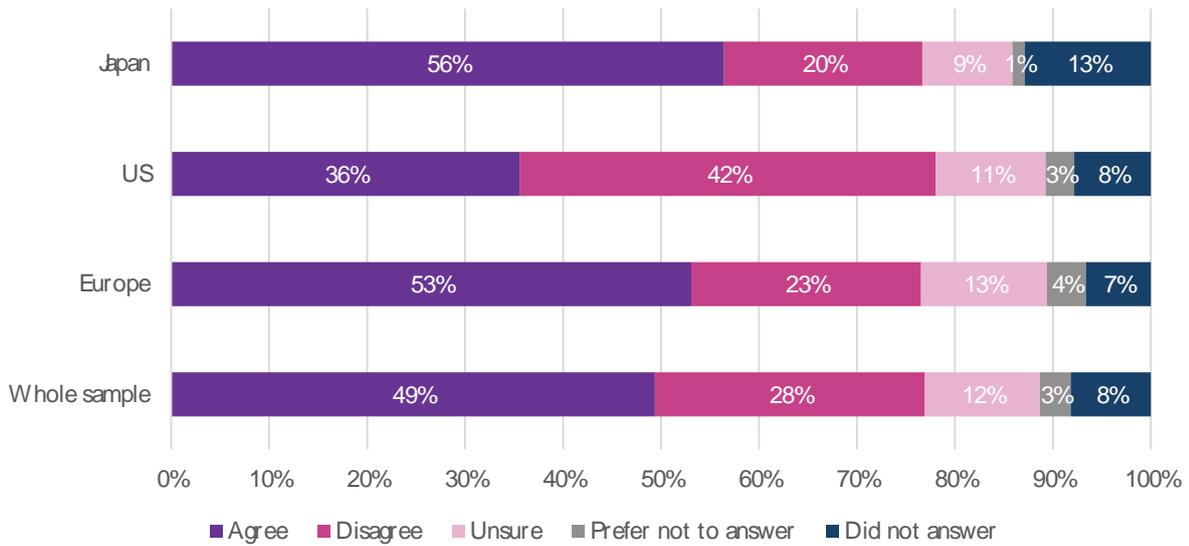
Figure 6.12: Views on: "Prior user rights are an essential component of a grace period. They contribute to enhancing legal certainty by discouraging pre-filing disclosure where such disclosures may be avoided."



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 6.13 shows that a significant portion of respondents from the US (40%) disagreed with the notion that prior user rights are irrelevant to the definition of the grace period while only 20% of respondents from Japan and 23% of respondents from Europe held that view.

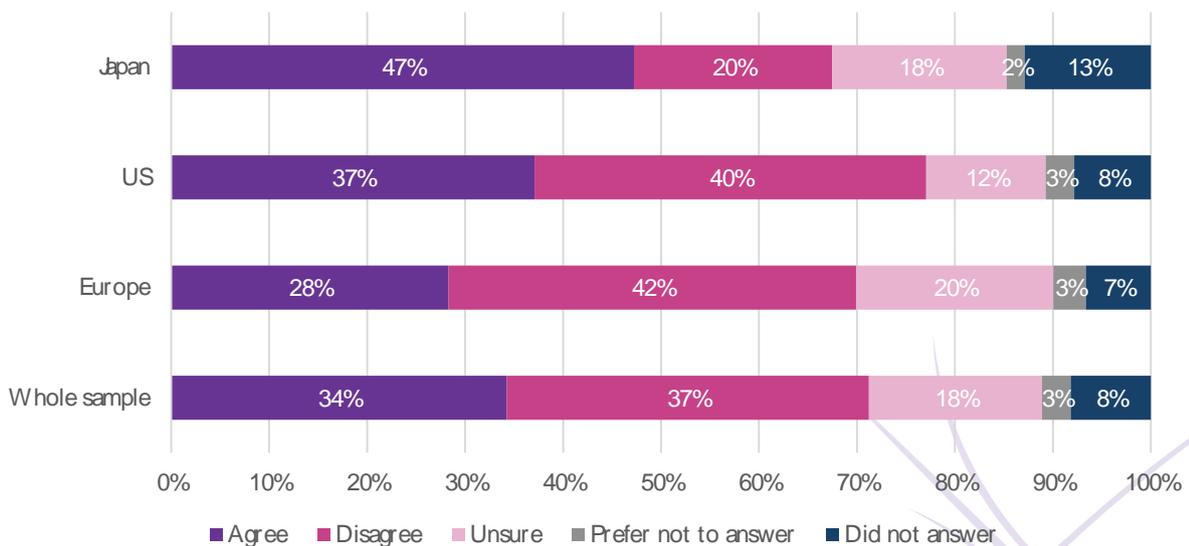
Figure 6.13: Views on: "Prior user rights are irrelevant to the definition of the grace period."



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 6.14 shows the divergence of Japanese respondents' views compared to respondents from Europe and the US. The majority of Japanese respondents (47%) stated they agree that third party prior users, in good-faith, should not be stopped from using the invention once a patent has been obtained for it. On the other hand, the majority of respondents who expressed a view from Europe and the US disagree with that statement.

Figure 6.14: Views on prior user rights



Note: The figure presents respondents' views on the following statement: "Where an invention has been put in the public domain and a third party has begun using it in good faith, a patent subsequently obtained thanks to the grace period should not stop that person from continuing to use the invention." This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

In the econometric model specified for this topic the binary dependent variable was defined to take the value of one when the respondent was in favour of availability of prior user rights in good

faith and zero when the respondent was not in favour, based on responses to Q7 of the survey, as presented in Figure 6.10 and Figure 6.11.

The results of our econometric estimation are presented in Table 6.12 below.

Table 6.12: Econometric output for being in favour of prior user rights

Dependent Variable: In favour of prior user right		
Variable	Marginal probability coefficient	Std. Error
SME & Individual	-0.0950	.0433**
University & PRO	-0.0458	.0536
US user	-0.0359	.0471
JP user	.0291	.0464
Electrical engineering	.0222	.0741
Instruments	-0.0376	.0797
Chemistry	.0502	.0697
Mechanical engineering	.0543	.0679
Previous GP experience	-0.0665	.0390*
Log likelihood	-321.2260	
LR statistic	16.6260	
Prob(LR statistic)	0.0549	
Total obs	609	
Obs with Dep=0	141	
Obs with Dep=1	468	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. When re-running the model replacing the university dummy with a large company dummy the coefficient was insignificant. The coefficient for SMEs with respect to universities also not significant. The dummy for Japanese user was replaced with European user and the resulting coefficient was not significant and the coefficient on the US was also not significant. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

The majority of the respondents who were included in the econometric model were in favour of prior user rights (77%). The only observable difference between organisation types is that SMEs view prior user rights less favourably to large companies, as shown by the negative and significant coefficient in Table 6.12. This results in classifying large companies and universities as most favourable, with SMEs viewed as least favourable.

Table 6.13: Ranking of preference according to type of organisation

	Most favourable	Least favourable
In favour of prior use rights	Universities, Large Companies	SMEs

There are no observable differences in the responses when considering the respondents' country of origin or their technological cluster and so we do not report a table here.

The dummy variable capturing whether the respondent has had any previous experience with using the grace period has an estimated coefficient which is negative and significant indicating that respondents who have had previous experience using the grace period, view a prior user rights less favourably than those who have not had any experience.

6.2.5 Independent disclosure

In most countries, the grace period applies only to disclosures of the applicant's invention. Where an invention independently made by a third party is disclosed prior to the filing date, it forms part of the prior art and destroys the novelty of the applicant's invention. In some other countries, this is not the case. Once the applicant has disclosed his or her invention, no disclosure of that invention independently made by a third party will destroy the novelty of the applicant's invention. In this context, we asked respondents to specify whether the grace period should protect inventors from subsequent disclosures of the inventions independently made by third parties prior to filing.

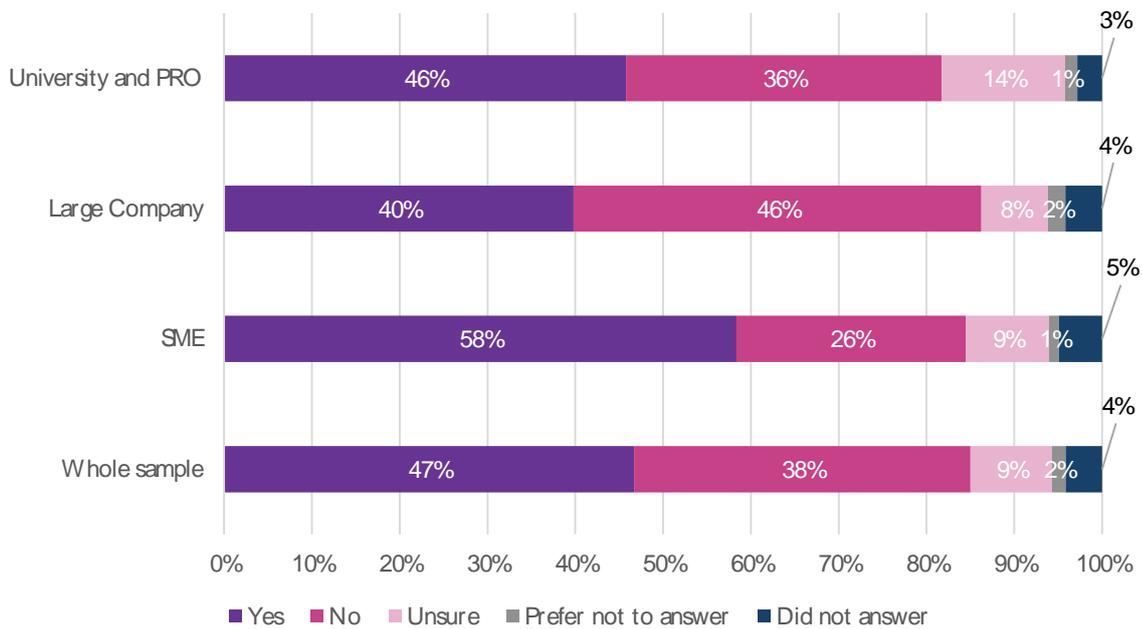
A mix of views were obtained on this issue in our interviews with universities. While one respondent did not support such protection since it is difficult to judge whether the independent disclosure is based on the original disclosure or not, others believed that the first date of disclosure should be treated as the priority date and the corresponding invention should be protected against independent disclosures from third parties in the grace period interval.

SMEs and large companies that participated in interviews generally stated that the original inventor, namely the individual who came up with the invention first, should have patent rights and should be protected from the actions of third parties. However, one respondent felt that with the widespread use of online platform, any online publication can be quickly re-published or commented by third parties and so the grace period should also extend to third parties.

There were similarly mixed views among respondents to the survey, as illustrated in Figure 6.15. While a majority of SMEs believe the grace period should protect inventors from subsequent disclosures of the inventions independently made by third parties prior to filing, which was also the most common response amongst universities, the most common response amongst large firms was the opposite.

An analysis of responses by country of origin found that 58% of US respondents believe that the grace period should protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing while there was a fairly even split for European and Japanese respondents in terms of those that supported and opposed such protection.

Figure 6.15: Q9. Should the grace period protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing?



Note: Figure presented is based on answers to: "...should the grace period protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing?". Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

An econometric model was specified for this topic where the binary dependent variable was defined to take the value of one when the respondent was in favour of protection from disclosure of independent inventions and zero if they were not in favour. The results of the estimation are presented in the table below.

Table 6.14: Econometric output for being in favour of protection from disclosure of independent inventions

Dependent Variable: In favour of protection from disclosure of independent inventions		
Variable	Marginal probability coefficient	Std. Error
SME & Individual	.1771	.0454***
University & PRO	.1361	.0556**
US user	.2071	.0506***
JP user	.0347	.0558
Electrical engineering	-0.0227	.0889
Instruments	.0785	.0845
Chemistry	-0.0098	.0811
Mechanical engineering	.0169	.0842
Previous GP experience	-0.1487	.0451***
Log likelihood	-414.2705	
LR statistic	46.7320	
Prob(LR statistic)	0.0000	
Total obs	634	
Obs with Dep=0	293	
Obs with Dep=1	341	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. When re-running the model replacing the university dummy with a large company dummy the coefficient was significant. The coefficient for SMEs with respect to universities was not significant. The dummy for Japanese user was replaced with European user and the resulting coefficient was insignificant while the coefficient on the US was significant. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

Almost half of the respondents in the econometric sample are in favour of protection from disclosure of independent inventions (54%). The observed ranking of organisation types is presented in the following table. It can be seen that large companies are least favourable towards this type of protection (positive and significant coefficients on both university and SME dummies in the table above). At the same time, the coefficient of SMEs when universities are the base case is not significant. Hence, large companies are the least favourable while SMEs and universities are classified as the most favourable.

Table 6.15: Ranking of preference according to type of organisation

	Most favourable	Least favourable
In favour of protection from disclosure of independent inventors	Universities, SMEs	Large companies

In terms of country of origin, the only statistically significant relationship appears to be that the US users view this type of protection more favourably than both European and Japanese users. This is shown in the table below.

Table 6.16: Ranking of preference according to applicant origin

	Most favourable	Least favourable
In favour of protection from disclosure of independent inventors	US	Europe/Japan

There were no statistically significant differences among clusters. However, the dummy variable capturing previous experience of using the grace period has an estimated coefficient which is negative and significant indicating that respondents who have had previous experience using the grace period, view protection less favourably compared to respondents with no previous experience.

6.2.6 Summary

The results of the econometric models run for the four different features of the grace period are consolidated in the three tables below. In these tables we present the ranking of preferences for each feature based on the type of organisation (first table), the geographical origin (second table) and the technological cluster (third and final table).

Table 6.17: Ranking of preference for different grace period features by type of organisation

	Rank of preference from most favourable (left), to least favourable (right)		
In favour of Duration > 6 months	Universities	SME	Large
Prefer filing or priority date	Universities	SME	Large
In favour of declaration requirements	Universities	SME	Large
In favour of prior user rights	Universities	Large	SME
In favour of protection from disclosure of independent inventions	SME	Universities	Large

Table 6.18: Ranking of preference for different grace period features by geographical origin

	Rank of preference from most favourable (left), to least favourable (right)		
In favour of Duration > 6 months	US	Europe / JP	
Prefer filing or priority date	Europe /US/JP		
In favour of declaration requirements	JP	Europe	US
In favour of prior user rights	Europe /US/JP		
In favour of protection from disclosure of independent inventions	US	Europe /JP	

Table 6.19: Ranking of preference for different grace period features by technological cluster

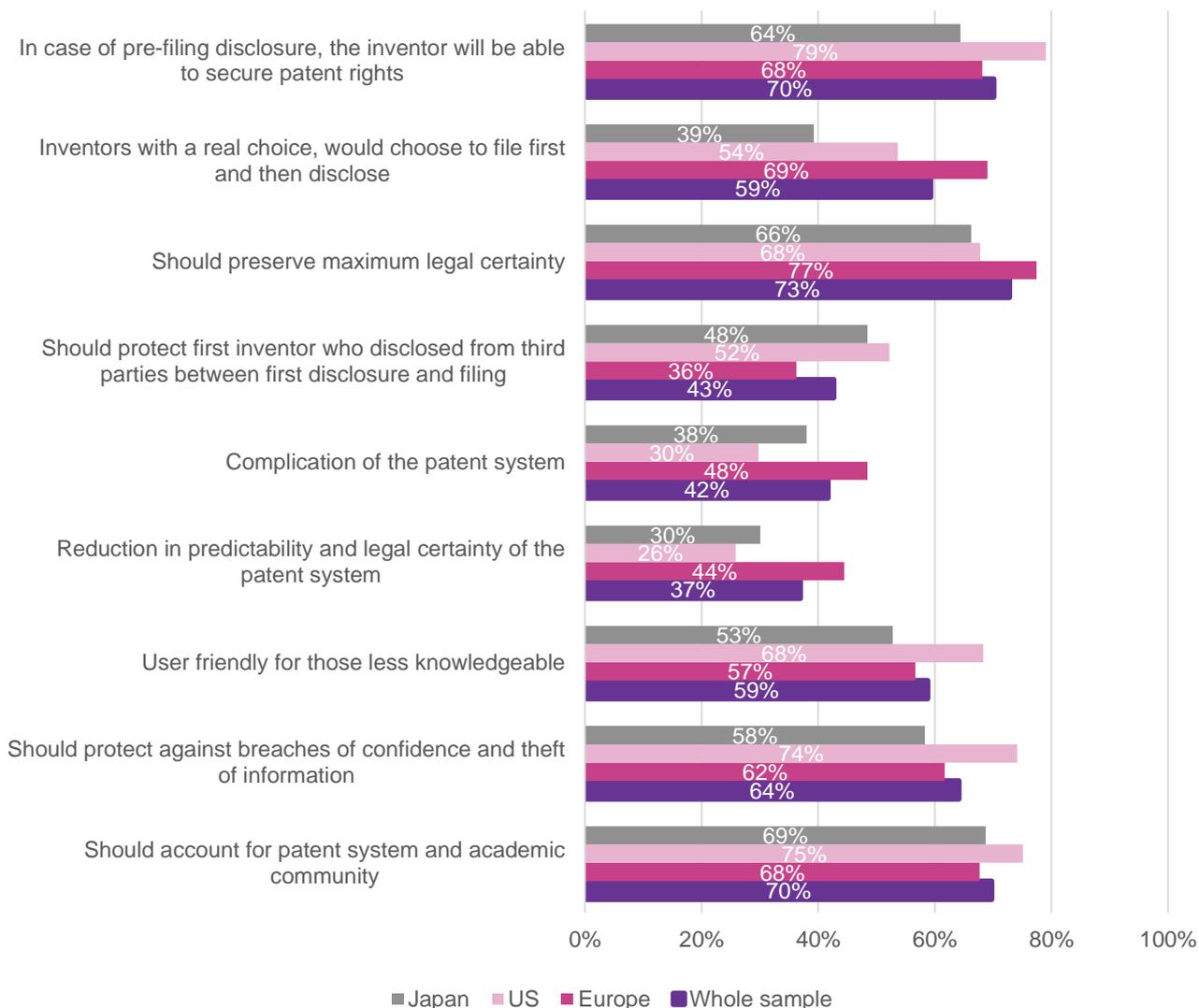
	Rank of preference from more favourable (left), to least favourable (right)	
In favour of Duration > 6 months	Instruments/ other	Electrical engineering/

	fields	chemistry/ mechanical engineering
Prefer filing or priority date	All clusters	
In favour of declaration requirements	Instruments/ chemistry/ mechanical engineering	Electrical engineering / other fields
In favour of prior user rights	All clusters	
In favour of protection from disclosure of independent inventions	All clusters	

6.3 Main grace period objectives

Once respondents' attitudes towards specific features of grace periods were ascertained, they were asked to indicate whether or not they agreed with numerous specific statements on the objectives of grace periods. Whilst an overall majority of respondents (59%) agree that a grace period should be defined so as to ensure that any inventor with a real choice would choose to file first and then disclose his invention, Figure 6.16 shows a significant difference of opinion between respondents from Europe, the US and Japan. While 69% of European respondents agreed with this statement, only 54% of US respondents and 39% of Japanese respondents agreed. Similarly, a greater proportion of US and Japanese respondents agreed that the grace period should protect the first inventor who disclosed from third parties between first disclosure and filing than did European respondents. In all regions, the majority of respondents agree that a grace period should take into account both the goals of the patent system and the needs of the scientific and academic community, as well as protect inventors against the consequences of breach of confidence and theft of information.

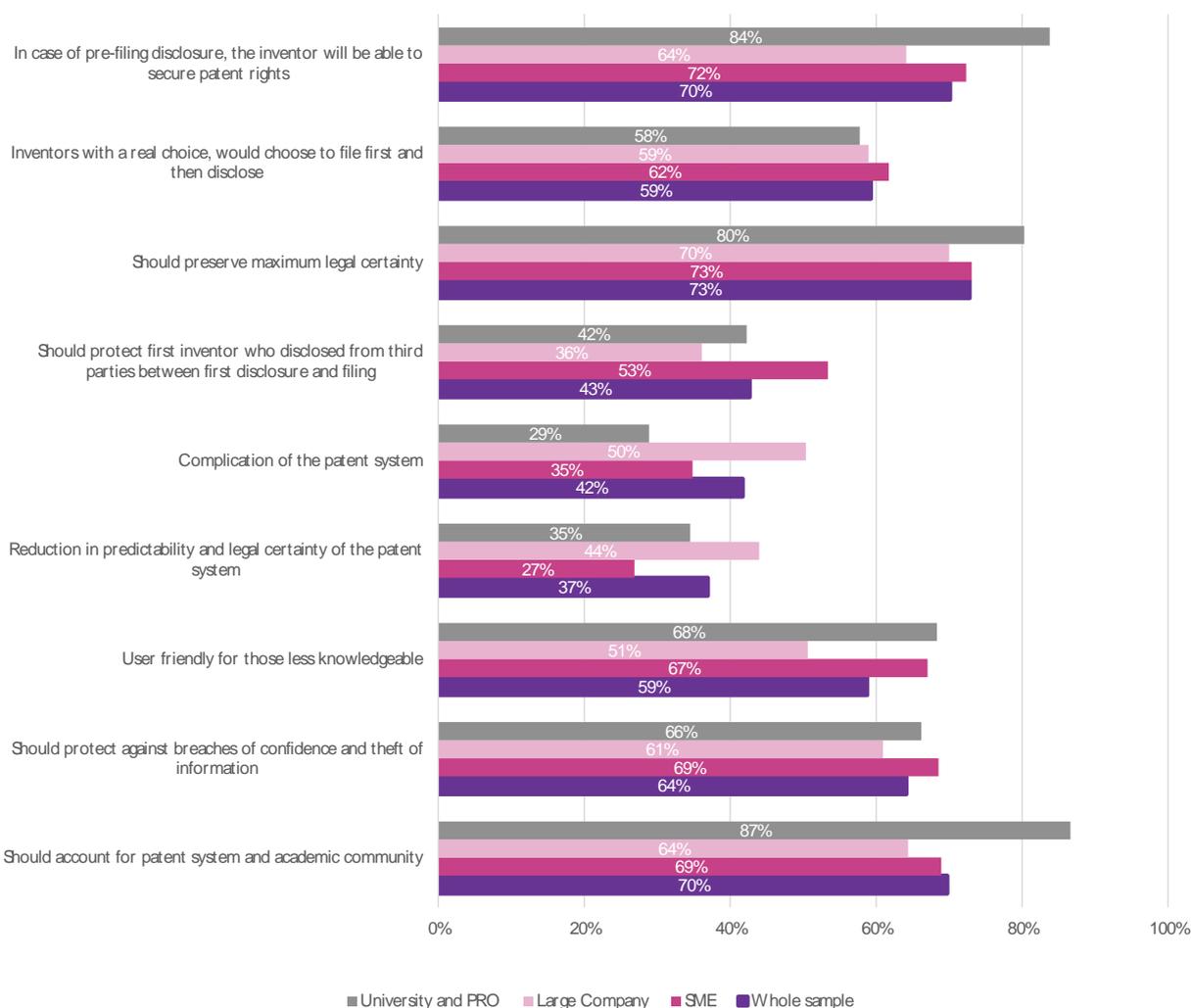
Figure 6.16: Proportion of respondents that agree with a specific statement about grace periods by country



Note: The information presented in the above graph relies on an average of 730 respondents.

Responses by type of organisation are shown in the figure below. Universities and PROs are particularly keen that a grace period accounts for both the patent system and the academic community and also consider it important that inventors should be able to secure patent rights in cases of pre-filing disclosure. A relatively large proportion of SMEs agree that a grace period should protect the first inventor who disclosed from third parties between first disclosure and filing whereas a majority of large companies did not agree with this statement. Legal certainty is considered important by a majority of respondents, with 73% of respondents overall (77% of Europeans) agreeing that the grace period should be defined so as to preserve maximum legal certainty.

Figure 6.17: Proportion of respondents that agree with a specific statement about grace periods by type of organisation



Note: The information presented in the above graph relies on an average of 730 respondents.

Detailed charts for each specific statement are presented in Appendix 3.

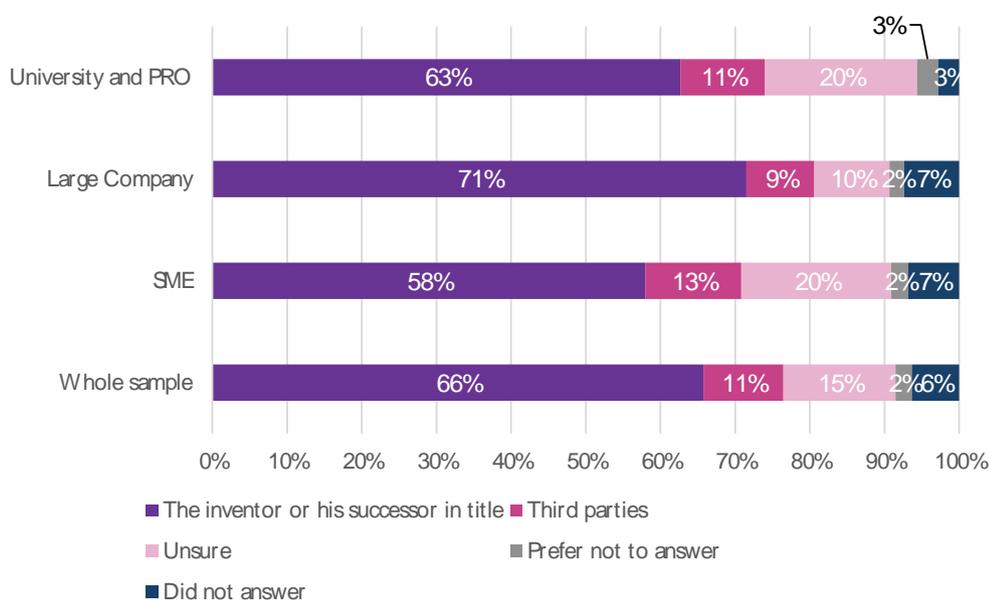
6.3.1 Risks associated with pre-filing disclosure

We then asked respondents to indicate, under the assumption that a grace period exists, who should bear the risks associated with a pre-filing disclosure. As shown in the figures below, a significant majority of respondents consider that this risk should be borne by the inventor or its successor in title. This finding is common to organisations of all types and to respondents from all regions, and was the expected response, in view of the results of the Tegernsee survey on that question as administered by the EPO. It stands in glaring opposition to responses earlier in this survey regarding the level of protection to be afforded an inventor should he disclose his invention

prior to filing (in Q9 and Q10, for instance), which, given the results of the Tegernsee survey, were unexpected (see Q.10 of the Tegernsee Survey).¹⁹

The survey responses were confirmed in interviews. A majority of SMEs that participated in interviews felt that the risk associated with disclosing inventions prior to filing should be borne by the inventor, although one respondent believed that the risk should be borne by the competitors who try to copy an invention protected by the grace period, while another answered that such risk should be shared between the two parties. Similarly, most large companies that participated in interviews believed that the inventor should bear the risk of such early disclosure although one respondent felt that the risk should be borne by both the inventor and third parties.

Figure 6.18: Q12. Who should bear the risks associated with a pre-filing disclosure? Responses presented by type of organisation



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

¹⁹ One possible explanation for this inconsistency is the framing of the questions. Q12 addressed risks in general, addressing the equities of the situation on principle, whereas Q9 and Q10 focused on very specific risks for applicants, and it is possible that respondents answered from the perspective of the applicant, rather than factoring in the effect of the rule should they be the independent third party in that constellation.

Figure 6.19: Q12. Who should bear the risks associated with a pre-filing disclosure? Responses presented by region of origin



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

6.4 Preference for specific grace period designs

As noted above, some countries currently have grace periods, which are defined in many different ways, and some countries have no grace period. In particular, both the US and Japan have grace periods, but Europe does not. In the Final Consolidated Report on the Tegernsee User Consultation (2014), which investigated the position of users in Japan, the US and Europe with regard inter alia to the grace period within the context of international substantive patent law harmonisation, a majority of European users set forth a definition of a safety-net grace period which they could envisage as a compromise approach, provided this was done in such a manner that the grace period itself was internationally harmonised and included in a broader harmonisation package. A safety-net approach to the grace period has long been discussed, but this is not a term of art, so that the definition given within the Tegernsee Consultation has the merit of giving this term substance. The following table summarises the key differences between the US, the Japanese, and the safety-net grace period as defined by European users within the Tegernsee process.

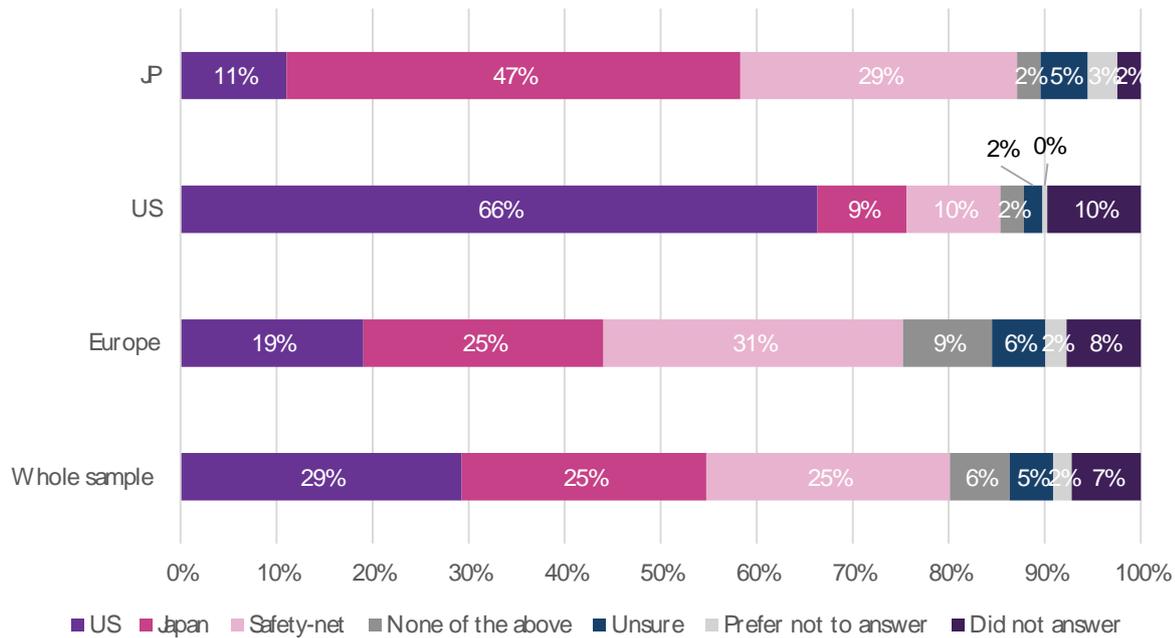
Table 6.20: Characteristics of different grace periods

	US	Japan	Safety Net
Duration of Grace Period	12 months	6 months	6 months
Pre-filing Declaration Required	No	Yes	Yes
Prior user rights	No	Sometimes	Yes

	US	Japan	Safety Net
	No prior user rights may arise during the grace period	Prior user rights may be obtained throughout the grace period by third parties in good faith However, these rights cannot arise where knowledge of the invention has been derived from the applicant, even in good faith.	Third parties who used the invention in good faith before the filing date or priority date of the application, could continue to use the invention even if a patent is granted to the applicant. This would apply whether or not knowledge of the invention was derived from the applicant.
Disclosure of independent inventions	Disclosures by independent inventors of their own inventions between the first disclosure by the applicant and the filing date of the patent application are not novelty destroying. Independent inventors may be stopped from using their own inventions by the subsequent patent,	Disclosures by independent inventors of their own inventions prior to the filing date are novelty destroying.	Disclosures by independent inventors of their own inventions prior to the filing date would be novelty destroying.

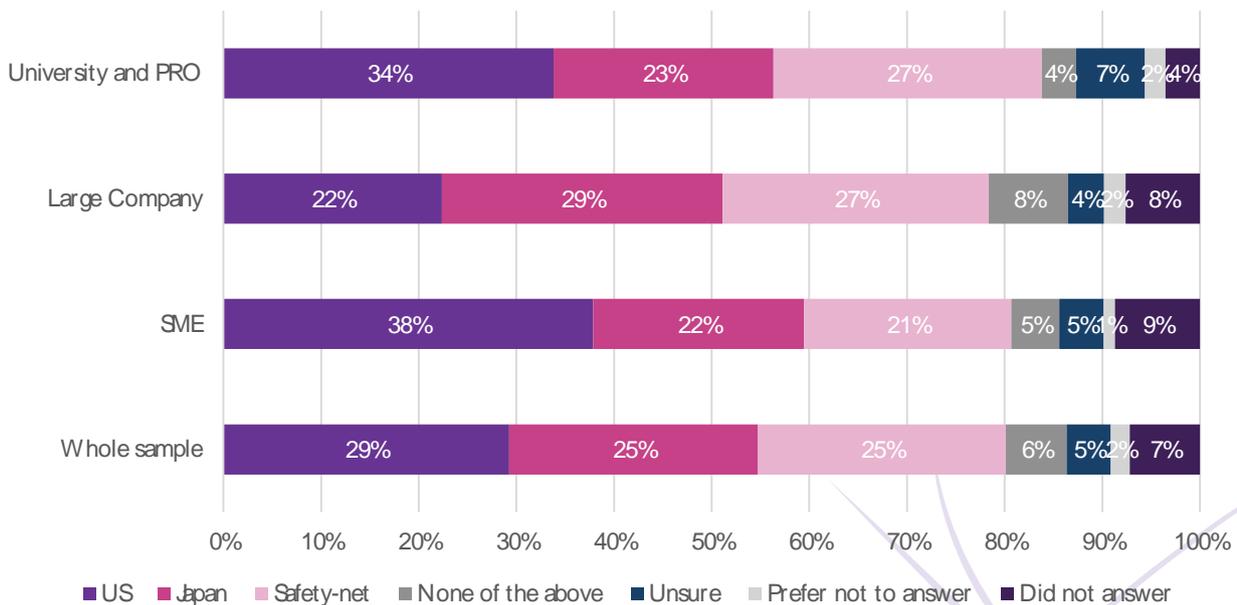
Respondents were asked to specify which of these grace period definitions they preferred. The responses illustrated in Figure 6.20 lead to a somewhat unsurprising conclusion: Japanese respondents prefer the Japanese definition; US respondents prefer the US definition; and European respondents prefer the safety-net definition. It is interesting to note, however, that the second-preference of Japanese respondents is the safety-net definition while the second-preference of European respondents is the Japanese definition. Furthermore, the strength of preference for the national definition is greatest among US respondents and more muted for respondents from Europe and Japan. Responses are reasonably consistent across types of organisation, although universities/PROs and SMEs have a somewhat stronger preference for the US definition than do large companies.

Figure 6.20: Q17. Preferred grace period definition, by country of origin



Note: This figure presents answers to: "If you had to choose just one of the three grace periods, the US, Japanese or the safety-net, which one would you choose?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 6.21: Q17. Preferred grace period definition, by type of organisation



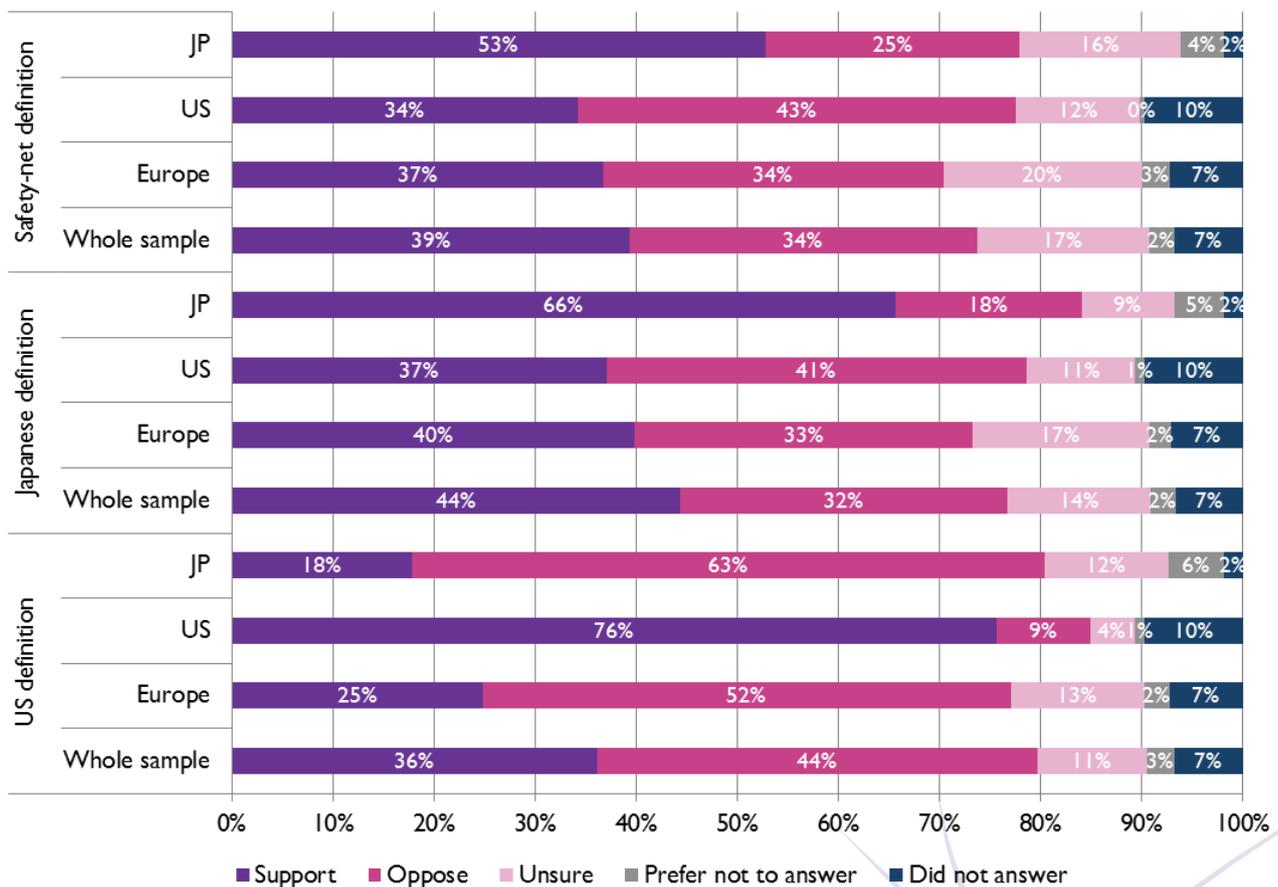
Note: This figure presents answers to: "If you had to choose just one of the three grace periods, the US, Japanese or the safety-net, which one would you choose?". Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

We also asked respondents to specify whether they would support or oppose each of the three definitions of the grace period if it were the only option available. As shown in Figure 6.22, the responses to those questions are consistent with the above discussion:

- the majority of Japanese respondents would oppose the US definition but would support the Japanese and safety-net definitions;
- the majority of US respondents would support the US definition but many would oppose the Japanese and safety-net definitions; and
- the majority of European respondents would oppose the US definition but more would support the Japanese and safety-net definitions than would oppose them.

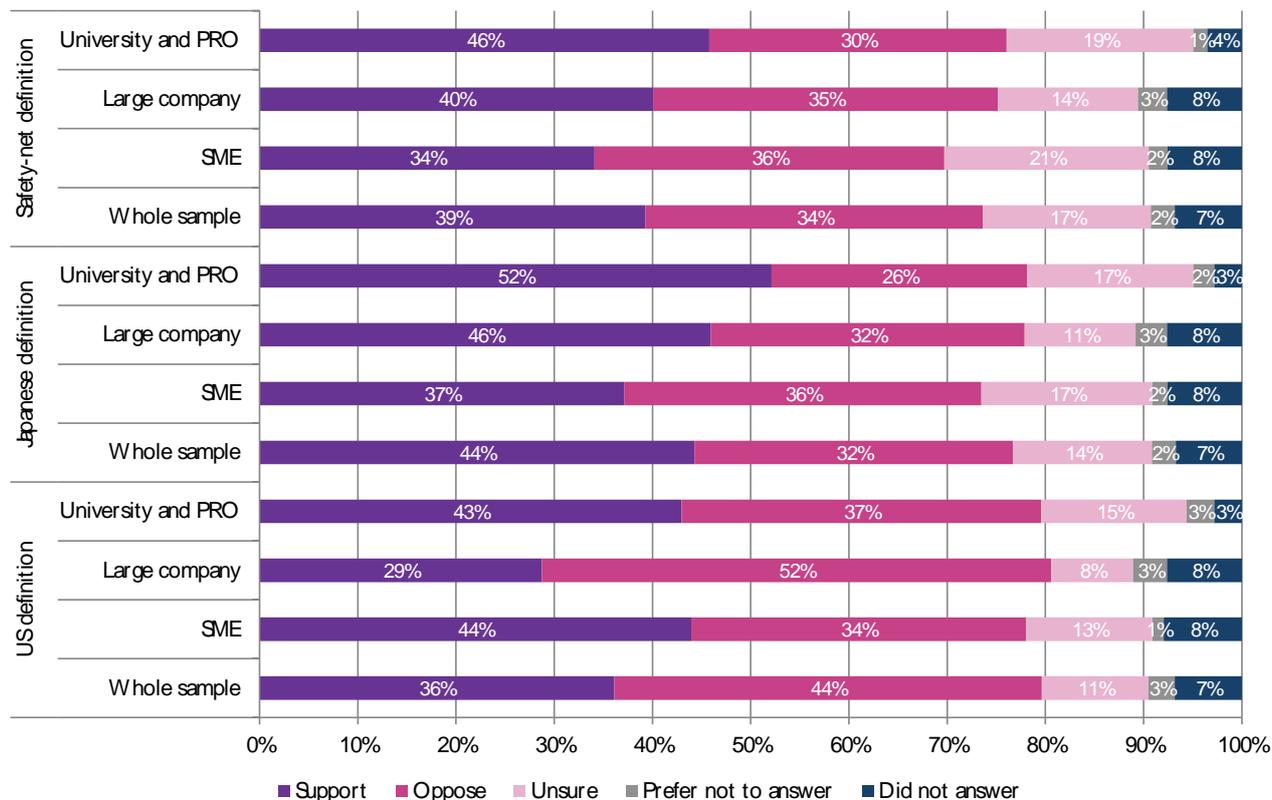
Figure 6.21 again confirms the findings from the question on preferred grace period definition, as described above. In particular, universities/PROs and SMEs have greater support for the US definition than do large companies. However, universities/PROs and large firms show stronger preference for the Japanese definition than for any other definition while SMEs most strongly support the US definition.

Figure 6.22: Q14-16. Support or oppose different grace period definitions, by country of origin



Note: The figure presents answers to three identical questions, one for each definition of the grace period: "If the XXX definition were the only option available for a grace period as an international norm, would you support it or oppose it?". The information presented in the above graph relies on 820 responses.

Figure 6.23: Q14-16. Support or oppose different grace period definitions, by type of organisation



Note: The figure presents answers to three identical questions, one for each definition of the grace period: “If the XXX definition were the only option available for a grace period as an international norm, would you support it or oppose it?”. Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

We have also conducted a more formal analysis of the preferences across three available grace period models (safety net model envisaged by some European users, US model, and Japanese model) by exploiting answers to the survey question in which respondents were asked to choose one of the three models as the preferred international norm. Answers to this question were then used in order to make pairwise comparisons between the three grace period models considered. More specifically, we run three separate probit models based on the following depending variables.

- **US definition preferred to Japanese definition:** To create this variable we restricted the sample to respondents who either preferred the US definition or the Japanese definition. The dependent variable was then assigned a value of one for those that preferred the US definition and zero for those who preferred the Japanese definition.
- **Safety-net definition preferred to US definition:** To create this variable we restricted the sample to respondents who either preferred the safety-net definition or the US definition. The dependent variable was then assigned a value of one for those that preferred the safety-net definition and zero for those who preferred the US definition.
- **Safety-net definition preferred to Japanese definition:** To create this variable we restricted the sample to respondents who either preferred the safety-net definition or the Japanese definition. The dependent variable was then assigned a value of one for those that preferred the safety-net definition and zero for those who preferred the Japanese definition.

The econometric results of these models are presented in the table below.

Table 6.21: Econometric output for grace period definition preferences

Dependent Variable: model	US model preferred to JP		Safety-net model preferred to US model		Safety-net model preferred to JP model	
Variable	Marginal probability coefficient	Std. Error	Marginal probability coefficient	Std. Error	Marginal probability coefficient	Std. Error
SME & Individual	.1001	.0614	-.1501	.0605**	-.0477	.0629
University & PRO	.1807	.0719**	-.1893	.0693***	.0342	.0745
US user	.4704	.0507***	-.4926	.0482***	-.0270	.0926
JP user	-0.2370	.0707***	.1019	.0802	-.1616	.0599***
Electrical engineering	-0.0988	.1219	.0972	.1196	-.0502	.1125
Instruments	-0.0475	.1183	-.0203	.1144	-.1038	.1096
Chemistry	-0.1455	.1132	.1276	.1087	-.0210	.1038
Mechanical engineering	-0.0854	.1172	.0476	.1117	-.0346	.1054
Previous GP experience	.0764	.0602	-.1347	.0587**	-.0245	.0558
Log likelihood	-115.0867		-101.5597		-184.2486	
LR statistic	184.1001		217.2478		22.3812	
Prob(LR statistic)	0.0000		0.0000		0.0497	
Total obs	300		304		282	
Obs with Dep=0	139		161		139	
Obs with Dep=1	161		143		143	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. When re-running the model replacing the university dummy with a large company dummy the coefficient was negative and significant. The dummy for Japanese user was replaced with European user and the resulting coefficient was positive and significant as was the coefficient on the US. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

An examination of the coefficients for the first model reveals that Japanese respondents are the least likely to prefer the US model (relative to the Japanese model), with European respondents being more likely and US respondents being the most likely. Both SMEs/individuals and universities/PROs are more likely to prefer the US definition than are large firms but we find no difference between technological clusters with respect to preferences for the US or Japanese definitions. The extent to which respondents have previous grace period experience also seems not to play a role.

For the second model, an examination of the coefficients of dummy variables reveals that both SMEs/individuals and universities/PROs are less likely to prefer the safety-net definition to the US definition than are large firms. The results also show that US users are the least likely to prefer the safety-net to the US definition. There is no significant difference observed in that aspect between European and Japanese respondents and neither are there differences between technological clusters. However, we find that those with previous grace period experience are less likely to prefer the safety net definition to the US definition than are those without such experience. Again, we observe a consistency between the preference for a specific grace period model and the respondents' stated preferences for key grace period features.

In the third model, Japanese respondents have the least favourable attitude towards the safety-net definition when compared to the Japanese definition. We find no evidence of a differences by

technological cluster or organisation type, no evidence of differences in preference between US and European users and no evidence that preferences depend on whether the respondent has previous grace period experience.

We notice, however, that the value of the “Prob(LR statistic)” for this model, presented at the bottom of the table above, indicates that the explanatory power of the model is very limited. This is also confirmed by the fact that the only statistically significant coefficient is the country of origin dummy indicating that the user is Japanese. A potential reason for the poor performance of the model is that the differences between the safety-net and Japanese grace period models are significantly less marked compared, for example, to the difference between the safety net and the US definitions, or between the Japanese and US definitions.

The rank of respondents' preference for pairwise comparisons of grace period models are reported in the tables below.

Table 6.22: Rank of preferences for different grace period definitions by origin of respondent

	Rank of preference from more favourable (left), to least favourable (right)		
US definition preferred to JP definition	US users	European users	JP users
Safety-net definition preferred to US definition	European/JP users	US users	
Safety-net definition preferred to JP definition	European/US users	JP users	

Table 6.23: Rank of preferences for different grace period definitions by type of respondent

	Rank of preference from more favourable (left), to least favourable (right)	
US definition preferred to JP definition	Uni & PROs	SME / Large company
Safety-net definition preferred to US definition	Large company	SME / Uni & PRO
Safety-net definition preferred to JP definition	NA	NA

7 Concerns about Grace Periods

7.1 Litigation issues, costs and other potential adverse effects

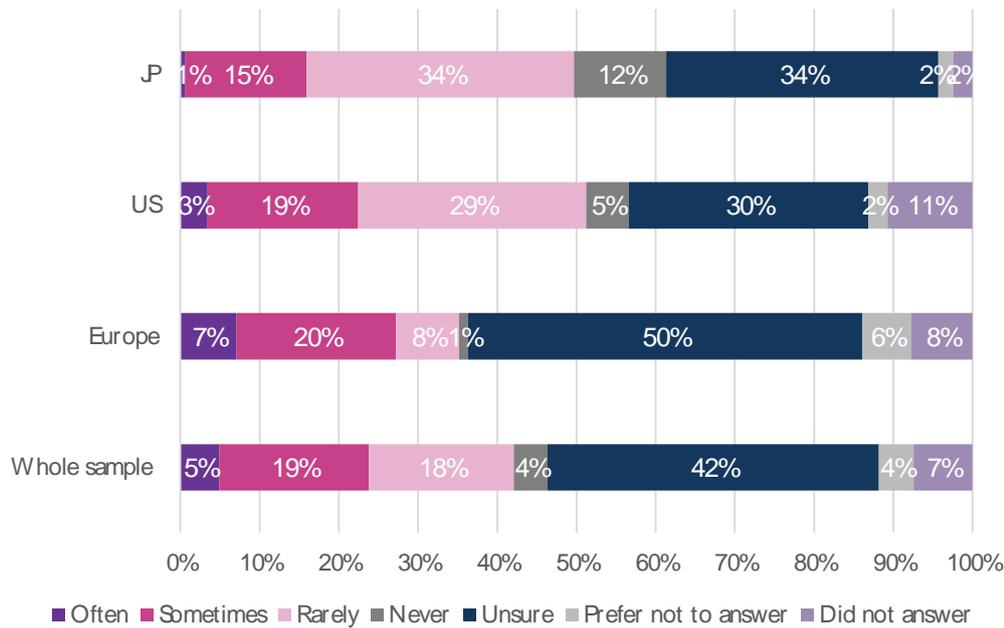
As indicated in the literature review, it is expected by some that the introduction of a grace period in Europe would create greater legal uncertainty for all stakeholders of the patent system. This is due to the fact that, after disclosure of an invention, depending on the duration of the grace period, it would take longer before third parties could know whether a patent has been filed for the subject matter or whether the invention is and shall remain in the public domain.

Moreover, since users are often quoted as saying that they cannot use the grace period in their own countries because Europe and China do not have one, it can be queried whether, should Europe adopt a grace period, whatever its definition, this would cause applicants to change their behaviour as a result of the disappearance of this element of deterrence to pre-filing disclosure. If more applicants make use of the grace period, this increases the instances where an invention may be in the public domain, yet not be free for all to use, as well as the corollary, that an item of prior art may not be invalidating for a subsequent applicant.

To understand the real impact of a grace period on legal certainty we asked respondents to specify the extent to which the grace period has given rise to issues in litigation or various review procedures available post-grant in the US and Japan. As shown in Figure 7.1, respondents from all countries of origin have experience of the grace period giving rise to issues in litigation or various review procedures available post-grant in the US and Japan. Relatively few respondents consider that such issues arise often but equally few report that such issues have never arisen. The frequency with which issues are reported to have arisen is greater for respondents for Europe than for respondents from the US and Japan. One possible explanation for this might be that European organisations are less familiar with the Japanese and US patent systems than are respondents based in those countries and so are more likely to encounter issues.

Interestingly, there does not seem to be a significant difference in the frequency with which respondents have faced issues by type of organisation: the majority of large firms, SMEs and universities all reported that they have experienced issues either sometimes or rarely.

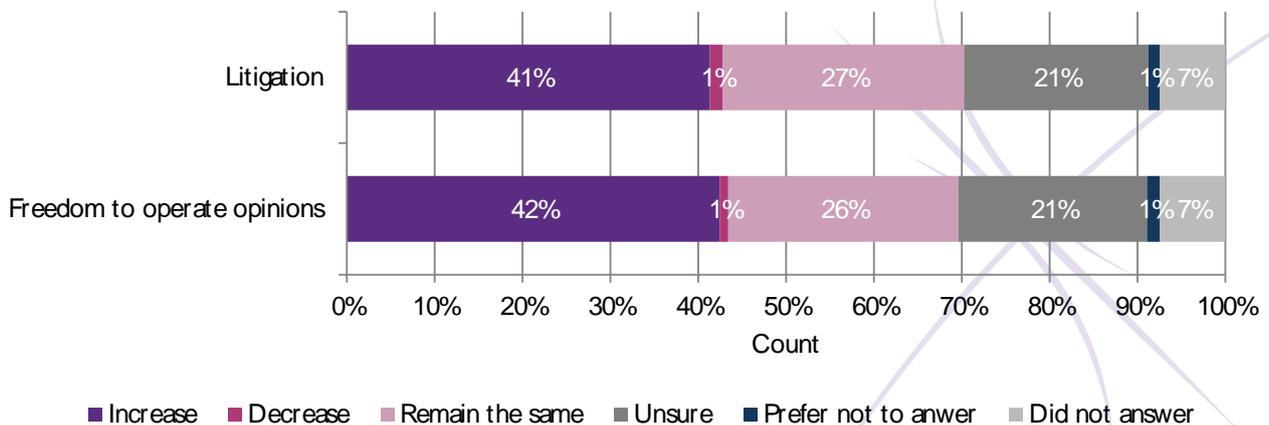
Figure 7.1: Q37. How frequently has the grace period given rise to issues in litigation or various review procedures available post-grant in the US and Japan?



Note: The figure presents answers to: "Would you say the grace period has given rise to issues in litigation or various review procedures available post-grant in the US and Japan?". This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Should the adoption of a grace period in Europe occur and lead to an increase in legal uncertainty as expected, this might lead to an increase in the cost of securing patent protection in Europe. Moreover, there could be a change in the cost of obtaining freedom to operate opinions as well as in the cost of litigation. Figure 7.2 shows that there are mixed views among respondents with respect to the expected impact of a grace period in Europe on costs but there is great similarity of expectations for changes in the different types of costs. More precisely, a majority of those that expressed an opinion stated that they would expect costs to increase due to the grace period but a substantial minority felt that there would be no impact on costs. This trend is broadly replicated when responses are broken down by country of origin and type of organisation.

Figure 7.2: Q38-39. Expected impact of grace period on costs



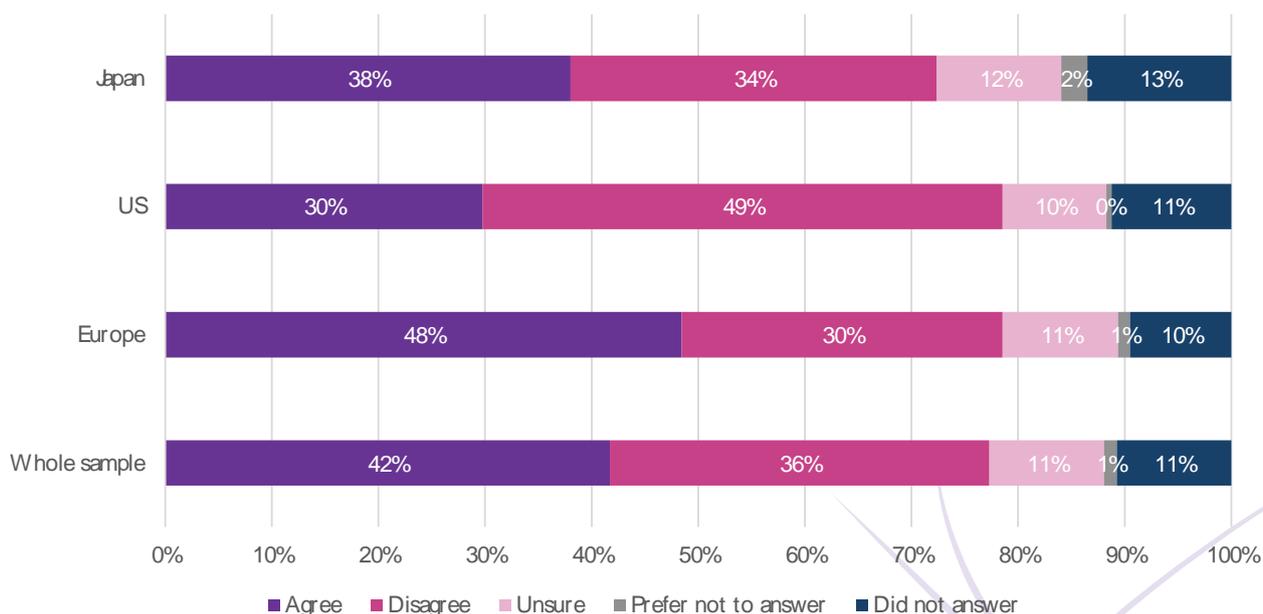
Note: The figure presents answers to two questions: "If a grace period were introduced in Europe, would you expect the cost of freedom to operate opinions to increase, decrease or remain the same?" and "If a grace period were introduced in Europe, would you expect the cost of litigation to increase, decrease or remain the same?" The information presented in the above graph relies on 820 responses.

The grace period may have other adverse effects. The survey asked respondents to indicate whether or not they agreed that the grace period would complicate the patent system and whether they agreed that it would reduce the predictability of the patent system in addition to reducing legal certainty.

Figure 7.3 and Figure 7.4 provide further evidence of the enthusiasm of US respondents for grace periods and the lower degree of support for the concept amongst European respondents. In particular, approximately half of European respondents consider that the grace period complicates the patent system (48%) and reduces its predictability and legal certainty (44%) whereas the proportions of Japanese (38% and 30%, respectively) and US (30 and 26%, respectively) respondents that hold these views are significantly lower.

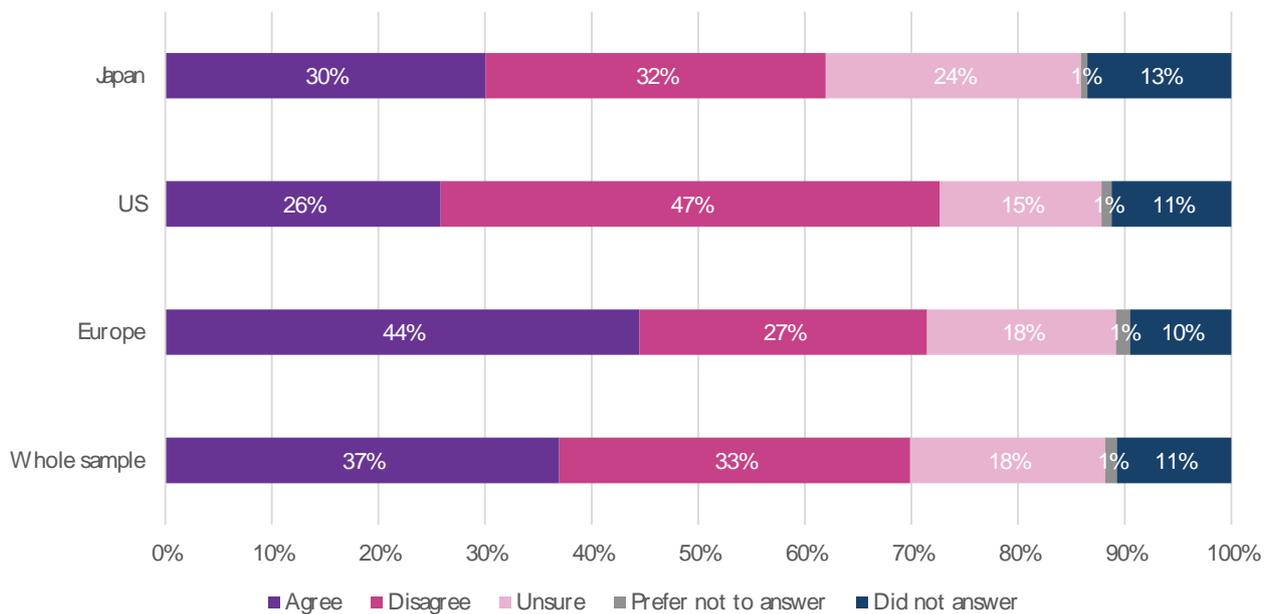
However, the opinion of users in the US and Japan that the grace period is not considered to be a cause of legal uncertainty may be shaped partly by the fact that global players tend to adopt the default strategy of filing first and disclosing later – presumably at least partly because of the lack of a grace period in Europe. Thus, it can be argued that neither the US nor Japan actually currently experience the full effects of their own national grace period provisions.

Figure 7.3: Q10.5 Is a good reason for not having a grace period that it complicates the patent system? Responses by region of origin



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 7.4: Q10.4 Does the grace period reduce the predictability and legal certainty of the patent system? Responses by region of origin



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

A greater proportion of large companies consider that grace periods increase the complexity of the patent system and reduce the predictability and legal certainty of the system than is the case for SMEs and universities / PROs. While 50% of large companies consider that grace periods complicate the patent system, the corresponding figures for universities / PROs and SMEs are 29% and 35% respectively. Similarly, 44% of large companies consider that the grace periods reduce predictability and legal certainty whereas 35% of universities / PROs and 27% of SMEs hold that view.

We have further investigated patent users' opinion of whether the grace period might lead to an increase in legal uncertainty, freedom to operate costs and litigation costs through econometric analysis. Based on the survey responses we have defined the following dependent variables:

- **Perceived increase in legal uncertainty:** the variable takes a value of one if the respondent agrees there would be an increase in legal uncertainty if a grace period were introduced in Europe, and a value of zero if he disagrees with the statement (respondents who answered "Unsure" or "Prefer not to answer" were excluded from the analysis).
- **Perceived increase in cost of obtaining freedom to operate opinions:** the variable takes a value of one if the respondent states that he believes there would be an increase in the costs of obtaining freedom to operate opinions if a grace period were introduced in Europe, and a value of zero if he feels these costs would either remain unchanged or decrease (respondents who answered "Unsure" or "Prefer not to answer" were excluded from the analysis).
- **Perceived increase in litigation costs:** the variable takes a value of one if the respondents states that he believes there would be an increase in litigation costs if a grace period were introduced in Europe, and a value of zero if he feels these costs would either remain unchanged or

decrease (respondents who answered “Unsure” or “Prefer not to answer” were excluded from the analysis).

The econometric output for these models is presented in the table below.

Table 7.1: Econometric output for increased legal uncertainty

Variable	Increase in legal uncertainty		Increase in litigation costs		Increase in the costs of freedom to operate	
	Marginal probability coefficient	Std. Error	Marginal probability coefficient	Std. Error	Marginal probability coefficient	Std. Error
SME	-.1640	.0523***	-.0563	.0517	-.0226	.0507
University & PRO	-.1502	.0624**	.0031	.0625	.0628	.0602
US user	-.2060	.0566***	-.1234	.0578**	-.1167	.0568**
JP user	-.1444	.0617**	.0551	.0624	.0216	.0600
Electrical engineering	.0089	.1024	-.1158	.1022	-.1998	.1109*
Instruments	.01393	.1008	-.0732	.0989	-.2253	.1075**
Chemistry	.0243	.0969	-.0436	.0924	-.1853	.1002*
Mechanical engineering	.0593	.0975	.0357	.0927	-.1691	.1052
Previous GP experience	-.0769	.0499	-.2421	.0469***	-.1902	.0463***
Log likelihood	-346.8450		-345.5988		-346.0106	
LR statistic	40.8478		57.5524		40.9173	
Prob(LR statistic)	0.0000		0.0000		0.0000	
Total obs	531		551		546	
Obs with Dep=0	251		230		216	
Obs with Dep=1	280		321		330	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

In the first model, the results show that universities and SMEs had significant negative coefficients indicating that they are less likely to agree with the statement that the introduction of a grace period would lead to increased legal uncertainty than are large companies. No statistically significant difference was observed between universities and SMEs. The negative and significant coefficient on US and Japanese users, indicates that they are less likely than European respondents to agree with the above statement; there exists no statistically significant difference between the US and Japan however. Moreover, we find no evidence of differences between technological clusters and no evidence that previous experience of grace periods plays a role in shaping preferences.

In the second model, there were no observable differences in responses between types of organisations and the different technological clusters in respect of their expectations for increased litigation costs. The negative and significant coefficient on US users, in both the model presented and the rearranged model, indicates that US users are less likely, compared to European and Japanese users, to believe that there would be an increase in litigation costs after the introduction of a grace period in Europe. Those with previous experience of grace periods are also less likely to believe that there would be an increase in litigation costs than are those with no experience of using grace periods.

The econometric output for increased costs of freedom to operate opinions is presented in the table below. One can observe similarities with the results for increased litigation costs. In particular, US users are less likely to believe that there would be an increase in such costs.

Additionally, the electrical engineering, instruments and chemistry clusters are less likely to have this believe that there would be an increase in the cost of obtaining freedom to operate opinions.

7.2 Attitudes towards grace periods as a competitor

In interviews with SMEs and large companies, we asked respondents to consider their attitudes towards grace periods in several scenarios in which they are a competitor and a patent is held by a third party. The purpose of these questions was to assess whether or not their attitudes towards grace periods changed in cases where they are a competitor rather than the holder of a patent.

We first asked interviewees to assume that they had made their own invention, but had decided not to patent it and instead used it so that it is disclosed to the public. In this scenario, another firm ("the patent applicant") made the same invention and disclosed it before the interviewee had done so and filed a patent application after the interviewee had disclosed its invention.

In this scenario, SMEs generally felt that the firm who made the initial disclosure should have the right to obtain a patent since it is the 'first' inventor. However, some respondents felt that their use of their own invention should be protected through prior user rights since they had disclosed and used their invention before the competitor filed a patent application.

In contrast, large companies tended to consider that the competitor firm should not be able to secure patent protection as the invention would lack novelty. Others, however, stated that the patent should be granted but were concerned that there would be greater legal uncertainty. In any case, interviewees believed that prior user rights should accrue.

We then asked interviewees to assume that they began to use an invention in good faith which is well known and in the public domain and that they had invested in and /or built upon that invention for the purposes of their business prior to the filing of the patent application by the firm that made the invention.

In this scenario, some SMEs felt that once they had started using the invention made by a third party before a patent application is filed they should be able to continue using it with "prior user rights" even after the patent is granted. On the other hand, some respondents believed the opposite and stated that the patent system would be undermined if it cannot prevent non-patent holders from using the patented invention.

A majority of interviewees from large companies felt that their competitor should not use the grace period to test the market response to its invention as some saw this as a potential abuse of the grace period. In any case, large companies stated that their prior user rights should be protected.

We then asked interviewees to assume that they and one of their competitors had made the same invention independently of each other. We further asked that they assume that without knowledge of the invention by the other, the interviewee had decided to use the invention without patent protection whilst, at the same time, their competitor had filed a patent application.

In this scenario, SMEs generally stated that the third party should be entitled to obtain a patent for their invention but, at the same time, felt that they should also be protected to use their own inventions under prior user rights. Many large companies agreed with this view but some believed

that prior user rights would invalidate the purpose of the patent system and should not be protected.

When also asked about their views on freedom to operate opinions as a competitor to the organisation filing for patent protection, SMEs felt that legal clarity on freedom to operate was essential. Some respondents believed that perfect certainty is not attainable regardless of the existence of a grace period although others felt that the grace period may make it more difficult to ascertain freedom to operate. Large companies also felt that legal clarity on freedom to operate was crucially important; most believed that the introduction of a grace period would undermine legal clarity and diminish the validity of their freedom to operate assessments.

A majority of SMEs felt that a mandatory declaration would be important and helpful, providing clarity for third parties when pre-filing disclosures occur. Others were against mandatory declaration, however, believing that it would unnecessarily complicate the patent system and create legal uncertainty, decreasing the likelihood of companies making use of the grace period and disclosing information about their inventions. The views of large companies were mixed in respect of a declaration requirement: half felt that mandatory declaration would help provide legal certainty and some believed that undeclared information should not be able to benefit from a grace period. By contrast, the remaining large companies believed that mandatory declaration would only lead to more uncertainty, higher costs, and a system that would be easy to manipulate.

Overall, many SMEs maintained their initial view on the need for a grace period in Europe after considering the issues from the perspective of a competitor. However, others reported that their view had changed from being in favour of a grace period to against it, believing that it may provide scope for competitors to abuse the disclosed information and ignore the patent, as well as opening up a grey area of legal uncertainty.

All large companies that participated in interviews maintained their original views. Most felt that the introduction of a grace period would only stir up legal uncertainty and create a system too difficult for inventors and business people to comprehend. Moreover, one respondent commented that grace period would benefit only the universities, which do not need to commercialise their inventions.

8 Reactions to a Grace Period in Europe

An important element of this study is to develop an understanding of the likely behavioural changes that might be associated with the introduction of the grace period in Europe. The two main behavioural changes we address in this section are:

- a possible increase in pre-filing disclosures; and
- a possible increase in the number of applications filed at the EPO.

These are discussed in turn.

8.1 Possible increase in pre-filing disclosures

8.1.1 General projected changes

If the grace period were introduced in Europe, users of the European patent system may choose to disclose their inventions more often prior to filing and thus make use of the grace period. The extent to which the grace period would be used would, however, depend on its design. Therefore, a series of questions were included in interviews and the survey to explore patent users' thoughts on this matter.

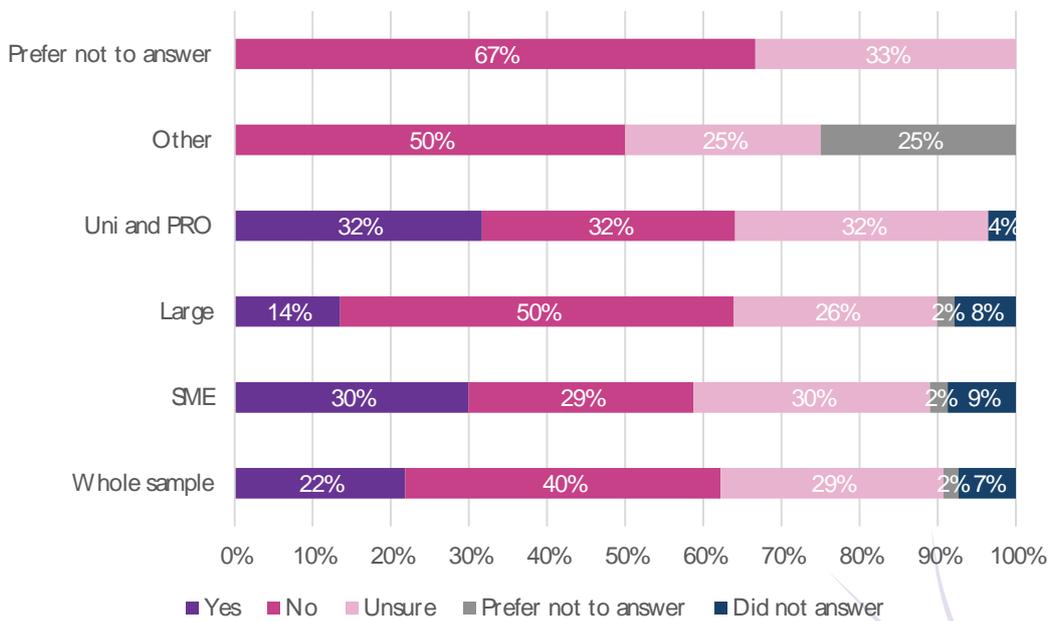
Interviewees were asked about their likely reactions to the possible introduction of a grace period in Europe. University interviewees reported that the introduction of a grace period in Europe would affect their publication and patenting strategies. With respect to publication, one respondent indicated that some research papers could be published six to nine months earlier if there were a grace period in Europe. With respect to patenting strategies, university interviewees reported that the greatest impact would be on inventions for which the market potential is less clear. For instance, one respondent indicated that it would use the grace period to explore the commercial values of around 40 per cent of its inventions (although we consider that this response is likely to be based on the interviewee's particular belief of how a European grace period would be designed and the statement might not hold under different designs). Interviewees also reported that the grace period would also allow more time for them to prepare better quality applications (potentially because of a belief that there would be a reduction in the pressure to file early such that the academic can disclose their invention if there were a European grace period).

SMEs and large companies that participated in interviews reported that a European grace period would have a similar impact on their behaviour and patenting strategies as that reported by universities (i.e. they would be more likely to disclose prior to filing). However, interviewees also noted that where they would also wish to secure protection in countries where the grace period is not available, the introduction of a grace period in Europe would not necessarily have an impact on their strategies in terms of early disclosure of inventions.

Interviewees from universities, SMEs and large companies all stated that harmonisation is a very important issue. Interestingly, despite the fact that large companies more frequently patent around the world than do SMEs and university, one interviewee from a large company stated that harmonisation may be less important for international companies as they may be more familiar with working with different patenting criteria than SMEs and universities.

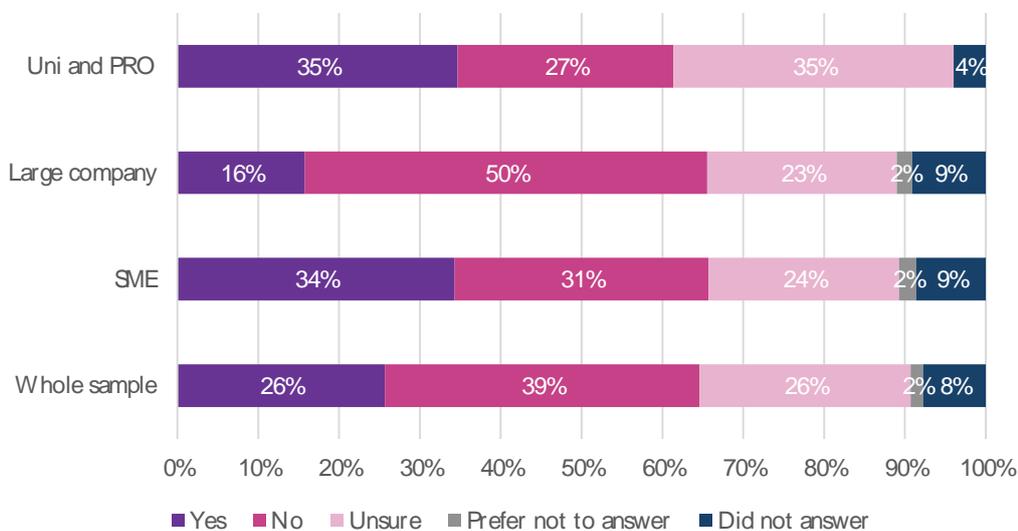
In order to assess the implications for pre-filing disclosure in more detail, we asked all survey respondents to indicate whether they would make pre-filing disclosures (more) regularly if a “safety net grace period” were introduced in Europe. Overall, more respondents would choose not to make pre-filing disclosures more regularly but a significant number would choose to do so. This result is common across respondents from Europe, the US and Japan, as the figure below shows, there are some important differences across different types of organisation. While a relatively small proportion of large companies would choose to make pre-filing disclosures more regularly, the views of SMEs and universities / PROs are rather mixed. Indeed, there is a reasonably even split for both types of organisation between those that would make pre-filing disclosures more regularly, those that would not, and those that are unsure how they would respond to a grace period in Europe.

Figure 8.1: Q29. If a “safety net grace period” were introduced in Europe, would you make pre-filing disclosures (more) regularly in Europe?



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 8.2: Q29. If a “safety net grace period” were introduced in Europe, would you make pre-filing disclosures (more) regularly in Europe? Answers presented for European respondents only



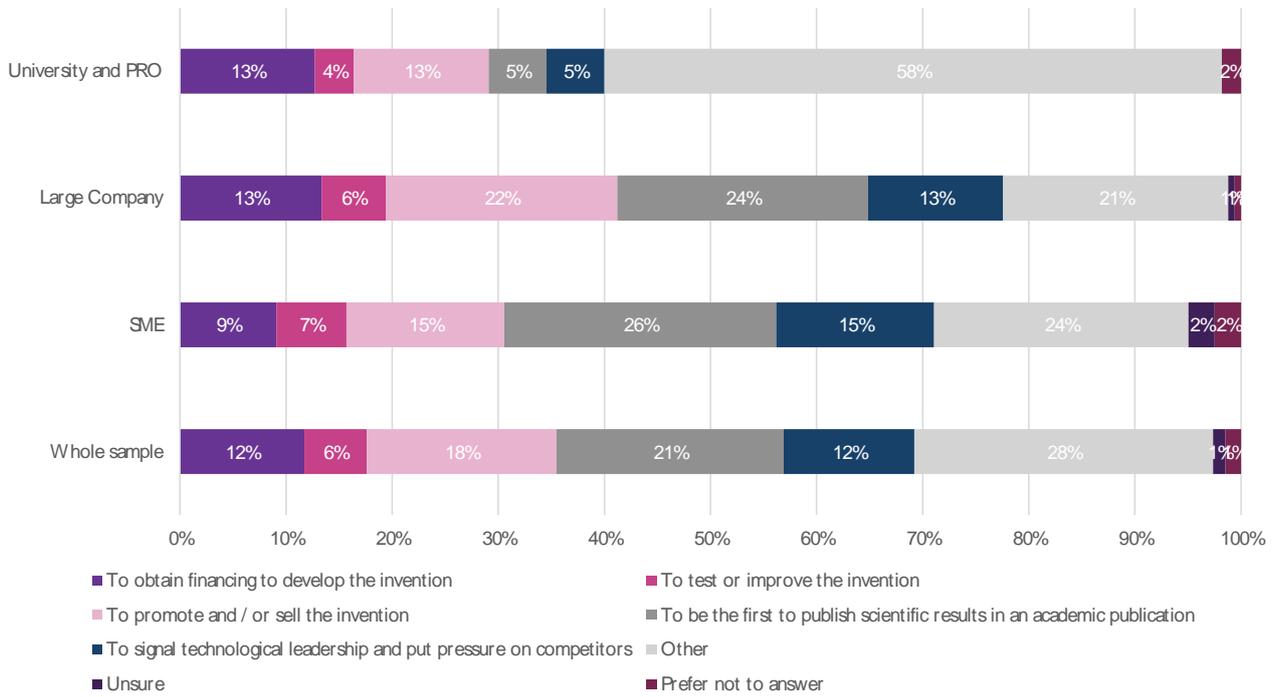
Note: Note: The figure presents answers to: “In principle, are you in favour of a grace period?”. The information presented in the above graph relies on 452 responses, 140 of which are SMEs, 209 large companies, 101 Universities or Public Research Organisations and 2 Prefer not to answer.

For those that would make pre-filing disclosures more regularly, the key reason given amongst the options specified was to be the first to publish scientific results in an academic publication, closely followed by a desire to promote and / or sell the invention (see Figure 8.3). These reasons are particularly important for large companies: no other option was supported by so many large companies, including the ‘other’ option. The desire to be first to publish is more important for SMEs than is the desire to promote / sell the invention while universities would typically make more regular pre-filing disclosures for other (unspecified) reasons.

There is much consistency amongst responses from Europe, the US and Japan. In particular, a desire to be the first to publish scientific results in an academic publication the key reason given amongst respondents from all countries of all the specific options while a desire to promote and / or sell the invention was the second most important reason.

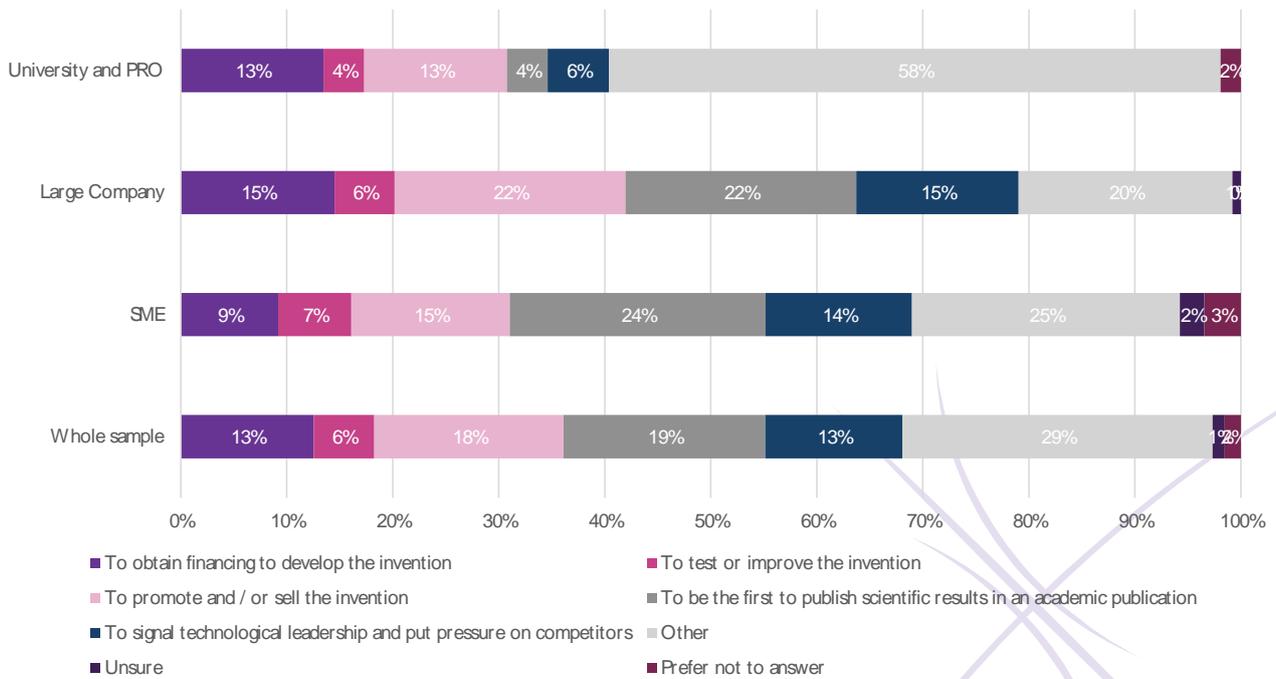
Finally the figures below provide a more qualitative assessment of the main reasons for, and methods of, for free-filing disclosers.

Figure 8.3: Q30. Why would you make pre-filing disclosures (more) regularly in Europe?



Note: The figure presented relies on the answers of 273 eligible respondents, 101 of which are SMEs, 129 large companies and 43 Universities or Public Research Organisations. Multiple answers were possible.

Figure 8.4: Q30. Why would you make pre-filing disclosures (more) regularly in Europe? Answers presented only for European respondents



Note: The figure presented relies on the answers of 189 eligible respondents, 64 of which are SMEs, 85 large companies and 40 Universities or Public Research Organisations. Multiple answers were possible.

The potential impact of the introduction of a “safety net” grace period in Europe on the frequency of pre-filing disclosures has been tested also formally through a probit model where the dichotomous dependent variable takes value of one if the respondent indicated that pre-filing disclosure would occur more frequently, and a value of zero if the respondent indicated that pre-filing disclosure would not occur more frequently (respondents that answered “Unsure”, or “Prefer not to answer” are excluded from the analysis).

The regression results reported below indicate that pre-filing disclosure would occur more frequently among universities / PROs and SMEs (relative to large companies), but less frequently among Japanese respondents (relative to European and US respondents).

Table 8.1: Likelihood of making pre-filing disclosure more regularly if the “safety net” grace period were introduced in Europe?

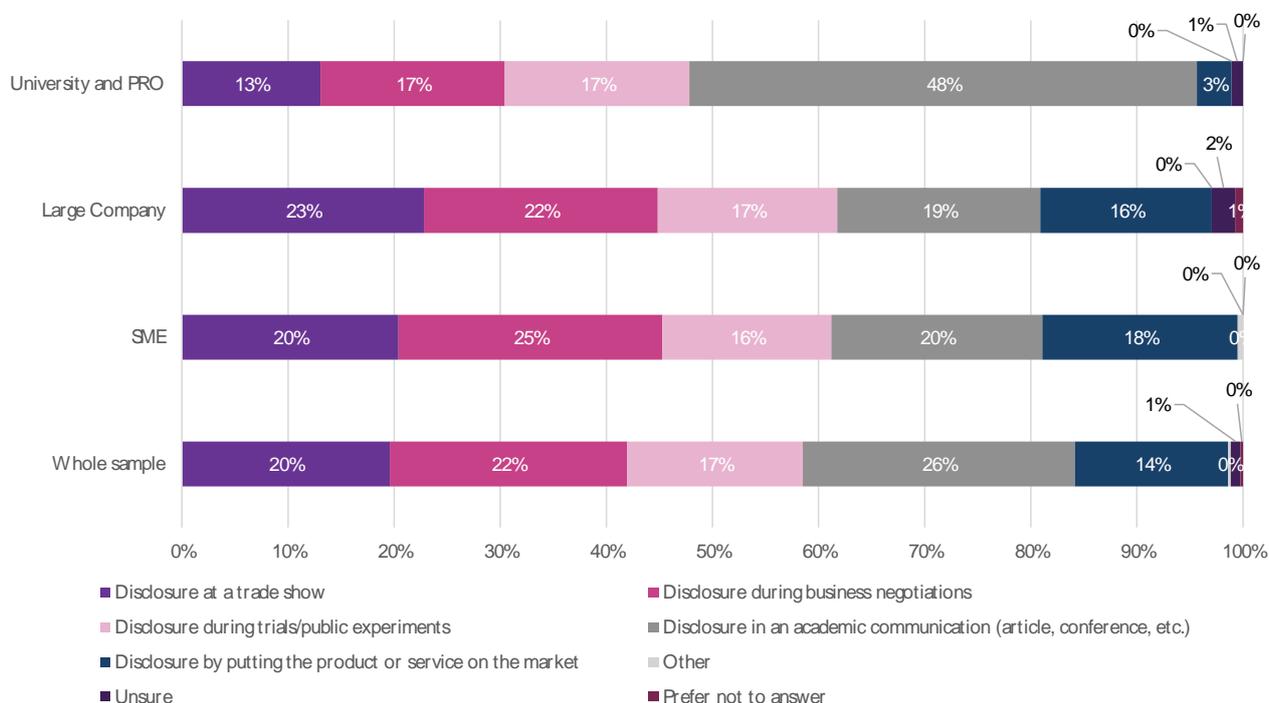
Dependent Variable: More frequent pre-filing disclosure		
Variable	Marginal probability coefficient	Std. Error
SME	.2466	.0538***
University & PRO	.3101	.0674***
US user	.0215	.0579
JP user	-.2272	.0530***
Electrical engineering	.0665	.1070
Instruments	.1541	.1057
Chemistry	-.1221	.0904
Mechanical engineering	-.0505	.0933
Previous GP experience	.0048	.0501
Log likelihood	-274.8716	
LR statistic	82.7672	
Prob(LR statistic)	0.0000	
Total obs	487	
Obs with Dep=0	315	
Obs with Dep=1	172	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients. ***=significant at the 1% level; **=significant at the 5% level; *=significant at the 10% level.

As shown in Figure 8.5, the most popular method of disclosure amongst the full sample of respondents would be disclosure in an academic communication, followed by disclosure during business negotiations. This finding holds across Europe, the US and Japan with the exception that Japanese respondents would be slightly more likely to disclose by putting the product or service on the market or at a trade show than during business negotiations.

As shown in the figure below, however, there are significant differences between the likely disclosure methods that would be used by SMEs, large companies and universities / PROs. In particular, while SMEs and large companies would be most likely to disclose during business negotiations or at a trade show, the most likely method of disclosure for a university / PRO would be through an academic publication.

Figure 8.5: Q31. How would you disclose your inventions to the public before filing your patent applications in Europe?



Note: The information presented in this figure relies on 239 eligible responses, 102 of which are SMEs, 87 large companies and 50 Universities or Public Research Organisations.

8.1.2 Behavioural adjustments according to grace period design

Respondents were asked to consider their actions if the definition of the grace period adopted in Europe protected them against any interference from third parties as a result of their pre-filing disclosure. Figure 8.6 shows that the most popular response was to try generally to keep the invention secret and try to file a patent application as quickly as possible. This finding is consistent across respondents from the US, Japan and Europe but it should also be noted that a substantial number of respondents from each of these groups reported that they would use the grace period either occasionally (whole sample: 23%) or more often (whole sample: 12%).

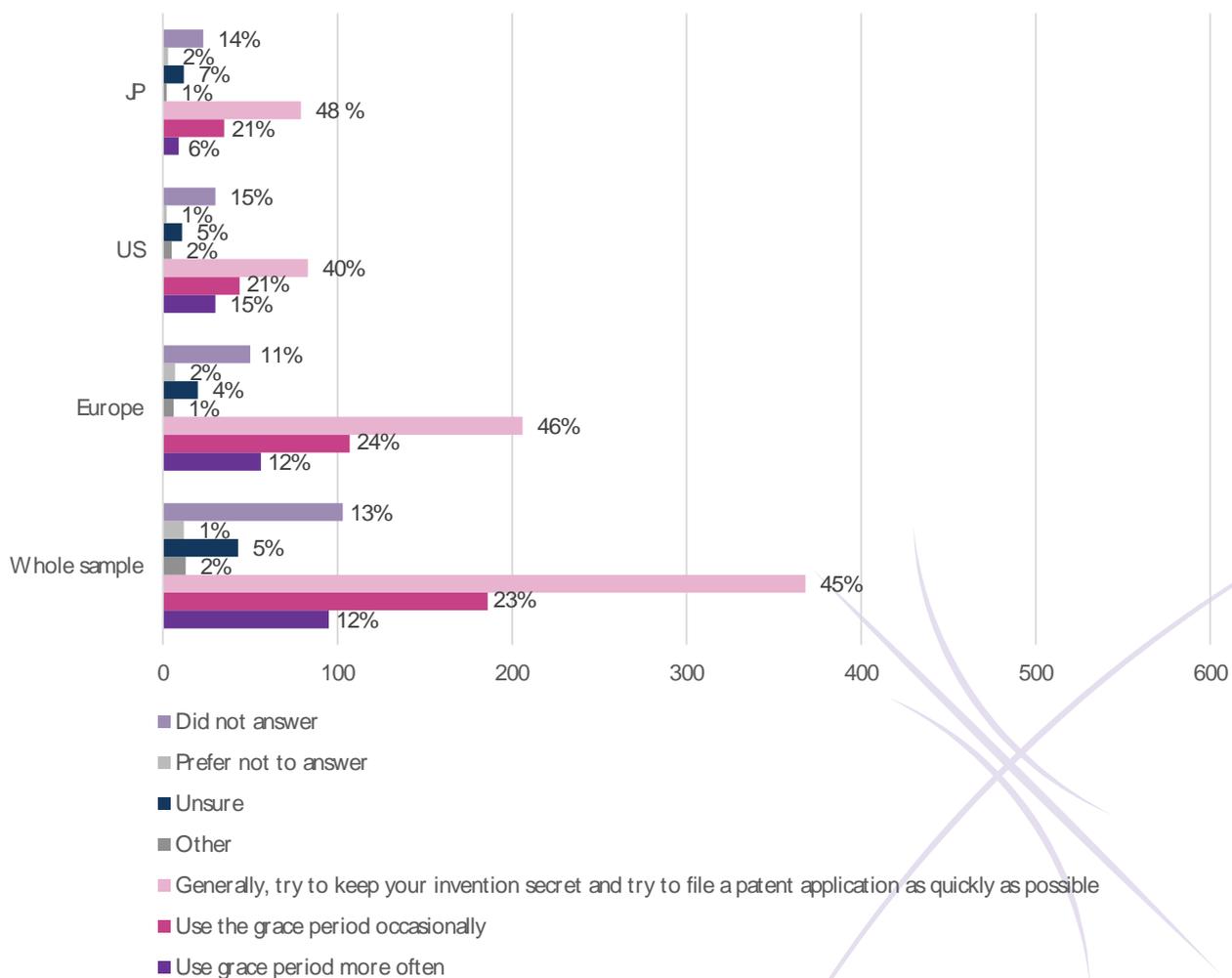
We then asked respondents to consider their actions if a grace period in Europe were established such that disclosures prior to the filing date by independent inventors of their own inventions destroyed the novelty of an invention, as they do today under the Japanese grace period. Figure 8.7 shows that responses under this scenario were significantly more clustered than under the scenario in which the grace period would protect against any interference from third parties as a result of a pre-filing disclosure. In particular, a substantial majority of respondents from the US, Japan and Europe would seek to employ secrecy in a scenario where disclosure by independent inventors would destroy novelty.

Comparing the results of these two scenarios suggests that a policy decision of the treatment of disclosures of independent inventions could have an appreciable impact on the extent to which the grace period would be used in Europe. In particular, it suggests that organisations would be less likely to make an active choice to use the grace period if disclosures by independent inventors of

their own inventions prior to the filing date would be novelty destroying. It can thus be concluded that this element of risk that an independent disclosure may form prior art against a subsequent application is likely an essential element of a safety-net definition of the grace period.

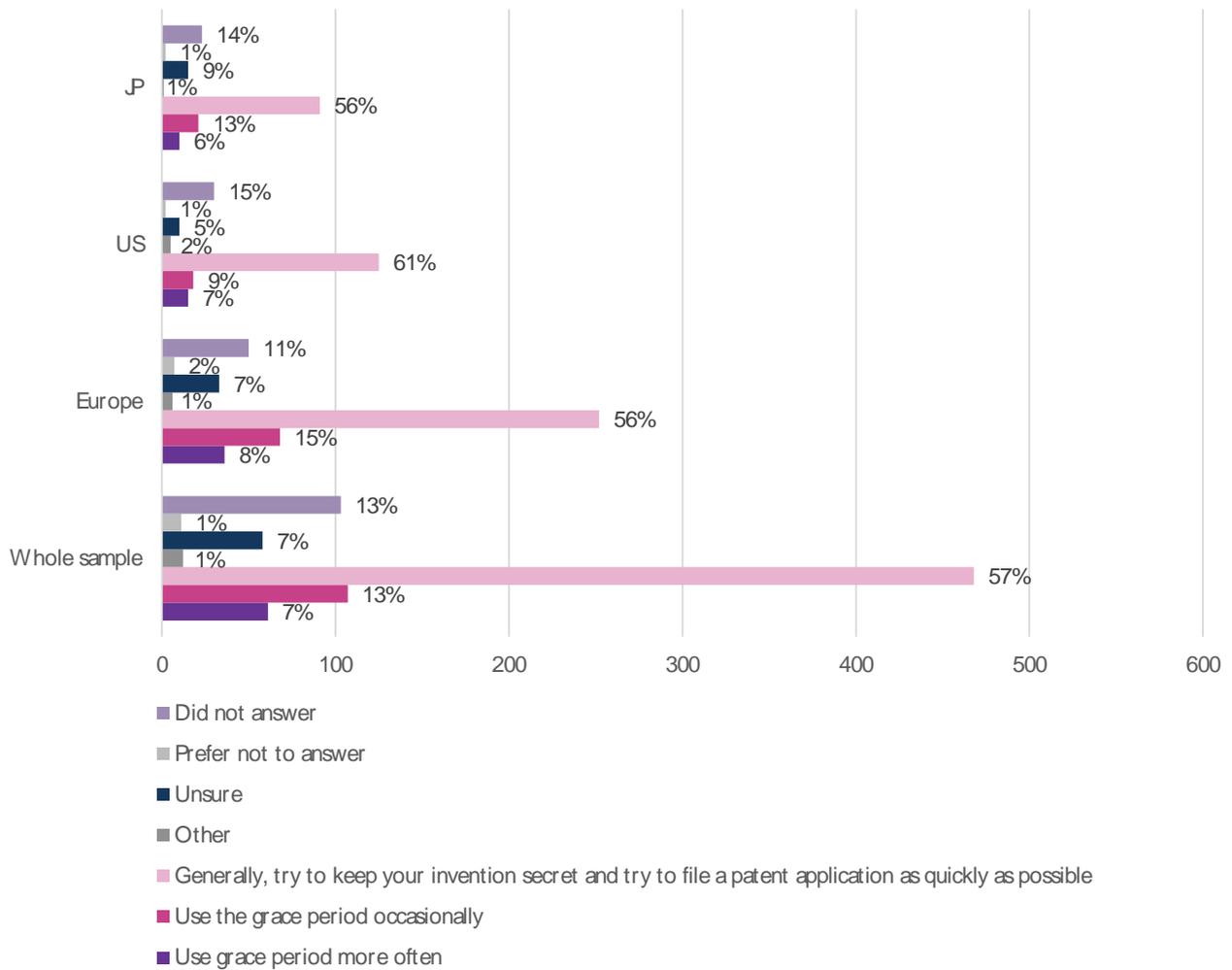
In addition to scenarios in which the treatment of independent disclosures was varied, respondents were also asked to indicate their likely response if a grace period were adopted in Europe where prior user rights could be obtained by third parties acting in good faith, having used the invention, the knowledge of which was acquired as a result of the applicant's invention having been made public. Figure 8.8 shows that, under this scenario, a substantial majority of respondents from all countries would choose to try to keep their invention secret and few organisations would actively choose to use the grace period, with only 4% of overall respondents reporting that they would use the grace period more often than they do now. These results suggest that the inclusion in the definition of a safety-net grace period of prior user rights being able to arise even where knowledge of the invention has been derived from the applicant, provided this occurred in good faith, would be the most effective deterrent preventing pre-filing disclosure where applicants would have a choice.

Figure 8.6: Q32. If a grace period were adopted in Europe and if it protected you from any interference from third parties as a result of your pre-filing disclosure, which of the following would you do? Responses by country of origin



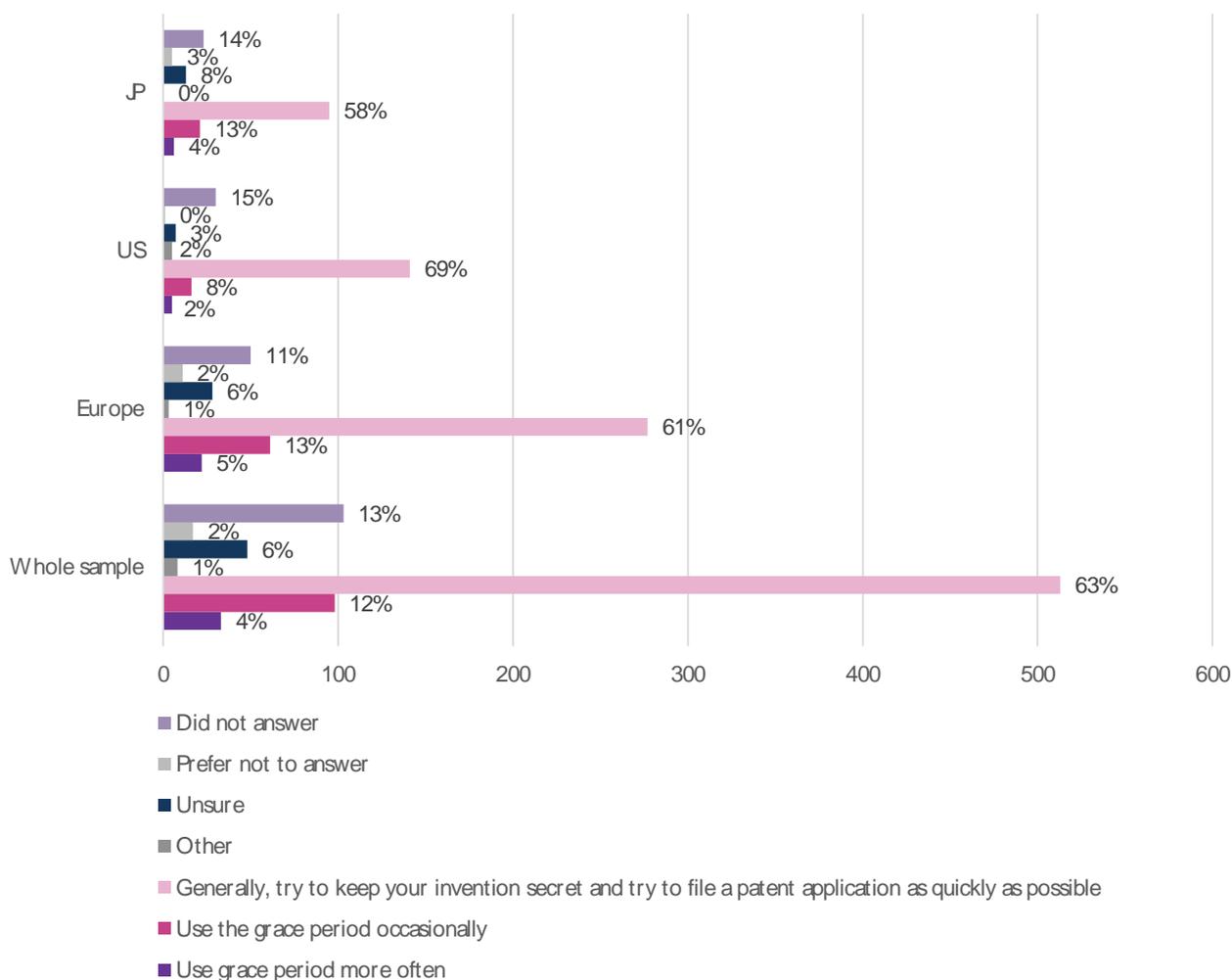
Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Figure 8.7: Q33. If a grace period were adopted in Europe where disclosures prior to the filing date by independent inventors of their own inventions destroyed the novelty of your invention, which of the following would you do? Responses by country of origin



Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan

Figure 8.8: Q34. If a grace period is adopted in Europe where prior user rights meant continued use of invention by third parties, what would you do? Responses by country of origin



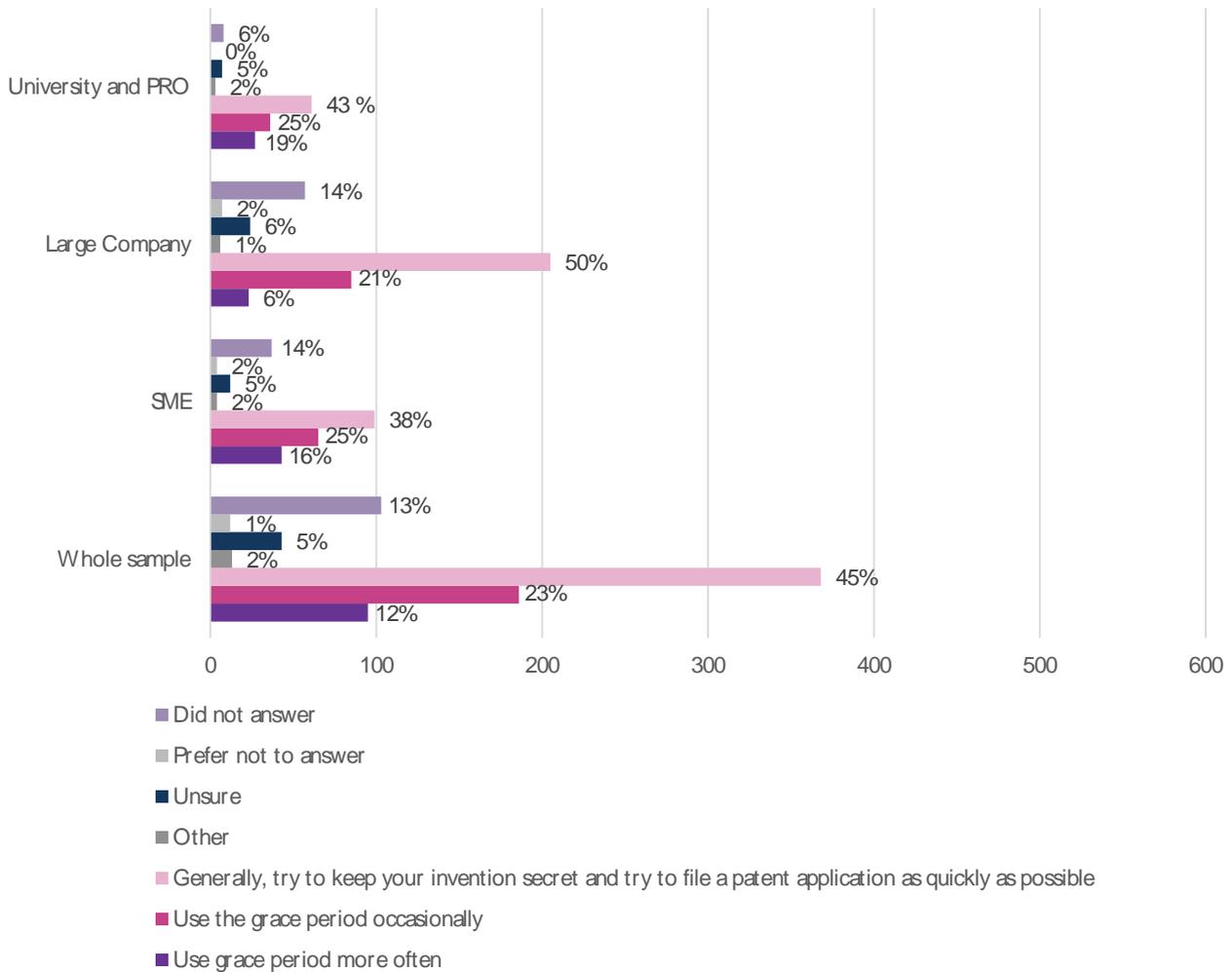
Note: This figure is based on 820 responses, 452 from Europe, 205 from the US and 163 from Japan.

Breaking down responses to these questions by type of organisations a similarly consistent picture emerges. Figure 8.9 shows that if the definition of the grace period adopted in Europe protected them against any interference from third parties as a result of their pre-filing disclosure, the most popular response amongst all types of organisation was that they would generally to keep the invention secret and try to file a patent application as quickly as possible. It should be noted, however, that a non-trivial proportion of respondents from each of these groups either did not answer the question, stated that they were unsure or indicated that they would prefer not to answer the question.

In line with the country-level discussion presented above, Figure 8.10 shows that if a grace period were adopted in Europe where disclosures prior to the filing date by independent inventors of their own inventions destroyed the novelty of an invention, an even greater proportion of respondents from all types of organisation would generally to keep the invention secret and try to file a patent application as quickly as possible. Furthermore, Figure 8.11 indicates that if a grace period is adopted in Europe where prior user rights meant continued use of invention by third parties, a

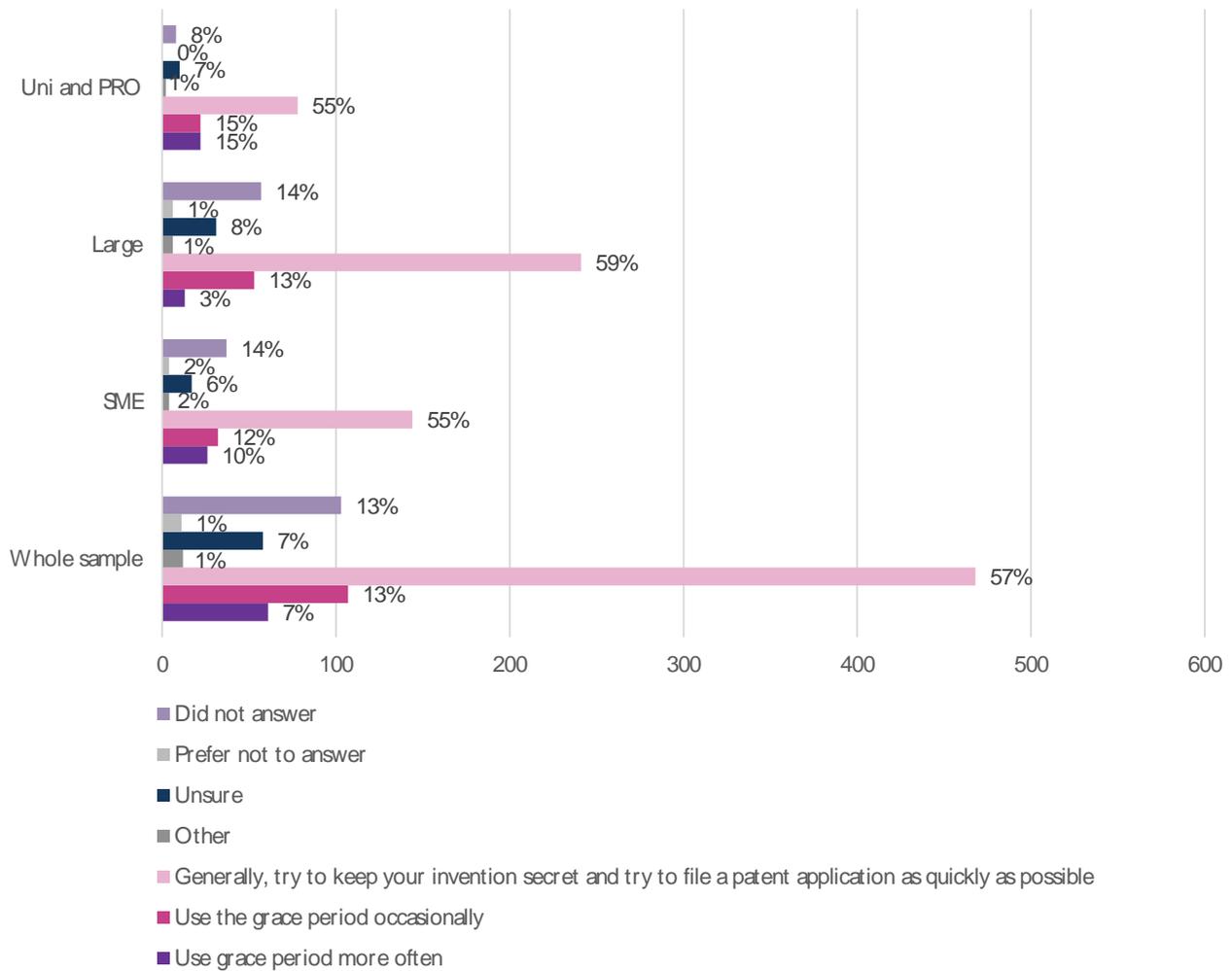
substantial majority of respondents amongst all types of organisation would generally to keep the invention secret and try to file a patent application as quickly as possible.

Figure 8.9: Q32. If a grace period were adopted in Europe and if it protected you from any interference from third parties as a result of your pre-filing disclosure, which of the following would you do? Responses by type of organisation.



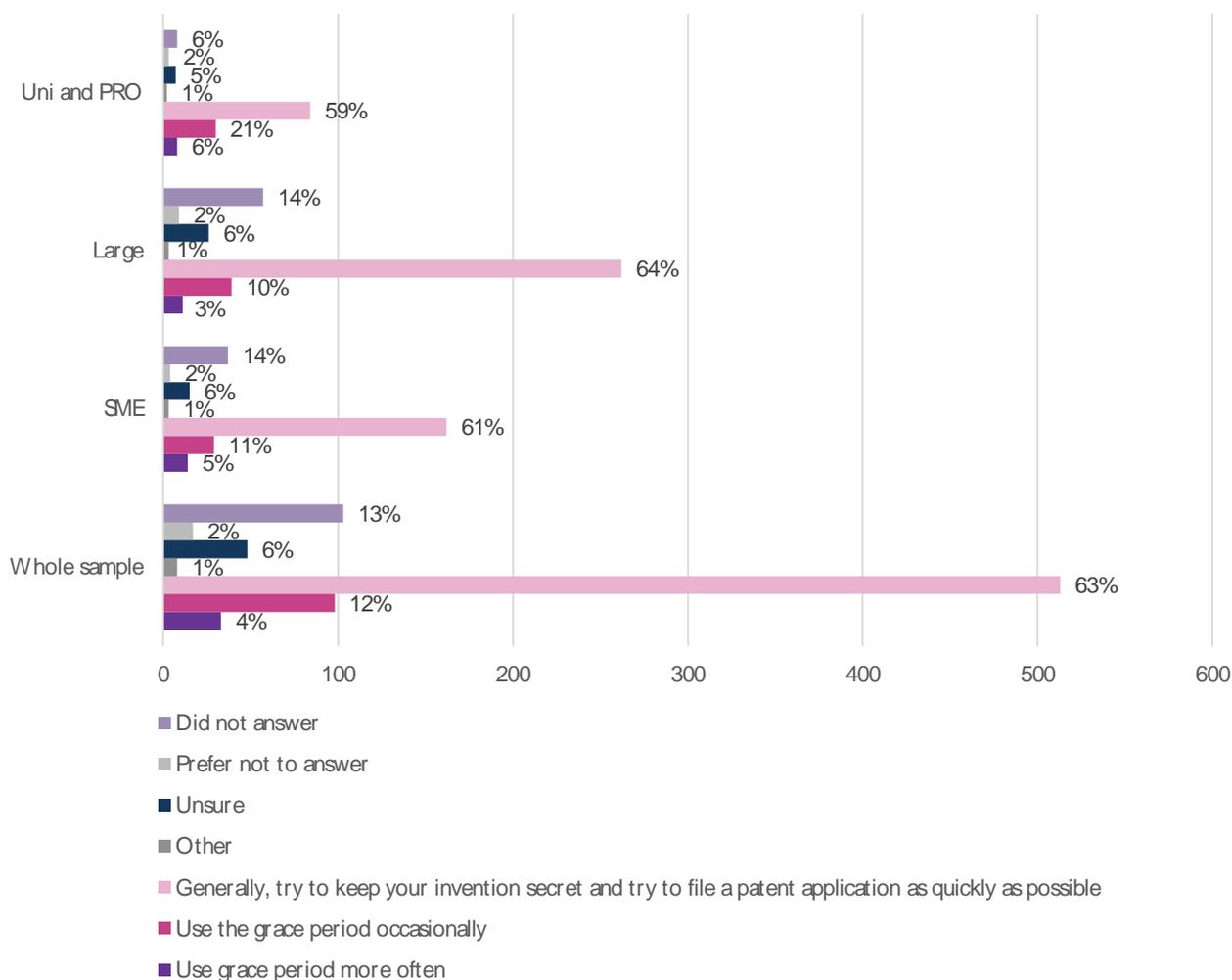
Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 8.10: Q33. If a grace period were adopted in Europe where disclosures prior to the filing date by independent inventors of their own inventions destroyed the novelty of your invention, which of the following would you do? Responses by type of organisation



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

Figure 8.11: Q34. If a grace period is adopted in Europe where prior user rights meant continued use of invention by third parties, what would you do? Responses by type of organisation



Note: Number of observations for the above graph are, 264 SMEs, 407 large companies, 142 Universities and Public Research Organisations, 4 Other, 3 Prefer Not to Answer and 820 for the whole sample.

The findings reported in the figures above have been analysed more formally through an econometric model. The analysis attempts to explain how the likelihood of using the grace period is affected by the degree of protection provided under different grace period assumptions, and after controlling for certain patent users' characteristics. More specifically, the dependent variable is defined as follows:

Use the grace period at least occasionally: for each of the three scenarios illustrated in the figures above (i.e. a grace period with no interference from third party, a grace period in which disclosure from independent inventions is novelty destroying, a grace period with prior user rights granted) the dependent variable is defined as a dummy variable taking value of one if the respondent states that he would use the grace period either occasionally or more often, and a value of zero if the respondent states that he would try to keep the invention secret and try to file as soon as possible (respondents that answered "Other", "Unsure", or "Prefer not to answer" were excluded from the analysis).

The main explanatory variables of interest are represented by the specific scenarios concerning the degree of protection provided under the grace period, as explained below.

- **Scenarios:** In order to test the extent to which different degrees of protection provided under the grace period affect the likelihood of using the grace period, we have considered the grace period scenario with no interference from third parties as a baseline scenario, and we have characterised the two remaining scenarios (i.e. is novelty-destroying disclosure from independent inventions, and presence of prior user rights) by a pair of dummy variables (referred to as “Dis. ind. inv. novelty destroying” and Prior user rights granted, respectively, in the results table below).

We have then explained the dependent variable through a probit model in panel format in which the “time” dimension identifies a particular scenario.²⁰ The results of the regression (in which the typology of user, the geographical origin, and previous experience in the use of the grace period are also controlled for) are provided below.

Table 8.2: Likelihood of using the GP under different GP scenarios

Dependent Variable: Use the GP at least occasionally		
Variable	Marginal probability coefficient	Std. Error
SME & individual	.1188	.0276***
University & PROs	.2003	.0341***
US user	-.0688	.0278**
JP user	.0055	.0310
Electrical engineering	-.0486	.0450
Instruments	-.0386	.0442
Chemistry	-.1564	.0405***
Mechanical engineering	-.0274	.0438
Previous GP experience	.0565	.0243**
Dis. ind. inv. novelty destroying	-.1585	.0231***
Prior user rights granted	-.2174	.0223***
Log likelihood	-1054.121	
LR statistic	154.7096	
Prob(LR statistic)	0.0000	
Total obs	1831	
Obs with Dep=0	1266	
Obs with Dep=1	565	

Note: The reported coefficients are marginal probability effects while the remaining statistics refer to the underlying probit model with slope coefficients.

The main findings of the table above can be summarised as follows:

²⁰ This might alternatively be referred to as a pooling regression.

- If the grace period were introduced in Europe — and irrespective of its defining features — SMEs and universities/PROs would be significantly more likely to use the grace period than would large companies.
- US users of the European patent system are, all else being equal, less likely to use the grace period than are Japanese and European users.
- Patent users that file the majority of patents in the Chemistry technological cluster are — all else being equal — less likely to use the grace period.
- Having had previous experience in the use of the grace period would be associated with an increased likelihood of using it also in Europe.
- Compared to a baseline scenario in which the grace period provides protection from the interference of third parties, both the scenario in which disclosure from independent inventions is novelty destroying and the scenario in which prior user rights granted have the effect of decreasing the likelihood of using the grace period. The impact on the likelihood of using the grace period at least occasionally is significantly stronger for prior user rights than for disclosure from independent inventions being novelty destroying.

In order to test whether the discouraging effects of novelty-destroying disclosure of independent inventions and prior user rights on the likelihood of using the grace period are different for different types of patent users, the regression of Table 8.2 has been re-estimated separately on the following sub-samples of respondents: large companies; SMEs; universities and PROs; and users from Europe, US, and Japan. The coefficients associated with the scenario in which the disclosure of independent inventions is novelty destroying, and to the scenario in which prior user rights are granted are reported in the table below. From these results we can conclude that:

- For all types of patent users, the grant of prior user rights would seem to have a greater effect in discouraging the use of the grace period in Europe than the novelty-destroying nature of disclosure of independent inventions.
- The discouraging effect on the use of grace period in Europe (irrespective of whether this is attributable to the grant of prior user rights or the fact that disclosures of independent inventions is novelty destroying) would be greater among SMEs (relative to large companies and universities and PROs), and among US patent users (relative to European and Japanese users).

Table 8.3: Selected marginal effects of econometric models on different sub-samples

Sub-sample	Disclosure of independent invention is novelty destroying (p-value)	Prior user rights are granted (p-value)
SMEs	(-0.22) ***	(-0.29) ***
Large companies	(-0.12) ***	(-0.18) ***
Universities and PROs	(-0.15)**	(-0.20) ***
Europe	(-0.14) ***	(-0.20) ***
US	(-0.23) ***	(-0.30) ***
Japan	(-0.10) *	(-0.13) **

Note: All reported marginal effects in the above table are statistically significant at the 10% level. For p-values less than 0.01 *** are assigned, for values less than 0.05 but greater than 0.01 ** are assigned and for values less than 0.1 but greater than 0.05 * is assigned.

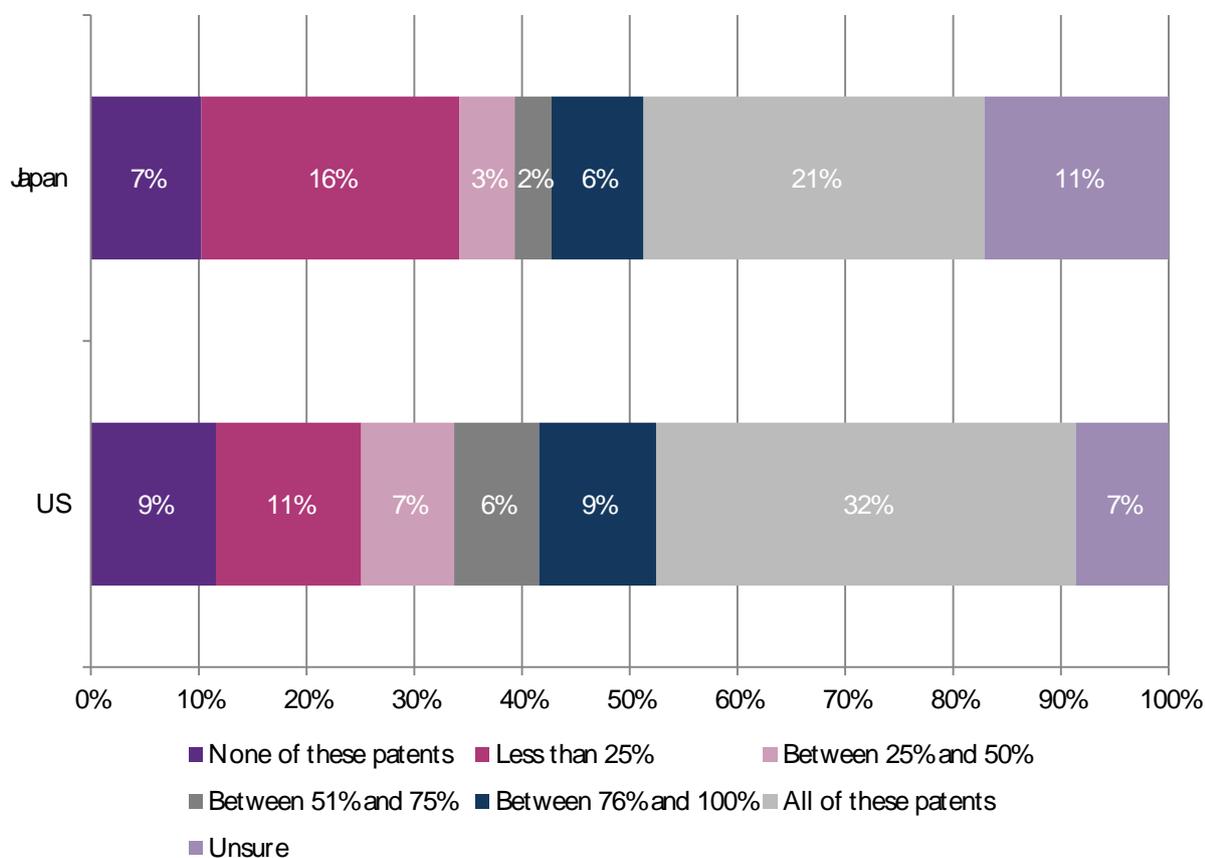
8.2 Possible increase in filings

If the grace period were introduced in Europe, an increase in patent filings might be expected because it would then be possible for applicants that made use of a grace period in another country to also file for patent protection in Europe. At present, the possibility of filing in Europe is denied where a grace period has been used in another country, because the invention is no longer considered to meet the patentability requirement of novelty. It is also important to understand the extent to which those that patent in Europe would make use of the grace period if it were available and so to analyse the extent to which applicants would change their behaviour in the presence of a grace period.

In this context, we asked those respondents that have previously used the grace period in at least one country to report the percentage filings to the USPTO and JPO in the last five years that had made use of the grace period (see Figure 5.3 and accompanying discussion).

To understand the extent to which applications invoking the grace period in the US or in Japan might be filed at the EPO under the hypothesis of the introduction of a grace period in Europe, we asked respondents to indicate the percentage of graced patents which would also have been filed in Europe, had a safety-net grace period been available. Figure 8.12 presents a mixed picture although the most popular response amongst those that had made use of grace periods in either the US or Japan was that all counterparts to all those applications would have been filed in Europe. Amongst Japanese respondents there is some evidence of a bimodal distribution: respondents would choose either to file counterpart patent applications for all of these applications in Europe, or only in fewer than 25% of cases. This distribution is likely to reflect differences in patenting strategies in Japan which are directly related to structural differences in the patent system (*e.g.* filing in Japan is cheaper than filing in Europe, but the definition of unity of invention may be somewhat broader in Europe, so that applications are often filed in Europe covering several inventions for which separate patents may have been granted in Japan).

Figure 8.12: Q24&Q26. What percentage of these patents would also have been filed in Europe, had a “safety net grace period” been available there?



Note: The information presented in the above graph relies on 270 responses for the US, 3 of which were “Prefer not to answer” and 118 responses for Japan, 1 of which was “Prefer not to answer”.

The questions underpinning Figure 5.3 and Figure 8.12 were used in combination with data on the number of patents that respondents in our sample had filed in the US and Japan in the last five years²¹, to obtain a tentative quantification of the number of US and Japanese graced patents that might be filed at the EPO were a safety net grace period to be introduced. The way in which this data was constructed is explained below.

- **Actual data on total patent filings to the USPTO and JPO in the last five years:** these data were extracted from Patstat and provided by the EPO. After a matching exercise we were able to match US and JP patent filings data to 769 of the 820 respondents in our sample.
- **Estimate of the actual number of graced US and Japanese patents:** these figures were constructed by multiplying actual filing data figures by the central percentage value of patents that used the grace period in the US or Japan in the last five years as reported by respondents (see Figure 5.3). So, for example, if a respondent stated that between 10% and 20% of the patent filed in the last five years were graced, then the number of patent filings was multiplied by 0.15.

²¹ The data was extracted for the PATSTAT 03/2014 database.

- **Estimate of the actual the number of graced US and Japanese patents that would have been filed at the EPO:** these figures were constructed by multiplying the estimate of the number of graced patents (in the US or Japan) by the central percentage value of patents that would have been filed also at the EPO as reported by respondents (see Figure 8.12).

In the construction of these estimates we included only those responses for which: (1) we had US / Japan patent filing data; and (2) for which we had a valid answers to the survey question on the percentage of patents that used the grace period in the US or Japan, and to the question on the percentage of graced patents that would have been filed also at the EPO. (So, for example, respondents for which we had US patent filings data but who did not provide an answer as to which percentage of these filings had used the grace period in the US were excluded for the purpose of the analysis.) We also checked for data inconsistencies. For example there were some instances in which respondents stated a positive percentage of patents filed in the last five years that had used the grace period, but actual data of patent filings to the USPTO and JPO provided by the EPO indicated zero patents being filed. Such instances were identified and excluded for the purpose of constructing the data.

In Table 8.4 we report, for different typologies of users, estimates of the absolute number of patents (within our sample) that used the grace period in the US or Japan and that would have been filed also in Europe if a safety net grace period had been available. We also report the figures expressed as shares of patents granted due to the benefit of a grace period that each type of user would have also filed in Europe (Table 8.5), and as shares of patents granted due to the benefit of a grace period which would have been filed in Europe according to the type of patent user (Table 8.6).

It must be emphasised that these figures are only a lower bound to the total number of patents that would be filed in Europe under a safety-net grace period as additional graced filings can be anticipated from organisations that have never filed in the US or Japan, or have never used the US or Japanese grace period.

Table 8.4: Absolute number of US and JP graced patents that would be filed in Europe

	Number of US and JP patent filings (last 5 years)	Number of patents filings that used the GP in US or JP	Number of patents that used the GP in the US or JP and that would have been filed also in Europe
Whole sample	60,273	1,124	471
University & PROs	6,118	701	258
SME	3,075	26	15
Large company	51,080	397	197

Table 8.5: Share US and JP graced patents that would be filed in Europe (for each type of user)

	Number of US and JP patent filings (last 5 years)	Percentage patents filings that used the GP in US or JP	Percentage of patents that used the GP in the US or JP and that would have been filed also in Europe
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Whole sample	100%	1.9%	0.78%
University & PROs	100%	11.5%	4.2%
SME	100%	0.8%	0.5%
Large company	100%	0.8%	0.4%

Table 8.6: Share US and JP graced patents that would be filed in Europe (across types of users)

	Number of US and JP patent filings (last 5 years)	Percentage patents filings that used the GP in US or JP	Percentage of patents that used the GP in the US or JP and that would have been filed also in Europe
Whole sample	100%	100%	100%
University & PROs	10%	62%	55%
SME	5%	2%	3%
Large company	85%	35%	42%

From Table 8.5 we notice that universities and PROs have both the largest share of graced patents in their portfolios (i.e. 11.5%) and would have filed the largest share of patents in Europe invoking the grace period (4.2%). In contrast, large companies have (next to SMEs) the smallest share of graced patents in their portfolios (0.8%), and only a small fraction (0.4%) of their portfolio would have resulted in graced filings in Europe.

However, it is interesting to see that whilst half (i.e. 0.4%/0.8%) of large companies' graced patents would have been filed also in Europe, only about 37% (i.e. 4.2%/11.5%) of universities' graced patents would have been filed in Europe. This is consistent with the idea that large companies have access to a wider geographical market, and therefore, provided that they decide to use the grace period, are also likely to invoke it multiple jurisdictions. By virtue of the large number of patent filings, large companies would have accounted for almost the same percentage of graced patents filed in Europe (i.e. 42% as indicated in Table 8.6), compared to universities and PROs (i.e. 55% as indicated in Table 8.6).

9 Assessment

This section assesses the key costs and benefits of introducing a grace period in Europe.

As noted in Chapter 3, the pros and cons of the grace period differ by stakeholder and, even where two stakeholders experience the same benefit, the scale of impact may differ significantly. A detailed breakdown of pros and cons by stakeholder was presented in Table 3.1 but we consider that it is appropriate to group the effects slightly differently for the purposes of assessing costs and benefits. In particular, we will consider the extent to which the costs and benefits presented in the table below can be assessed, either quantitatively or qualitatively.

Table 9.1: Key potential benefits and costs of a European grace period

Positive impact	Negative impact
<p>No risk of accidental premature/incautious disclosure destroying novelty</p> <p>Grace period allows for additional time for: Market screening; Presenting at trade fairs; and Testing/improving and consulting on the invention / product.</p> <p>Joint-ventures are easier</p> <p>Greater ease to obtain financing</p>	<p>Increase in legal uncertainty, disputes over entitlement and prior art</p> <p>Time frame for clarifying status of information extended from 18 to up to 30 months</p> <p>Increased litigation costs</p> <p>Possible postponement of the moment when an invention would fall into the public domain, (assuming that using the grace period resulted in a later filing date than would be the case without a grace period in Europe).</p>
<p>Earlier research dissemination</p> <p>Inventions can be disclosed in conferences</p> <p>There may be more scientific publications</p>	<p>Complication of the patent system</p> <p>Search and examination more complex: Reduction in operational efficiency at the patent office</p> <p>Lengthening of the granting procedure due to extra communication(s) with the applicant becoming necessary</p>
<p>Possibility to reduce costs of patenting by selecting the most promising inventions</p>	<p>Increases in the cost of securing freedom to operate opinions</p>
<p>Harmonisation of international patent law with respect to grace periods, (but only if all other countries also agree on an international norm and align their laws)</p>	<p>Increase of risk of unintentional infringement by competitors</p> <p>Chilling effect on rapid introduction of new technology</p> <p>Decrease of early investment decisions due to uncertainty as to status of IP rights</p>

Note: Based on Table 3.1.

In considering the potential for assessing these effects we focus on the case of a safety-net grace period. Focussing on one specific definition allows the analysis to be kept tractable whilst also permitting an analysis of the implications of varying a given element of the safety-net definition. The implications of varying several elements of the definition at the same time are not explored.

9.1 Positive effects

9.1.1 No risk of accidental premature/incautious disclosure destroying novelty

In order to assess the positive effects arising from the elimination of the risk of accidental premature/incautious disclosure destroying novelty, one needs to explore how important this risk is for the different stakeholders.

The risk of such disclosures is, in principle, more pertinent for organisations where weaknesses in internal information flows can lead to accidental dissemination to the wider public, thereby destroying the novelty of the applicant's invention. Thus, this can be perceived as important for large companies, SMEs and universities which employ a number of individuals whose behaviour needs to be controlled in order to avoid such disclosures.

The internal processes of the organisation in question, if effective, could alleviate such concerns. Large companies, having more resources at hand and having extensive market experience, are expected to have developed internal mechanisms to deal with the issue and could even have specialised departments in place. On the other hand, they employ more staff whose skill level will vary across company functions, therefore increasing the risk of accidental disclosures compared to a company employing fewer staff. These conflicting forces are explored through a number of questions in our survey.

One of the first aspects explored is large companies' perception, regarding protection of inventors from any kind of pre-filing disclosure, of whether this is accidental or not. In particular, while the majority (64%) agrees that the grace period should be designed in a way that pre-filing disclosure should not prohibit the grant of patent rights, this belief is more pronounced among SMEs and universities who also support this notion (72% among SMEs and 84% among universities). The fact that universities are the strongest supporters of this notion comes as no surprise as they have less market exposure compared to large companies and this can imply that the appropriate mechanisms to avoid premature/incautious disclosure have not been fully developed; additionally, universities have strong incentives to disclose their findings in academic venues in order to benefit from the process of peer-reviewing.

This situation, however, is reversed when looking at the motivating factors behind different organisations' actual use of the grace period in the past. Necessity is the reason most often explaining why the grace period was used. While necessity is not identical to accidental disclosure, as it encompasses other causes such as breach of confidence, it is still an important indicator. Furthermore, out of the three types of organisations, large companies are the ones that cite "necessity" as their motivation for using the grace period the most frequently (38% of all motivating factors).

A more appropriate measure of the importance of the risk of accidental disclosure is the frequency with which it occurs when compared to other means of disclosure such as trade shows and public experiments. For SMEs and large companies, error is the most frequent source of disclosure by some margin. In particular, in more than one out of three cases error was the cause of large companies' inventions being disclosed to the public.

Organisations that have not used the grace period for patents that they filed in the past have a very different perception of things. While a slight majority of SMEs and large companies and a significant majority of universities have felt the need to file a patent application after disclosure, according to the survey responses, this is not primarily due to the pre-filing disclosure having occurred in error. To be more specific, error and breach of confidence are the two least frequent manners of disclosure for this category of organisations.

9.1.2 Possibility of activity resulting in disclosure before filing

The presence of a grace period may enable inventors to reap a number of benefits from disclosing their invention while at the same time not destroying its novelty. These benefits could be the potential improvement, correction or extension of an invention that can occur through market screening (depending on the definition of the grace period) or consultation with peers (which are less hazardous as one can control disclosure and also possibly use confidentiality agreements to prevent accrual of prior user rights). SMEs and large companies can test the marketability of their product and adjust it accordingly while universities can more efficiently test the grounds for potential Joint-Ventures with the private sector.

A grace period can be utilised for market screening and implementing valuable feedback and/or conclusions from the screening can also create considerable benefits for investors in these products/inventions. One would expect that the initial market screening and the improvement of the invention can have beneficial impacts on both the investors' understanding of the underlying product as well as their chances of successful and profitable market entry.

We can assess these potential impacts by exploring the responses of our survey respondents in questions justifying disclosure. For respondents who have used the grace period in the past, testing or improving an invention was the second most frequently quoted motivation for using the grace period for SMEs while it was also important for large companies and universities.

While this motivation for using the grace period does not appear to be as strong as that of accidental disclosure, there are two additional motivations which can be seen as complementary to the motivation of testing/improving the invention. These are the motivation to obtain financing and the motivation to promote/sell the invention. These three motivations feed each other as improvements make it more likely to obtain financing, financing makes it more likely to lead to improvements with the same bilateral relationship holding true for improvements and the likelihood of successfully selling the product.

When these three motivations are viewed in conjunction they reinforce the perception of importance attributed to the stand-alone motivation of testing/improving the invention. Together, they account for around half the stated motivations for SMEs while they are slightly less frequent (around one third of the aggregate stated motivations) among large companies and universities.

This result is to be expected as large companies and universities are primarily motivated by necessity and, at the same time, universities also have the rather strong incentive of being the first to publish scientific results (31% of aggregate stated motivations). SMEs, meanwhile, are more likely to wish to disclose in order to test.

In order to assess the benefits of this category for the different stakeholders it is also important to identify the extent to which disclosures would have been made for the above mentioned reasons among respondents who have never used the grace period.

Disclosures at trade shows, in academic communications, by putting the product in market and during trade negotiations, are in aggregate the four main ways through which disclosure happened for those respondents who have not used the grace period. These four types of disclosure are all strongly related to this category of benefits and could lead us to assign a high potential benefit for this type of respondents.

The most representative manner in which to assess the level of benefits experienced in this category is to examine respondents' motivations to make pre-filing disclosures more regularly if a hypothetical safety-net grace period regime were introduced in Europe. From the responses given in the survey, it appears that testing/improving the invention is the least important reason why organisations would make pre-filing disclosures more regularly. For that reason, it appears that benefits in this category arising from a hypothetical introduction of a safety net grace period could be perceived as limited.

These results indicate that while testing the invention was often the reason why disclosures took place, both for grace period users and non-users, it is not a motivation associated with making pre-filing disclosures more regularly in a hypothetical safety-net grace period regime. Investors, however, still stand to gain from the increased willingness to disclose prior to filing which is more pronounced among SMEs and universities.

Investors would benefit from the additional time for market screening etc. as it would enable them to better select the inventions in which to invest and may enable them to influence the refinement of an invention following testing but prior to filing for a patent. This could lead to a greater return on their investment as the quality of the patent filing would have improved following testing.

9.1.3 Earlier research dissemination

The presence of a grace period is also expected to contribute towards the earlier dissemination of research results since there will not be an associated novelty destruction due to earlier disclosure. In addition, third parties that use the invention in good faith will be able to continue doing so even after the patent is granted to the applicant thereby contributing even further to the dissemination of the research.

An assessment of whether pre-filing disclosures would happen more regularly in Europe, given the introduction of a "safety-net" grace period, is highly relevant in determining the potential benefits of earlier research dissemination. This is the case as pre-filing disclosures, by definition, occur chronologically earlier than the actual patent filing and hence result in the earlier dissemination of research.

The answers of SMEs and universities are generally balanced, with roughly equal numbers of respondents split between positive, negative and uncertain answers. Half of the large companies, on the other hand, state that they would not make pre-filing disclosures more regularly in Europe while only 14% claim they would. A cautionary factor is that an average of 29% of respondents are unsure regarding this question, 2% selected “prefer not to answer” and 7% did not answer.

An additional set of questions presented in our survey, allows us to consider which respondents would use the grace period given different tweaks in its definition. In particular we examine the following scenarios:

- protection from any third-party interference, upon pre-filing disclosure;
- disclosure of independent inventors’ invention prior to the filing of the application destroying the novelty of the applicant’s invention; and
- third parties acting in good faith obtaining prior user rights.

The second and third scenarios highlight conditions that are included in the current definition of the safety-net grace period while the first scenario reflects a condition not included in the current definition of the safety-net grace period. By comparing the extent to which these tweaked definitions would lead to an increased take up of the grace period we can draw useful conclusions regarding the attractiveness of the various components of the grace period for the involved stakeholders.

A consistent theme across responses to all three questions is that keeping the invention secret until the patent application is filed is the preferred option for a significant majority of respondents. In all cases, this percentage is highest for large companies, which is unsurprising given their approach towards pre-filing disclosures in general.

The percentage of respondents across all types of organisations who stated that they would use the grace period often decreased when moving from the first to the second and then to the third scenario. In general, large companies are observed to be the least likely to use the grace period often or occasionally while universities are more likely to use the grace period often or occasionally with SMEs lying in between (often closer to universities).

9.1.4 Possibility to reduce costs of patenting by selecting the most promising inventions for protection

The grace period offers a time window for the stakeholders to select inventions that they believe have the highest potential. In addition, organisations that have disclosed their invention prior to filing for a patent can make use of constructive feedback and comments in order to improve their invention. This could result in filtering out a set of applications that may not be as promising as initially expected and could lead to reduced patenting costs.

Amongst those that have previously used the grace period, a significant proportion of respondents indicated that their motivation for using the grace period was: to obtain financing to develop the invention; to test or improve the invention; or to promote and / or sell the invention. This suggests that the possibility to reduce costs of patenting by selecting the most promising inventions to

patent has been an important driver of grace period use, particularly for large companies and SMEs.

However, the extent to which these motivations would apply under a safety-net definition is less clear. When asked how they would act if a grace period protected against any interference from third parties after disclosure, a significant minority of respondents stated that they would use the grace period either occasionally or more often. However, when asked how they would act if prior user rights were available, significantly fewer stated that they would use the grace period.

For those that would make pre-filing disclosures more regularly under a safety-net definition, an important motivation for all types of respondent (but particularly large companies) would be to promote and / or sell the invention. Motivations to obtain financing to develop the invention or to test or improve the invention were reported to be less important motivations.

Overall, therefore, the safety net definition might not prompt a significant increase in the extent to which inventions are tested on the market prior to patent filing. However, given that SMEs and universities typically have smaller patenting budgets than do large companies, a single test of an invention followed by a decision not to file would have a greater proportional impact on their patenting costs than would be the case for larger companies. The public would benefit from this in the form of lower prices while investors would benefit as any market testing would allow investment decisions to be taken before the sunk cost of filing a patent has been incurred.

9.1.5 Harmonisation of international patent law with respect to grace periods

The introduction of a grace period in Europe, if matched by alignment on an agreed norm by other countries around the world, could lead to an internationally harmonised grace period, which could be expected to benefit all stakeholders who engage in international activities. Organisations would then be able to standardise their approach to pre-filing disclosures and so organisations that are primarily engaged in activities that span the borders of both regions that have a grace period and ones that do not have a grace period would be more likely to benefit from this effect.

9.2 Negative effects

9.2.1 Increase in legal uncertainty, disputes over entitlement, costs of freedom to operate opinions and litigation costs

The introduction of a grace period in Europe would in all likelihood increase legal uncertainty for all stakeholders in the patent system. After the disclosure of an invention, and depending on the duration of the grace period, it would take longer before third parties could know whether a patent has been granted for the subject matter or whether the invention is and shall remain in the public domain.

This category of negative impacts will be explored through different sets of questions covering the following issues:

- attitudes towards legal uncertainty;
- expected cost impacts (including the costs of freedom to operate opinions); and

- expected increase in litigation.

When asked whether the adoption of a grace period in Europe would reduce the predictability and legal certainty of the patent system, the majority of large companies replied that they believed it would. This is in stark contrast to the views of SMEs and universities, the majority of which disagreed with that statement. The attitudes of respondents with regards to legal certainty are also explored with a question on whether they agree or not that the grace period should be defined so as to preserve maximum legal certainty. This question explores the attitudes of respondents regarding the principles behind designing a grace period regime. In this case, the majority of respondents, across all types of organisations (more than 70% in every case), is in agreement with the statement that the grace period should be defined so as to preserve maximum legal certainty.

In a different set of questions, we asked how often the grace period is seen as having given rise to issues in litigation or various review procedures in the US and Japan. It is particularly hard to draw conclusions from responses to this question as approximately 42% of the respondents are unsure. It does however appear that most of the answers, across all types of organisations are centred around the responses of “sometimes” and “rarely” while the more extreme replies (“often” and “never”) are less frequently encountered. Thus, we cannot infer any pronounced response differentials based on different types of organisations. There appears to be a differential observed when considering the origin of the applicant, however, with only one Japanese applicant stating that they have often encountered legal issues.

Survey respondents were also asked to state their opinions on the hypothetical introduction of a grace period in Europe and whether they would expect it to increase the cost of “freedom to operate” opinions. This is related to legal uncertainty as the existence of the grace period may make it more difficult and costly to provide a “freedom to operate” opinion if compared to the current situation in Europe, where the status as prior art of a dated document under the current EPC can be assessed on the face of this document. This would not necessarily be the case under a hypothetical grace period, since the status of the document as prior art would also depend on its origin, which might not be readily ascertainable from the document itself.

The results are rather consistent across different stakeholder types and the levels of uncertain answers are significantly lower than before, at around 20-25%. Many respondents believe that these costs would increase if the grace period were introduced in Europe (44% of SMEs and 47% of large companies and universities). It should be noted, however, that more than one out of four respondents from all types of organisations believe that these costs would remain unchanged.

The final question that can help us understand how strong the impact of legal uncertainty would be focuses on the perceptions of respondents regarding an increase in the costs of litigation under a hypothetical introduction of a grace period in Europe. The pattern of responses is rather similar to that described in the previous paragraph and is characterised by a belief that litigation costs would increase, which is more pronounced for large companies.

The analysis presented above leads us to conclude that all three types of stakeholders targeted in the survey view increases in costs similarly, with large companies expecting increases more often than SMEs and universities. In addition, a considerable majority of large companies, as explained earlier, believe that the grace period reduces the predictability and legal certainty of the patent

system. This leads us to consider all stakeholder groups as expecting an average negative impact from uncertainty with the exception of large companies, to which we allocate a strong negative impact classification. These increased costs and uncertainty are expected to be transmitted to the public and to the potential investors. Clearly, the last two would be affected more if they are more heavily dependent on large companies should they correctly expect to experience a stronger negative impact.

9.2.2 Postponement of the moment at which the invention will fall into the public domain

The use of a grace period allows the filing of an application to be delayed by up to the length of its duration. In turn, this delay in filing may lead to a postponement of the date when the invention can fall into public domain. The later filing date may result in a later expiry date.

This postponement, should it occur, would come at a clear cost to the public who would only be able to enjoy the benefits of an invention free to be used by all at a later point in time. In addition, all types of stakeholders surveyed through our questionnaire would also experience negative effects due to this delay when they are competitors to the patent holder.

In assessing the negative effect that this delay would have on the public and on other stakeholders we first make use of our survey data and examine respondents' views on the appropriate duration of the grace period. This will give us an indication of the preferred duration, longer values of which would further postpone the invention's fall into public domain. In our sample, almost one out of two large companies consider six months to be an appropriate duration, while an approximate 36% consider 12 months to be the appropriate duration. This situation is reversed when examining universities' and SMEs' answers since the majority of both is in favour of a longer grace period duration of 12 months. Among these two groups, universities are the ones who have a stronger majority of respondents supporting a 12 month duration with 58% (SMEs 48%), which is not surprising, as they have to contend with the academic environment which emphasises early disclosure to reap recognition, and perhaps more importantly, they are rarely in the situation of a competitor, as they are not per se in the marketplace. The duration of the postponement is perceived as more harmful by large companies.

The materiality of this negative impact depends on three main factors: the duration of the grace period, the frequency with which patent users are likely to invoke the grace period for patents filed in Europe, and whether the patent in question falls into the category of those upheld to the very end of the 20-year patent term. With the duration envisaged for the "safety net" grace period being only six months and with only 16% of large companies (who file the largest number of patents) indicating they would make pre-filing disclosures more regularly in Europe if a "safety net" grace period were introduced there, the postponement would concern a relatively small amount of patents and a relatively short time period. Therefore, we would not expect this negative impact to be material.

It is also important to assess the attitude of respondents towards the general objective of designing a grace period with the target of filing first and disclosing later. Respondents supporting this objective could be assumed to be more negatively affected by a postponement of filing and

the consequent postponement of the invention falling into the public domain. Universities, SMEs and large companies alike, in their majority, agree with this objective. Additionally, none of the three groups' responses are significantly different to the others with the percentage of agreement ranging from 58% for universities to 62% for large companies.

Aside from theoretical views on the design of the grace period, it is important to consider whether the introduction of a safety-net grace period would induce more regular pre-filing disclosure in Europe. Ultimately, the negative effects of postponement would only be experienced if organisations decided to actually make use of the grace period by disclosing prior to filing. This analysis would be complemented by presenting the respondents' views on a set of questions investigating the take-up of the grace period under three alternative tweaked definitions of the grace period. What we expect to gain from this analysis is an identification of a stakeholder group that, according to our survey data, would exhibit an increased take-up of the grace period.

These topics have been explored previously and indicate a clear divergence in the responses of large companies from those of universities and SMEs. Large companies, in their significant majority state that they would not make pre-filing disclosures more regularly. This reinforces large companies' views on the appropriate duration of the grace period and can lead to an assumption of more limited postponement costs associated with large companies as they are not inclined to use the time window offered for pre-filing disclosure if offered in Europe. On the other hand, the responses of universities and SMEs are more balanced and do not indicate a clear intention regarding the regularity of their pre-filing disclosures.

In comparing three tweaked versions of the grace period definition, the one that would lead to more frequent take-up of the grace period is that which would offer protection from any type of interference from third parties. It should be noted that such a version would exacerbate the negative effects of postponement as any third parties would have no right to interfere, and hence benefit in any way, with the invention in question. Such a feature is not, however, an element of the safety-net definition.

9.2.3 Complication of the patent system

The complication of the patent system is one of the primary concerns with the introduction of a grace period in Europe and sources from the addition of a new administrative dimension to the process. We explored the attitudes of respondents towards the complication of the patent system in our survey and present a discussion of these results below. Our questionnaire focuses on two aspects related to the complication of the patent system:

- Is a good reason for not having a grace period that it complicates the patent system?
- Is a good reason for having the grace period that it is user friendly for those who are not knowledgeable about the patent system?
- In your experience of obtaining patents whilst invoking the grace period, did this lead to extra procedural steps with the patent office concerned?

The first two questions are offsetting considerations and it is of particular importance to examine the response patterns exhibited across types of organisations. Regarding the first aspect, half of the large companies in our sample believe that the complication of the patent system is a good

reason not to have a grace period which is in contrast to SMEs (35%) and universities (29%). With respect to the second aspect, around two thirds of SMEs and universities agree that user friendliness for non-knowledgeable stakeholders is important while large companies diverge from this strong majority with only half of them agreeing.

This indicates that large companies might perceive complications to the patent system as more important than SMEs and universities while they also do not attribute a high added value to the reduction of uncertainty for non-knowledgeable organisations. The magnitude of the consequent effect on investors and the public will depend on how closely aligned their interests are with those of large companies in this category and is hence positioned between large companies and the rest of the stakeholders.

With regards to extra procedural steps, there is no clear difference in experience between different types of organisation. In particular, fewer respondents reported experience of extra procedural steps than reported no additional steps for each type of respondent. However, a substantial minority of each type of respondents had experienced additional steps and hence there is no clear evidence for a differential impact on procedural burdens across different types of organisation.

The complication of the patent system is also likely to affect the public and investors. For the public, the additional complication may lead to higher product prices if organisations pass any additional costs (e.g. associated with procedural steps) on to consumers. For investors, the additional complication may increase the level of risk to which they are exposed.

9.2.4 Potential operational impact on the granting procedure

The survey did not address potential operational impacts of the grace period on the granting procedure, since users of the system are not in a situation in which they can quantify such impacts. It must be pointed out, however, that a grace period does not merely impact on individual cases but is likely to have a systemic effect on every application processed by an office operating under a grace period. This is because of the fact that the grace period changes the definition of novelty, the structure of the system as well as the behaviour of applicants.

The magnitude of the impact of a grace period on the operation of the patent system would probably depend on the definition of the grace period and whether it is used as a safety-net only, in which case the effect would be expected to be low. The magnitude would also depend on whether a mandatory declaration is filed by applicants intending to invoke the grace period, listing the date, manner and content of the pre-filing disclosure, which would be expected to simplify the work of the patent office.

It is possible that slippage may occur in the system if examiners find a document they believe forms novelty-destroying prior art, only to discover later that it falls within the scope of the grace period. Since some pre-filing disclosures may be graced without being listed in the mandatory declaration, there will be situations in which an extra communication will be necessary to clarify the prior art applicable to the patent application. This, in turn may cause a lengthening of the procedure.

As long as pre-filing disclosures are few, the systemic effects may be close to negligible. Should pre-filing disclosure be more prevalent, search and examination procedures are likely to become more complex, lengthy, and therefore more costly. In this scenario, should examiners continue their search 'just in case', which under the current European law could be terminated with confidence once a 'knock-out' document has been found? Or should they put their work on hold whilst sending a pre-search report communication to the applicant to clarify the status and origin of document(s) where applicable, only to take up the application a second time to finish the job? Both approaches would be considerably less efficient than current procedures in place.

However, there is no way to obtain any empirical evidence on this issue: the operation of the grace period under the first-to-invent system prior to the passing of the AIA was very different from the current provision, and so little guidance can be taken from past USPTO experience. Likewise, the JPO's grace period definition was quite restrictive until 2011. Although the more generous definition has already resulted in the number of applicants invoking the grace period increasing by up to 80%, it is unlikely that the JPO is in a position to establish the ultimate impact of the new grace period on its day-to-day operations.²²

9.2.5 Increase of risk of unintentional infringement by competitors

With a potential introduction of a grace period in Europe there will be a period, equal to its duration, during which inventors' pre-filing disclosures may be in the public domain without a patent application having been filed. Competitors of the inventor in this type of situation have an increased chance of engaging in behaviour which may, depending on the definition of the grace period, result in them being either prevented from continuing to use the invention, thereby losing their investments, or infringing the rights of the subsequent patent applicant even if it was not their intention to do so.

Depending on the manner in which a pre-filing disclosure occurred it can be increasingly hard for third parties to detect whether a competitor has disclosed an invention for which, within the grace period, it could still file a patent application. Thus, even with the best of intentions, competitors could unintentionally engage in behaviour that ultimately leads to patent infringement.

However, it should be noted that the European safety-net definition of the grace period would allow for prior user rights for third parties who used the invention in good faith before the filing date or the priority date of the application. This feature was warmly welcomed by all types of organisation in responses to the survey and would significantly limit the potential for unintentional infringement (although such infringement may, in principle, still occur if an entity begins to use an invention after the filing or priority date of the corresponding application of which he is unaware, as is the case today).

Furthermore, when asked how they would act if prior user rights were available to third parties having derived knowledge of the invention, who have begun using the invention in good faith, the vast majority of all types of respondent stated that they would generally try to keep their invention

²² JPO, "The Final Consolidated Report on the Tegernsee User Consultation: Grace Period".

secret and try to file a patent application as quickly as possible. This would further serve to limit the extent to which there would be a risk of unintentional infringement of competitors under the safety-net definition as, in most cases, respondents would continue to file before disclosing, and the period of legal uncertainty would be a maximum of 18 months (between the day prior user rights can no longer be acquired and the publication of the application at 18-months) rather than 24 or 30 months, depending on the duration of the grace period.

The perception of this danger by competitors, and the amount of protection competitors are actually afforded depending on the definition of the grace period, would largely determine the impact of the grace period on the rapid adoption of new technology by non-innovating firms. Such rapid adoption of new technology is in the interest of the public as it may contribute to lowering the costs of the new technology on the market.

9.3 Summary of qualitative analysis

The discussion above has identified the extent to which each of the pros and cons of introducing a grace period in Europe would affect the different stakeholders. An indication of the relative degree of impact on each stakeholder has been provided but no attempts have been made to assess which pros and cons can be expected to deliver the greatest impacts: the extent to which such an assessment is feasible is discussed further below.

It is important to stress that the qualitative assessment provided above has been conducted by emphasising the differential impact of certain costs and benefits across different types of patent users (e.g. universities & PROs, SMEs, and large companies). However, it should be noted that, in order to obtain a more representative picture of the potential welfare impact associated with the introduction of the "safety-net grace period", such assessment should also reflect the different weights that different users have within the European patent system. More specifically, large companies file a significantly greater number of patents at the EPO than do SMEs and universities / PROs. Indeed, 65.5% of applications were from large companies in 2013.²³ This implies that the analysis provided above should be interpreted bearing in mind that any impacts on large companies should be given greater weight in an overall assessment than would impacts on other types of patent user.

9.4 Potential for quantitative analysis of welfare impacts

In principle, the responses of survey participants to several questions would allow us to quantify some of the benefits and costs described qualitatively above. Such an analysis would, however, require a significant number of assumptions to be made and hence there would be large margins of error in any quantitative estimates.

Any quantification would rely heavily on an estimate of the increase in the number of patent applications filed in Europe – here, it must be borne in mind that any effect would not be limited to the EPO, but would probably extend also to national patent offices in Europe. As noted above, it is

²³ EPO Annual Report for 2013.

possible to use questionnaire responses to estimate the increase in the number of patent filings in Europe for respondents that have made use of the grace period in either the US or Japan. However, the data do not allow us to estimate the number of graced filings that would be made by those that have no prior experience of using the grace period and hence such an estimate would be a significant lower bound to the total effect. Attempting to extrapolate this estimate would require significant assumptions to be made about the manner in which those that have no prior experience of grace periods would react to its introduction in Europe or, preferably, for additional data to be gathered.

Given an estimate of the increase in the number of filings, an approach to quantifying certain impacts would be as follows.

- **Increased patenting cost:** given an estimate of the increase in the number of patent filings it would be possible to estimate the increased cost to applicants using data on the average cost of patenting at the EPO (i.e. using figures on different categories of pre-grant patenting costs and making assumptions concerning the characteristics of an average patent filing, such as the average number of claims/pages etc.). Please note that this calculation would require an assumption that the IP budgets of patent users are expandable, which may not be correct in all cases. Sensitivity analysis could be conducted to assess how the impact varies under different assumptions concerning the extent to which IP budgets are fixed.
- **Increased number of patent grants in Europe:** given an estimate of the increase in the number of patent filings it would be possible to estimate the increase in the number of granted patents by multiplying the increase in applications by an assumption concerning the grant rate of patents at the EPO (ideally defined as the grant rate for applicants from Europe, US and Japan). This analysis would require an assumption that the additional applications do not offset applications which would have been filed in the absence of the grace period. Alternatively, budget constraints may result in applications being filed and patents granted for different inventions rather than additional ones. Again, sensitivity analysis could be employed to explore this issue.
- **Increased value of patents:** given the estimated increase in the number of granted patents it would be possible to estimate the value of these patents given an assumption on the average value of a European patent.
- **Increased pendency:** quantification would require an estimate of how much pendency (e.g. average time from filing to grant/rejection) would increase for any additional patent filed at the EPO, and an estimate on the welfare cost of increased pendency.
- **Later date at which patented technology falls in the public domain:** quantification would require assumptions on the average monetary value of EPO-granted patents and the average lifetime of an EPO granted patent. Here, it should be borne in mind that many patents are not upheld for the duration of the possible patent term, minimising this potential effect. Under these assumptions, the cost associated with the later date on which patented technology falls in the public domain could be calculated through a NPV formula as: $NPV_t - NPV_{t+6}$.
- **Increased litigation costs:** this could be proxied by estimating the increase in fees paid to patent attorneys and specialised firms. Quantification of this impact would require an assumption concerning the average patent/attorneys/legal fees per average patent.

It is clear that the potential approaches to quantifying some of the key costs and benefits of introducing a grace period in Europe rely, in many cases, on crucial assumptions and in some cases would require additional data to be gathered. While implementing quantitative welfare analysis lies outside the scope of this study, the discussion above provides an indication of the challenges that future researchers will face in completing such an exercise.

10 Conclusions

This study has identified the main pros and cons of introducing a grace period in Europe and has assessed the extent to which each of these possible impacts are considered important by stakeholders. It has also identified how European and international applicants at the EPO might react to the introduction of a grace period in Europe with respect to issues such as filing strategies, expected use of the grace period and so on. We have also considered the issue of grace period harmonisation and have assessed the extent to which different types of users of the patent system favour different features of grace periods.

Based on our analysis, the following key findings have been identified:

- The majority of users of the European patent system are in favour of a grace period in principle. Support is weakest amongst large companies and European respondents.
- There is no clear preference for a duration of six months or 12 months. However, the majority believe that a declaration should be required and that prior user rights should be available to third parties in good faith throughout the grace period. Moreover, there is a strong preference that the grace period should be calculated from the filing date or priority date.
- Views are mixed on the issue of whether the grace period should protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing, although US users strongly support such protection.
- European users support the safety-net definition of the grace period more strongly than the US or Japanese definitions while the safety-net definition is also the second preference of Japanese users.
- If a grace period were introduced in Europe — and irrespective of its defining features — SMEs and universities/PROs would be significantly more likely to use the grace period than would large companies.
- US users of the European patent system are less likely to use a European grace period at least occasionally than are European and Japanese users.
- Factors that would discourage use of a grace period in Europe (irrespective of whether this is attributable to prior user rights or that disclosures of independent inventions would be novelty destroying) is greater among SMEs (relative to large companies and universities and PROs), and among US patent users (relative to European and Japanese users).
- There is no clear conclusion on the issue of whether the grace period would lead to higher litigation costs and/or higher costs for obtaining a freedom to operate opinion, although more respondents expect these costs to increase than to remain the same.

Appendix 1: Questionnaire

Introduction

(Respondents will see the following after they have clicked on the link in the email invitation)

Thank you for agreeing to take part in this online survey which is being conducted by Europe Economics and Accent on behalf of the Economic and Scientific Advisory Board, created to advise the European Patent Office (EPO).

Before we begin, please can you confirm that the name of **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business"; **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation" **SHOW ALL** is **INSERT NAME FROM SAMPLE**

Yes

No

Unsure

Prefer not to answer

THANK AND CLOSE

THANK AND CLOSE

THANK AND CLOSE

Please click on the forward button at the bottom of this page when you have finished reading it. The button looks like this (SHOW IMAGE).

Why the research is being carried out?

The research is about a Grace Period in patent law and its effect on **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business"; **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation".

You may not be familiar with grace periods or you may not think they are relevant to you. But we request that you take part in this survey as the presence or absence of a grace period in Europe may affect you in the future. This is your opportunity to provide input on important policy issues which may be relevant to the success of **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business"; **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation". You do not need to be an expert on patent law to answer these questions.

SHOW IF SAMPLE = "OVERLAP_FPS" ELSE SKIP. This research is different from EPO's annual Patent Filing Survey. You may be approached by another research company between May and September asking you to take part in their 2014 survey.

Please click on the forward button at the bottom of this page.

This survey link is confidential and secure

You have entered this survey through a secure weblink. No one outside of Accent and Europe Economics can see your answers.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the UK's Market Research Society. Neither you nor **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business" **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation" **SHOW ALL** will be identified to the European Patent Office or to anyone else. If you wish to verify our credentials, please email the UK's Market Research Society on info@marketresearch.org.uk

If you wish further assurance that this is legitimate research, please click on the following link to European Patent Office's website: <http://www.epo.org/service-support/contact-us/surveys/grace.html>

You can also contact the European Patent Office directly using this email address: survey@epo.org.

Please click on the forward button at the bottom of this page when you have finished reading it.

Who Should Complete this Survey?

Ideally we'd like this survey completed by someone who can comment on how a grace period could affect **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business." **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation". The person does not need to be an expert in patent law to answer these questions. The respondent can be the department head who deals with protecting your intellectual property, a member of your research and development department, the inventor of your new products or a patent lawyer inside or outside your organisation

If you choose an outside patent lawyer, it is important that he or she responds from the perspective - and on behalf of **SHOW IF THE RESPONDENT COMES FROM 2620 OR IF THE 2666 RECRUITMENT QUESTIONNAIRE Q7 = INDIVIDUAL OR SMALL FIRM OR LARGE FIRM** "your business." **SHOW IF RECRUITMENT QUESTIONNAIRE Q7 = UNIVERSITY OR GOVERNMENT OWNED RESEARCH ORGANISATION OR UNSURE OR PREFER NOT TO ANSWER** "your organisation."

If you would like to see all of the questions we are asking before you answer them in this online survey, please click on the following link to see a pdf version: **LINK TO FOLLOW**

If you wish to show this questionnaire and your answers to colleagues, you can forward them the email you used to enter the survey. They will be able to log on just like you did.

Please click on the forward button at the bottom of this page when you have finished reading it.

Completing the Survey

The survey will take about 20 to 30 minutes and you do not have to answer any question you do not want to.

You do not need to complete the survey in one go. You can answer some questions and complete the rest later. You will automatically return to the last question you answered.

Your answers are automatically saved each time you click on the forward button at the bottom of each web page (**SHOW IMAGE**).

You can look at your previous answers by pressing the back button (**SHOW IMAGE**).

If you leave the survey idle for more than 30 minutes you will be logged out automatically, but all of your completed answers will be saved.

When you have finished all of the questions, you can download a copy for your records.

If you have any questions please contact Seán Brennan at Accent. His email address is sean.brennan@accent-mr.com. He will be glad to help you.

Please click on the forward button at the bottom of this page when you have finished reading it.

Profiling information

Q1. **IF SAMPLE = 2666, IMPORT ANSWER FROM RECRUITMENT QUESTIONNAIRE DO NOT SHOW AND GO TO Q2. IF SAMPLE = 2620, ASK.** Before we start the survey, we would like to ask some profiling questions to help us analyse the findings. Which of the following best describes your organisation?

Please click on one answer below

- Individual with no other employees working for you
- Small company with less than 250 employees
- Large company with more than 250 employees
- University / higher education
- Public Research Organisation

Other (**PLEASE SPECIFY**)

.....

Prefer not to answer

Q2. Do you have your own in-house patent attorney/counsel or do you buy in this service when you need it?

Please click on one answer below

We have our own in-house patent attorney/counsel

We buy in the service when we need it

Prefer not to answer

Q3. **ASK IF Q1 = UNIVERSITY / HIGHER EDUCATION OR GOVERNMENT OWNED ORGANISATION ELSE GO TO THE INTRODUCTION TO THE NEXT SECTION.** Do you have a technology transfer office or someone in the organisation whose job is to help turn your research into commercial opportunities?

Please click on one answer below

Yes

No

Prefer not to answer

Opinions on Different Aspects of the Grace Period

We shall begin by explaining what a grace period is in the context of the patent system. If you need an explanation of some of the highlighted terms used, you can hover your cursor over them and a description will appear.

An invention is **not novel (new)** and therefore not patentable if it was known to the public before the **date of filing** of the patent application, or before its **date of priority**.

Within a patent system, a grace period is a period of time before the date of filing of a patent on an invention, during which it is possible for that invention to be publicly disclosed (for example, in a scientific publication, at a trade show, or by accident) without losing its **novelty**, so that the invention remains patentable.

At present, some countries have grace periods, which are defined in many different ways, and some countries have no grace period.

We will now be asking questions about **different aspects of a grace period**.

Please click on the forward button at the bottom of this page when you have finished reading it.

Duration

Q4. In assessing how long a grace period should last, policy makers need to balance the needs of two sets of parties affected by it:

- it should give inventors a reasonable amount of time to prepare a patent application after they have made details of the invention public
- third parties should be able to assess within a reasonable time period whether an application has been filed for an invention which has already been made public.

In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?

Please click on one answer below

- 6 Months
- 12 Months
- Other (**PLEASE SPECIFY**)

-
- Unsure
 - Prefer not to answer

Q5. Regardless of its duration, from which date should the term of the grace period be computed?

Please click on one answer below

- From the **filing date** of the patent
- From the **filing date** of the patent or the **priority date**, if applicable
- Other (**PLEASE SPECIFY**)
- Unsure
- Prefer not to answer

Declaration Requirements

Q6. In some of the countries that have grace periods, patent applicants must file a **declaration** listing when and how information about their invention was made available to the public. If the applicant fails to declare a **pre-filing disclosure** because he or she is unaware of it, the grace period still applies. The declaration requirement entails an additional formality for applicants but it enhances legal certainty as well as the efficiency of the patenting procedure. By consulting the patent office file, any third party can quickly check whether a **pre-filing disclosure** is **graced**, in which case it does not affect the validity of the patent. This information remains relevant after the patent has been granted,

Do you think that inventors should be required to make a declaration when they apply for a patent if they want to use the grace period?

Please click on one answer below

- Yes
- No

- Unsure
- Prefer not to answer

Prior User Rights

Q7. A prior user right gives a third party the right to continue using an invention after a patent has been filed, provided the third party's use of the invention began before the patent application was filed. This can happen when the third party has made the same invention independently, or has acquired knowledge of the invention from another inventor **in good faith**. In countries which have a first-to-file patent system, prior user rights allow patents to be granted to the first applicant to file without destroying the investments made by third parties who may be using the same invention, but chose to do so secretly. These rights are rooted in policy considerations of both efficiency and fairness.

Should **prior user rights** be available to third parties **in good faith** throughout the grace period?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q8. Please read the following statements about **prior user rights**, and say whether or not you agree with them. **ROTATE**

Please click on one answer in each of the rows below

	Agree	Disagree	Unsure	Prefer Not to Answer
--	-------	----------	--------	----------------------------

Prior user rights are an essential component of a grace period. They contribute to enhancing legal certainty by discouraging **pre-filing disclosure** where such disclosure may be avoided.

Prior user rights are irrelevant to the definition of the grace period

Where an invention has been put in **the public domain** and a third party has begun using it **in good faith**, a patent subsequently obtained thanks to the grace period should not stop that person from continuing to use the invention, because that would be unfair and /or would make the rapid adoption of new technology very risky.

Disclosure of Independent Inventions

Q9. In most countries, the grace period applies only to disclosures of the applicant's invention. Where an invention independently made by a third party is disclosed prior to **the filing date**, it forms part of the **prior art** and destroys the novelty of the applicant's invention.

In at least one country, this is not the case. Once the applicant has disclosed his or her invention, no disclosure of an invention independently made by a third party will **destroy the novelty** of the applicant's invention.

Having read this explanation, should the grace period protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Views on the Grace Period

Q10. Please read the following statements about grace periods and say whether or not you agree with them. **ROTATE**

Please click on one answer in each of the rows below

Agree Disagree Unsure Prefer
Not to
Answer

The grace period should take into account both the goals of the patent system and the needs of the scientific/academic community

The grace period should protect inventors against the consequences of breach of confidence and theft of information.

A good reason for having a grace period is that it is user friendly for those who may not be knowledgeable about the patent system, including smaller businesses and individual inventors.

A grace period reduces the predictability and legal certainty of the patent system.

A good reason for not having a grace period is that it complicates the patent system.

The grace period should protect the first inventor who disclosed an invention against any interference from third parties in the time interval between first disclosure and filing. A subsequent patent should be able to stop the activities of both prior users **in good faith** and independent inventors having published their invention.

Q10A Please read the following three statements about grace periods and say whether or not you agree with them. **ROTATE (DP CODE ANSWERS IN RAW DATA AS FOLLOWS: AGREE TO ALL 3 = SUPPORTS GRACE PERIOD CONCEPT. AGREE TO LESS THAN 3 = DOES NOT SUPPORT GRACE PERIOD CONCEPT**

Please click on one answer in each of the rows below

	Agree	Disagree	Unsure	Prefer Not to Answer
The grace period should be defined so as to preserve maximum legal certainty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The grace period should be defined so as to ensure that any inventor having a real choice, would choose to file first and then disclose.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The grace period should be defined to ensure that when pre-filing disclosure does occur, through accident or by choice, the inventor will be able to secure patent rights.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q11. In principle, are you in favour of a grace period?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q12. Assuming that a grace period exists, in your view, who should bear the risks associated with a **pre-filing disclosure**?

Please click on one answer below

- The inventor or his **successor in title**
- Third parties
- Unsure
- Prefer not to answer

Comparing different kinds of grace periods

Q13. We will now describe three different kinds of grace periods and ask whether you would support or oppose each one if it were the only grace period system worldwide. **ADD IF Q11 = NO**. Earlier on you said you were not in favour of a grace period in principle. We would still like you to review the three grace periods we are about to describe and give us your views on them.

The following table summarises the key differences between the US, the Japanese, and a possible safety-net grace period as defined in the table below. Please read about each one and then scroll down the screen to answer the question below the table.

	US	Japan	Safety Net
Duration of Grace Period	12 months	6 months	6 months
Pre-filing Declaration Required	No	Yes	Yes
Prior user rights	<p>No</p> <ul style="list-style-type: none"> No prior user rights may arise during the grace period 	<p>Sometimes</p> <ul style="list-style-type: none"> Prior user rights may be obtained throughout the grace period by third parties <u>in good faith</u> However, these rights cannot arise where knowledge of the invention has been derived from the applicant, even <u>in good faith</u>. 	<p>Yes</p> <ul style="list-style-type: none"> Third parties who used the invention <u>in good faith</u> before the filing date or priority date of the application, could continue to use the invention even if a patent is granted to the applicant. This would apply whether or not knowledge of the invention was derived from the applicant.
Disclosure of independent inventions	<ul style="list-style-type: none"> Disclosures by independent inventors of their own inventions between the first disclosure by the applicant and the filing date of the patent application are not novelty destroying. Independent inventors may be stopped from using their own inventions by the subsequent patent. 	<ul style="list-style-type: none"> Disclosures by independent inventors of their own inventions prior to the filing date are novelty destroying. 	<ul style="list-style-type: none"> Disclosures by independent inventors of their own inventions prior to the filing date would be novelty destroying.

ROTATE Q14 Q15 Q16

Q14. **SHOW IF Q14 = 1ST ROTATION** Considering the above table, if the **US definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it? **SHOW IF Q14 NOT EQ 1ST ROTATION** Please look at the table again. If the **US definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q14 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

Q15. **SHOW Q15 NOT EQ 1ST ROTATION.** Please look at the table again. If the **Japanese definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it? **SHOW IF Q15 = 1ST ROTATION** Considering the above table, if the **Japanese definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q15 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

Q16. **SHOW IF Q16 NOT EQ 1ST ROTATION** Please look at the table again. If the **safety net definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it? **SHOW IF Q16 = 1ST ROTATION** Considering the above table, if the **safety net definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q16 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

Q17. Please look at the table one last time. If you had to **choose just one** of the three grace periods, the US, Japanese or the safety-net, which one would you choose?

SHOW TABLE HERE

Please click on one answer below

- US
- Japan
- Safety-net grace period
- None of the above
- Unsure
- Prefer not to answer

Your Experience of Using Grace Periods

Q18. Have you actually used the grace period for patents you have filed in the past?

Please click on any of the answers that apply to you

- Yes, in the US
- Yes, in Japan
- Yes, elsewhere
- No **EXCLUSIVE**
- Prefer not to answer **EXCLUSIVE**

Q19. **ASK IF Q18 = ELSEWHERE ELSE GO TO Q20:** Where did you use the grace period (please exclude the US, Japan and Europe)?

Please click on any of the answers that apply to you in the list below

Argentina	
Australia	
Brazil	
Canada	
China	
India	
Israel	
Indonesia	
Mexico	
Russian Federation	
Singapore	
South Africa	
South Korea	
Other (PLEASE SPECIFY)	
Unsure (EXCLUSIVE)	
Prefer not to answer (EXCLUSIVE)	

Q20. **ASK IF Q18 = YES IN THE US OR YES IN JAPAN OR YES ELSEWHERE, ELSE GO TO Q27.**
In your experience of obtaining patents whilst invoking the grace period, did this lead to extra procedural steps with the patent office concerned?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q21. What were your motivations for using the grace period?

Please click on any of the answers that apply to you

DO NOT ROTATE

- Out of necessity (human error, breach of confidence)
- To obtain financing to develop the invention
- To test or improve the invention
- To promote and / or sell the invention
- To be the first to publish scientific results in an academic publication
- To signal technological leadership and put pressure on competitors
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....

- Unsure **EXCLUSIVE**
- Prefer not to answer **EXCLUSIVE**

Q22. How was your invention disclosed to the public before you filed your patent applications?

Please click on any of the answers that apply to you

ROTATE

- Error on the part of the inventor/person entitled to file, or an employee
- Breach of confidence
- Disclosure at a trade show
- Disclosure during business negotiations
- Disclosure during trials/public experiments
- Disclosure in an academic communication (article, conference, etc.)
- Disclosure by putting the product or service on the market
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....

- Unsure **EXCLUSIVE DO NOT ROTATE**
- Prefer not to answer **EXCLUSIVE DO NOT ROTATE**

Q23. **ASK IF Q18 = YES IN THE US, ELSE GO TO Q25** What percentage of the total number of patents you have filed in the US in the last five years used the US grace period?

Please click on one answer below

- Less than 0.1%
- Between 0.1% and 1%
- Between 1% and 5%
- Between 5% and 10%
- Between 10% and 20%
- More than 20% (**PLEASE SPECIFY – MUST BE NUMERIC RESPONSE BETWEEN 21% AND 100% ONLY**)

-
- Unsure **EXCLUSIVE**
 - Prefer not to answer **EXCLUSIVE**

Q24. **ASK IF ONLY Q23 NOT EQ UNSURE OR NOT PREFER NOT TO ANSWER, ELSE GO TO Q25** You have indicated that approximately **[INSERT ANSWER TO Q23]** of the patents you have filed in the US in the last five years used the grace period. What percentage of these patents would you have also filed in Europe, had a “**safety net grace period**” been available there?

Please click on one answer below

- None of these patents
- Less than 25% of these patents
- Between 25% and 50% of these patents
- Between 51% and 75% of these patents
- Between 76% and 100% of these patents
- All of these patents
- Unsure
- Prefer not to answer

Q25. **ASK IF Q18 = YES IN JAPAN, ELSE GO TO Q27.** What percentage of the total number of patents you have filed in Japan in the last five years used the Japanese grace period?

Please click on one answer below

- Less than 0.1%
- Between 0.1% and 1%
- Between 1% and 5%
- Between 5% and 10%
- Between 10% and 20%
- More than 20% (**PLEASE SPECIFY– MUST BE NUMERIC RESPONSE BETWEEN 21% AND 100% ONLY**)

-
- Unsure **EXCLUSIVE**
 - Prefer not to answer **EXCLUSIVE**

Q26. **ASK IF ONLY Q25 NOT UNSURE OR NOT PREFER NOT TO ANSWER, ELSE GO TO Q27.** You have indicated that approximately **[INSERT ANSWER TO Q25]** of the patents you have

filed in Japan in the last five years used the grace period. What percentage of these patents would you have also filed in Europe, had a “**safety net grace period**” been available there?

Please click on one answer below

- None of these patents
- Less than 25% of these patents
- Between 25% and 50% of these patents
- Between 51% and 75% of these patents
- Between 76% and 100% of these patents
- All of these patents
- Unsure
- Prefer not to answer

Q27. **ASK ONLY IF Q18 = NO OR PREFER NOT TO ANSWER ELSE GO TO Q29** Have you ever felt the need to file a patent application after you disclosed a research and/or product development result?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q28. **ASK ONLY IF Q27 = YES ELSE GO TO Q29** How did this **pre-filing disclosure** occur?

Please click on any of the answers that apply to you

ROTATE

- Error on the part of the inventor/person entitled to file, or an employee
- Breach of confidence
- Disclosure at a trade show
- Disclosure during business negotiations
- Disclosure during trials/public experiments
- Disclosure in an academic communication (article, conference, etc.)
- Disclosure by putting the product or service on the market
- Other (**PLEASE SPECIFY**) **DO NOT ROTATE**

-
- Unsure **DO NOT ROTATE EXCLUSIVE**
 - Prefer not to answer **DO NOT ROTATE EXCLUSIVE**

Q29. If a “**safety net grace period**” were introduced in Europe, would you make **pre-filing disclosures** (more) regularly in Europe?

Please click on one answer below

- Yes
- No
- Unsure

Prefer not to answer

Q30. **ASK IF Q29 = YES ELSE GO TO Q32** Why would you make **pre-filing disclosures** (more) regularly in Europe?

Please click on any of the answers that apply to you

DO NOT ROTATE

- To obtain financing to develop the invention
- To test or improve the invention
- To promote and / or sell the invention
- To be the first to publish scientific results in an academic publication
- To signal technological leadership and put pressure on competitors
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....
 Unsure **EXCLUSIVE**

Prefer not to answer **EXCLUSIVE**

Q31. How would you disclose your inventions to the public in Europe before filing your patent applications there?

Please click on any of the answers that apply to you

ROTATE

- Disclosure at a trade show
- Disclosure during business negotiations
- Disclosure during trials/public experiments
- Disclosure in an academic communication (article, conference, etc.)
- Disclosure by putting the product or service on the market
- Other, **(PLEASE SPECIFY) DO NOT ROTATE**

.....
 Unsure **DO NOT ROTATE EXCLUSIVE**

Prefer not to answer **DO NOT ROTATE EXCLUSIVE**

Q32. If a grace period were adopted in Europe and if it protected you from any interference from third parties as a result of your **pre-filing disclosure**, which of the following would you do?

Please click on one answer below

- Use the grace period often
- Use the grace period occasionally
- Generally, try to keep your invention secret and file a patent application as quickly as possible
- Other **(PLEASE SPECIFY)**

.....
 Unsure

Prefer not to answer

Q33. If a grace period were adopted in Europe where disclosures prior to the **filing date** by independent inventors of their own inventions **destroyed the novelty** of your invention, which of the following would you do?

Please click on one answer below

Use the grace period often

Use the grace period occasionally

Generally, try to keep your invention secret and file a patent application as quickly as possible

Other (**PLEASE SPECIFY**)

.....

Unsure

Prefer not to answer

Q34. Assume that a grace period is adopted in Europe where third parties acting **in good faith** could obtain **prior user rights** based on knowledge of your invention derived as a result of it having been made public prior to filing. These third parties could then continue to use the invention after the patent has been granted. Which of the following would you do?

Please click on one answer below

Use the grace period often

Use the grace period occasionally

Generally, try to keep your invention secret and file a patent application as quickly as possible

Other (**PLEASE SPECIFY**)

.....

Unsure

Prefer not to answer

Q35. Have you ever used technology which was patented outside Europe, but not in Europe?

Please click on one answer below

Yes

No

Unsure

Prefer not to answer

Q36. **ASK IF Q35 = YES ELSE GO TO Q36A.** To your knowledge, was the lack of a grace period in Europe a key reason for not seeking patent protection of that technology in Europe?

Please click on one answer below

Yes

No

Unsure

Prefer not to answer

Legal Uncertainty

Q37. If a grace period were to be introduced in Europe, this would create greater legal uncertainty for all stakeholders of the patent system. This is due to the fact that, after disclosure of an invention, depending on the duration of the grace period, it would take longer before third parties could know whether a patent has been filed for the subject matter or whether the invention is in **the public domain**.

Would you say the grace period has given rise to issues in litigation or various review procedures available post-grant in the US and Japan?

Please click on one answer below

- Often
- Sometimes
- Rarely
- Never
- Unsure
- Prefer not to answer

Q38. If a grace period were introduced in Europe, would you expect the cost of **freedom to operate opinions** to increase, decrease or remain the same?

Please click on one answer below

- Increase
- Decrease
- Remain the same
- Unsure
- Prefer not to answer

Q39. If a grace period were introduced in Europe, would you expect the cost of litigation to increase, decrease or remain the same?

Please click on one answer below

- Increase
- Decrease
- Remain the same
- Unsure
- Prefer not to answer

Q40. How would a grace period affect the speed at which you adopt or further develop new technology that was not developed by **INSERT NAME OF COMPANY FROM SAMPLE?**

Please click on one answer below

- We would adopt earlier
- We would adopt later

- Not applicable to us
- Unsure
- Prefer not to answer

Q40A Do you have any other comments you would like to make?

- Yes
- No
- Prefer not to answer

Q40B **ASK IF Q40A = YES ELSE GO TO Q41.** Please click on the box below and type your comments.

Final Section

Q41. Thinking only about yourself, please rate your own knowledge of the patent system.

Please click on one answer below

- I know nothing about it
- I know a little about it, but I have never had any experience with it
- I have some experience of it, but do not understand much about it
- I consider myself quite well informed, I have quite a lot of experience of using of the patent system but I would not call myself a patent expert
- I consider myself very well informed; I am a very experienced user of the patent system. I would call myself a patent expert
- Prefer not to answer

Q42. We really appreciate the time that you have given us in answering these questions. Sometimes we may need to contact respondents to clarify some of their answers or to ask follow up questions on the same topic. Are you happy for us to do so?

Please click on one answer below

- Yes for clarification and follow up questions on the same topic
- Yes for clarification only
- Yes to ask follow up questions on the same topic only
- No
- Prefer not to answer

Q43. You have now completed the survey. On the next page you will see an option to print off or download a copy of your completed answers. However, before that, we would just like to say that all of your answers were automatically saved each time you clicked on the forward button. We can confirm, therefore, that we have received them. Would you like us to send you an email to confirm we have received all of your answers?

Please click on one answer below

Yes **(SEND AUTO EMAIL)**

No

Thank you for your help in this research

All of your answers have already been saved. When you exit the survey we will see that you have finished.

This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm Accent's and Europe Economics' credentials please email the UK's Market Research Society on info@marketresearch.org.uk

Thank you

Please click on any of the links below if you would like to print or download your answers

[Print](#)

[Download](#)

Appendix 2: Questionnaire Answers

In this section we present the breakdown of responses to each question by type of organisation and origin of the applicant. As a general note, "DNA" stands for "Did not answer", "PNA" stands for "Prefer not to answer", "SME" stands for SMEs and Individuals, "Large" stands for large companies and "Uni" stands for Universities and Public research organisations.

Region of applicant's origin

Origin of applicant	Freq.	Percent	Cum.
EPC	452	55.12	55.12
JP	163	19.88	75.00
US	205	25.00	100.00
Total	820	100.00	

Question 1

Type of organisation	Freq.	Percent	Cum.
1.SME	264	32.20	32.20
2.Large	407	49.63	81.83
3.Uni	142	17.32	99.15
4.Other	4	0.49	99.63
5.PNA	3	0.37	100.00
Total	820	100.00	

Question 2

Do you have your own in-house patent attorney/counsel or do you buy in this service when you need it?

Please click on one answer below

- We have our own in-house patent attorney/counsel
 We buy in the service when we need it
 Prefer not to answer

Q2	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
In-house	37	191	25	1	1	255
Buy services	220	205	111	3	2	541
PNA	7	11	6	0	0	24
Total	264	407	142	4	3	820

Question 3

ASK IF Q1 = UNIVERSITY / HIGHER EDUCATION OR GOVERNMENT OWNED ORGANISATION ELSE GO TO THE INTRODUCTION TO THE NEXT SECTION. Do you have a technology transfer office or someone in the organisation whose job is to help turn your research into commercial opportunities?

Please click on one answer below

Yes

No

Prefer not to answer

Q3	Type of organisati on	Total
	3.Uni	
DNA	2	2
Yes	129	129
No	10	10
PNA	1	1
Total	142	142

Q3	Origin of applicant			Total
	EPC	JP	US	
DNA	1	0	1	2
Yes	91	17	21	129
No	8	1	1	10
PNA	1	0	0	1
Total	101	18	23	142

Question 4

In this question we have decoded "other" responses in order to produce a number of additional categories.

In assessing how long a grace period should last, policy makers need to balance the needs of two sets of parties affected by it:

- it should give inventors a reasonable amount of time to prepare a patent application after they have made details of the invention public
- third parties should be able to assess within a reasonable time period whether an application has been filed for an invention which has already been made public.

In your opinion, if a grace period were adopted in Europe, what would be the appropriate duration?

Please click on one answer below

6 Months

12 Months

Other (**PLEASE SPECIFY**)

Unsure

Prefer not to answer

Q4	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
6 Months	104	196	43	3	1	347
12 Months	128	145	82	1	0	356
Other	1	2	0	0	0	3
Unsure	11	18	9	0	0	38
PNA	2	3	1	0	0	6
No grace period	5	22	1	0	0	28
1 Month maximum	2	3	0	0	0	5
Up to 3 months	7	14	1	0	2	24
Between 3 and 6 Month	3	0	2	0	0	5
Between 6 and 12	0	1	1	0	0	2
Between 12 and 24	1	1	2	0	0	4
Harmonise internation	0	2	0	0	0	2
Total	264	407	142	4	3	820

Q4	Origin of applicant			Total
	EPC	JP	US	
6 Months	197	101	49	347
12 Months	163	49	144	356
Other	2	1	0	3
Unsure	23	9	6	38
PNA	6	0	0	6
No grace period	26	0	2	28
1 Month maximum	5	0	0	5
Up to 3 months	22	0	2	24
Between 3 and 6 Month	3	1	1	5
Between 6 and 12	1	1	0	2
Between 12 and 24	2	1	1	4
Harmonise internation	2	0	0	2
Total	452	163	205	820

Question 5

Regardless of its duration, from which date should the term of the grace period be computed?

Please click on one answer below

From the **filing date** of the patent

From the **filing date** of the patent or the **priority date**, if applicable

Other (**PLEASE SPECIFY**)

Unsure

Prefer not to answer

Q5	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Filing date	65	86	21	1	0	173
Filing or Priority da	169	283	107	3	3	565
Other	14	20	4	0	0	38
Unsure	14	15	9	0	0	38
PNA	2	3	1	0	0	6
Total	264	407	142	4	3	820

Q5	Origin of applicant			Total
	EPC	JP	US	
Filing date	95	40	38	173
Filing or Priority da	307	118	140	565
Other	16	2	20	38
Unsure	28	3	7	38
PNA	6	0	0	6
Total	452	163	205	820

Question 6

In some of the countries that have grace periods, patent applicants must file a **declaration** listing when and how information about their invention was made available to the public. If the applicant fails to declare a **pre-filing disclosure** because he or she is unaware of it, the grace period still applies. The declaration requirement entails an additional formality for applicants but it enhances legal certainty as well as the efficiency of the patenting procedure. By consulting the patent office file, any third party can quickly check whether a **pre-filing disclosure** is **graced**, in which case it does not affect the validity of the patent. This information remains relevant after the patent has been granted,

Do you think that inventors should be required to make a declaration when they apply for a patent if they want to use the grace period?

Please click on one answer below

Yes

No

Unsure

Prefer not to answer

Q6	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Yes	146	257	86	1	3	493
No	83	107	42	3	0	235
Unsure	34	36	14	0	0	84
PNA	1	7	0	0	0	8
Total	264	407	142	4	3	820

Q6	origin of applicant			Total
	EPC	JP	US	
Yes	297	118	78	493
No	104	28	103	235
Unsure	45	15	24	84
PNA	6	2	0	8
Total	452	163	205	820

Question 7

A prior user right gives a third party the right to continue using an invention after a patent has been filed, provided the third party's use of the invention began before the patent application was filed. This can happen when the third party has made the same invention independently, or has acquired knowledge of the invention from another inventor **in good faith**. In countries which have a first-to-file patent system, prior user rights allow patents to be granted to the first applicant to file without destroying the investments made by third parties who may be using the same invention, but chose to do so secretly. These rights are rooted in policy considerations of both efficiency and fairness.

Should **prior user rights** be available to third parties **in good faith** throughout the grace period?

Please click on one answer below

Yes

No

Unsure

[] Prefer not to answer

Q7	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	1	1	0	0	0	2
Yes	147	289	85	2	2	525
No	66	67	26	2	0	161
Unsure	49	40	27	0	1	117
PNA	1	10	4	0	0	15
Total	264	407	142	4	3	820

Q7	Origin of applicant			Total
	EPC	JP	US	
DNA	2	0	0	2
Yes	289	112	124	525
No	82	29	50	161
Unsure	69	19	29	117
PNA	10	3	2	15
Total	452	163	205	820

Question 8

Please read the following statements about **prior user rights**, and say whether or not you agree with them. **ROTATE**

Please click on one answer in each of the rows below

Agree Disagree Unsure Prefer
Not to
Answer

Prior user rights are an essential component of a grace period. They contribute to enhancing legal certainty by discouraging **pre-filing disclosure** where such disclosure may be avoided. [] [] [] [] .

Prior user rights are irrelevant to the definition of the grace period [] [] [] [] .

Where an invention has been put in **the public domain** and a third party has begun using it **in good faith**, a patent subsequently obtained thanks to the grace period should not stop that person from continuing to use the invention, because that would be unfair and /or would make the rapid adoption of new technology very risky. [] [] [] [] .

Prior user rights essential	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	24	35	7	1	0	67
Agree	111	199	55	1	2	368
Disagree	56	85	31	1	0	173
Unsure	65	70	45	0	1	181
PNA	8	18	4	1	0	31
Total	264	407	142	4	3	820

Prior user rights essential	Origin of applicant			Total
	EPC	JP	US	
DNA	30	21	16	67
Agree	223	79	66	368
Disagree	65	35	73	173
Unsure	110	26	45	181
PNA	24	2	5	31
Total	452	163	205	820

Prior user rights irrelevant	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	24	35	7	1	0	67
Agree	91	143	43	2	2	281
Disagree	87	163	52	0	1	303
Unsure	59	52	34	0	0	145
PNA	3	14	6	1	0	24
Total	264	407	142	4	3	820

Prior user rights irrelevant	Origin of applicant			Total
	EPC	JP	US	
DNA	30	21	16	67
Agree	128	77	76	281
Disagree	188	33	82	303
Unsure	91	29	25	145
PNA	15	3	6	24
Total	452	163	205	820

PURs/Invention in public domain	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	24	35	7	1	0	67
Agree	113	224	65	1	2	405
Disagree	90	98	36	1	1	226
Unsure	30	36	30	0	0	96
PNA	7	14	4	1	0	26
Total	264	407	142	4	3	820

PURs/Invention in public domain	Origin of applicant			Total
	EPC	JP	US	
DNA	30	21	16	67
Agree	240	92	73	405
Disagree	106	33	87	226
Unsure	58	15	23	96
PNA	18	2	6	26
Total	452	163	205	820

Question 9

In most countries, the grace period applies only to disclosures of the applicant's invention. Where an invention independently made by a third party is disclosed prior to **the filing date**, it forms part of the **prior art** and destroys the novelty of the applicant's invention.

In at least one country, this is not the case. Once the applicant has disclosed his or her invention, no disclosure of an invention independently made by a third party will **destroy the novelty** of the applicant's invention.

Having read this explanation, should the grace period protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing?

Please click on one answer below

- Yes
 No
 Unsure
 Prefer not to answer

Q9	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	13	17	4	0	0	34
Yes	154	162	65	1	1	383
No	69	189	51	3	2	314
Unsure	25	31	20	0	0	76
PNA	3	8	2	0	0	13
Total	264	407	142	4	3	820

. tab q9 bloc1 if q9~=-1

Q9	Origin of applicant			Total
	EPC	JP	US	
DNA	22	2	10	34
Yes	198	67	118	383
No	178	77	59	314
Unsure	48	13	15	76
PNA	6	4	3	13
Total	452	163	205	820

Question 10&10A

Please read the following statements about grace periods and say whether or not you agree with them. **ROTATE**

Please click on one answer in each of the rows below

Agree Disagree Unsure Prefer Not to Answer

The grace period should take into account both the goals of the patent system and the needs of the scientific/academic community

The grace period should protect inventors against the consequences of breach of confidence and theft of information.

A good reason for having a grace period is that it is user friendly for those who may not be knowledgeable about the patent system, including smaller businesses and individual inventors.

A grace period reduces the predictability and legal certainty of the patent system.

A good reason for not having a grace period is that it complicates the patent system.

The grace period should protect the first inventor who disclosed an invention against any interference from third parties in the time interval between first disclosure and filing. A subsequent patent should be able to stop the activities of both prior users **in good faith** and independent inventors having published their invention.

Q10A Please read the following three statements about grace periods and say whether or not you agree with them. **ROTATE (DP CODE ANSWERS IN RAW DATA AS FOLLOWS: AGREE TO ALL 3 = SUPPORTS GRACE PERIOD CONCEPT. AGREE TO LESS THAN 3 = DOES NOT SUPPORT GRACE PERIOD CONCEPT**

Please click on one answer in each of the rows below

Agree Disagree Unsure Prefer Not to Answer

The grace period should be defined so as to preserve maximum legal certainty.

The grace period should be defined so as to ensure that any inventor having a real choice, would choose to file first and then disclose.

The grace period should be defined to ensure that when **pre-filing disclosure** does occur, through accident or by choice, the inventor will be able to secure patent rights. [].....[].....[].....[]

Needs of system and academic community	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	182	262	123	2	3	572
Disagree	19	57	5	1	0	82
Unsure	25	31	5	0	0	61
PNA	8	7	2	0	0	17
Total	264	407	142	4	3	820

Needs of system and academic community	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	306	112	154	572
Disagree	54	13	15	82
Unsure	38	13	10	61
PNA	11	3	3	17
Total	452	163	205	820

Protection against breach of confidence /theft	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	181	248	94	1	2	526
Disagree	25	63	23	1	1	113
Unsure	22	39	15	0	0	76
PNA	6	7	3	1	0	17
Total	264	407	142	4	3	820

Protection against breach of confidence /theft	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	279	95	152	526
Disagree	80	20	13	113
Unsure	40	22	14	76
PNA	10	4	3	17
Total	452	163	205	820

GP is user friendly	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	177	206	97	1	1	482
Disagree	39	103	22	1	1	166
Unsure	13	42	13	1	1	70
PNA	5	6	3	0	0	14
Total	264	407	142	4	3	820

GP is user friendly	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	256	86	140	482
Disagree	106	36	24	166
Unsure	39	17	14	70
PNA	8	2	4	14
Total	452	163	205	820

GP reduces predictability and legal certainty	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	71	179	49	1	3	303
Disagree	98	116	54	2	0	270
Unsure	62	59	29	0	0	150
PNA	3	3	3	0	0	9
Total	264	407	142	4	3	820

GP reduces predictability and legal certainty	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	201	49	53	303
Disagree	122	52	96	270
Unsure	80	39	31	150
PNA	6	1	2	9
Total	452	163	205	820

GP complicates the patent system	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	92	205	41	1	3	342
Disagree	102	115	73	2	0	292
Unsure	35	35	18	0	0	88
PNA	5	2	3	0	0	10
Total	264	407	142	4	3	820

GP complicates the patent system	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	219	62	61	342
Disagree	136	56	100	292
Unsure	49	19	20	88
PNA	5	4	1	10
Total	452	163	205	820

Protecting first inventor	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	50	7	1	0	88
Agree	141	147	60	1	1	350
Disagree	41	140	36	1	1	219
Unsure	44	57	37	0	1	139
PNA	8	13	2	1	0	24
Total	264	407	142	4	3	820

Protecting first inventor	Origin of applicant			Total
	EPC	JP	US	
DNA	43	22	23	88
Agree	164	79	107	350
Disagree	141	39	39	219
Unsure	89	18	32	139
PNA	15	5	4	24
Total	452	163	205	820

Preserving maximum legal certainty	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	54	7	1	0	92
Agree	193	285	114	2	3	597
Disagree	4	21	3	0	0	28
Unsure	32	36	15	0	0	83
PNA	5	11	3	1	0	20
Total	264	407	142	4	3	820

Preserving maximum legal certainty	Origin of applicant			Total
	EPC	JP	US	
DNA	45	22	25	92
Agree	350	108	139	597
Disagree	14	6	8	28
Unsure	28	25	30	83
PNA	15	2	3	20
Total	452	163	205	820

Ensure filing first - disclosure later	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	54	7	1	0	92
Agree	163	240	82	0	1	486
Disagree	32	58	23	1	0	114
Unsure	35	46	25	2	1	109
PNA	4	9	5	0	1	19
Total	264	407	142	4	3	820

Ensure filing first - disclosure later	Origin of applicant			Total
	EPC	JP	US	
DNA	45	22	25	92
Agree	312	64	110	486
Disagree	32	39	43	114
Unsure	52	32	25	109
PNA	11	6	2	19
Total	452	163	205	820

Pre-filing disclosure protection	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	30	54	7	1	0	92
Agree	191	261	119	1	3	575
Disagree	14	60	4	1	0	79
Unsure	20	23	9	1	0	53
PNA	9	9	3	0	0	21
Total	264	407	142	4	3	820

Pre-filing disclosure protection	Origin of applicant			Total
	EPC	JP	US	
DNA	45	22	25	92
Agree	308	105	162	575
Disagree	53	19	7	79
Unsure	31	15	7	53
PNA	15	2	4	21
Total	452	163	205	820

Question 11-12

In principle, are you in favour of a grace period?

Please click on one answer below

- Yes
 No
 Unsure
 Prefer not to answer

Assuming that a grace period exists, in your view, who should bear the risks associated with a **pre-filing disclosure**?

Please click on one answer below

- The inventor or his **successor in title**
 Third parties
 Unsure
 Prefer not to answer

Q11	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
-2	17	30	4	0	0	51
1	196	224	108	3	3	534
2	34	114	17	1	0	166
3	16	35	12	0	0	63
4	1	4	1	0	0	6
Total	264	407	142	4	3	820

Q11	Origin of applicant			Total
	EPC	JP	US	
-2	30	3	18	51
1	252	123	159	534
2	126	23	17	166
3	42	11	10	63
4	2	3	1	6
Total	452	163	205	820

Q12	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	18	30	4	0	0	52
Inventor or successor	153	291	89	3	3	539
Third parties	34	37	16	1	0	88
Unsure	53	41	29	0	0	123
PNA	6	8	4	0	0	18
Total	264	407	142	4	3	820

Q12	Origin of applicant			Total
	EPC	JP	US	
DNA	30	3	19	52
Inventor or successor	283	133	123	539
Third parties	50	12	26	88
Unsure	76	12	35	123
PNA	13	3	2	18
Total	452	163	205	820

Q14-17

SHOW IF Q14 = 1ST ROTATION Considering the above table, if the **US definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?
SHOW IF Q14 NOT EQ 1ST ROTATION Please look at the table again. If the **US definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q14 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

SHOW Q15 NOT EQ 1ST ROTATION. Please look at the table again. If the **Japanese definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it? **SHOW IF Q15 = 1ST ROTATION** Considering the above table, if the **Japanese definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q15 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

SHOW IF Q16 NOT EQ 1ST ROTATION Please look at the table again. If the **safety net definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it? **SHOW IF Q16 = 1ST ROTATION** Considering the above table, if the **safety net definition** were the **only option** available for a grace period as an international norm, would you support it or oppose it?

SHOW TABLE HERE IF Q16 NOT EQ 1ST ROTATION

Please click on one answer below

- Support
- Oppose
- Unsure
- Prefer not to answer

Please look at the table one last time. If you had to **choose just one** of the three grace periods, the US, Japanese or the safety-net, which one would you choose?

SHOW TABLE HERE

Please click on one answer below

- US
- Japan
- Safety-net grace period
- None of the above

[] Unsure

[] Prefer not to answer

Q14	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	21	31	4	0	0	56
Support	116	117	61	1	1	296
Oppose	90	211	52	2	2	357
Unsure	34	34	21	0	0	89
PNA	3	14	4	1	0	22
Total	264	407	142	4	3	820

Q14	Origin of applicant			Total
	EPC	JP	US	
DNA	33	3	20	56
Support	112	29	155	296
Oppose	236	102	19	357
Unsure	60	20	9	89
PNA	11	9	2	22
Total	452	163	205	820

Q15	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	20	31	4	0	0	55
Support	98	187	74	1	3	363
Oppose	96	130	37	3	0	266
Unsure	46	46	24	0	0	116
PNA	4	13	3	0	0	20
Total	264	407	142	4	3	820

Q15	Origin of applicant			Total
	EPC	JP	US	
DNA	32	3	20	55
Support	180	107	76	363
Oppose	151	30	85	266
Unsure	79	15	22	116
PNA	10	8	2	20
Total	452	163	205	820

Q16	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	20	31	5	0	0	56
Support	90	163	65	2	2	322
Oppose	94	143	43	1	1	282
Unsure	55	58	27	0	0	140
PNA	5	12	2	1	0	20
Total	264	407	142	4	3	820

Q16	Origin of applicant			Total
	EPC	JP	US	
DNA	33	3	20	56
Support	166	86	70	322
Oppose	152	41	89	282
Unsure	89	26	25	140
PNA	12	7	1	20
Total	452	163	205	820

Q17	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	31	5	0	0	59
US	100	91	48	1	0	240
Japan	57	117	32	1	2	209
Safety-net	56	111	39	1	1	208
None of the above	13	33	5	0	0	51
Unsure	12	15	10	0	0	37
6	3	9	3	1	0	16
Total	264	407	142	4	3	820

Q17	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	20	59
US	86	18	136	240
Japan	113	77	19	209
Safety-net	141	47	20	208
None of the above	42	4	5	51
Unsure	25	8	4	37
6	10	5	1	16
Total	452	163	205	820

Question 18

Have you actually used the grace period for patents you have filed in the past?

Please click on any of the answers that apply to you

- Yes, in the US
 Yes, in Japan
 Yes, elsewhere
 No **EXCLUSIVE**
 Prefer not to answer **EXCLUSIVE**

Yes, in the US	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Number of respondents	82	142	75	1	1	301
Total	82	142	75	1	1	301

Yes, in the US	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	124	39	138	301
Total	124	39	138	301

Yes, in Japan	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Number of respondents	15	87	20	3	1	126
Total	15	87	20	3	1	126

Yes, in Japan	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	16	99	11	126
Total	16	99	11	126

Yes, elsewhere	Type of organisation				Total
	1.SME	2.Large	3.Uni	4.Other	
Number of respondents	17	32	13	1	63
Total	17	32	13	1	63

Yes, elsewhere	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	34	11	18	63
Total	34	11	18	63

No	Type of organisation				Total
	1.SME	2.Large	3.Uni	5.PNA	
Number of respondents	125	158	51	1	335
Total	125	158	51	1	335

No	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	255	45	35	335
Total	255	45	35	335

PNA	Type of organisation				Total
	1.SME	2.Large	3.Uni	4.Other	
Number of respondents	21	16	7	1	45
Total	21	16	7	1	45

PNA	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	24	10	11	45
Total	24	10	11	45

Question 19

ASK IF Q18 = ELSEWHERE ELSE GO TO Q20: Where did you use the grace period (please exclude the US, Japan and Europe)?

Please click on any of the answers that apply to you in the list below

Argentina	
Australia	
Brazil	
Canada	
China	
India	
Israel	
Indonesia	
Mexico	
Russian Federation	
Singapore	
South Africa	
South Korea	
Other (PLEASE SPECIFY)	
Unsure (EXCLUSIVE)	
Prefer not to answer (EXCLUSIVE)	

Argentina	Type of organisation	
	2.Large	Total
Number of respondents	2	2
Total	2	2

Argentina	Origin of applicant	
	EPC	Total
Number of respondents	2	2
Total	2	2

Australia	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	4	5	4	13
Total	4	5	4	13

Australia	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	5	3	5	13
Total	5	3	5	13

Brazil	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	1	3	1	5
Total	1	3	1	5

Brazil	Origin of applicant	
	EPC	Total
Number of respondents	5	5
Total	5	5

Canada	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	4	7	9	20
Total	4	7	9	20

Canada	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	8	3	9	20
Total	8	3	9	20

China	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	3	5	1	9
Total	3	5	1	9

China	Origin of applicant		Total
	EPC	US	
Number of respondents	7	2	9
Total	7	2	9

	Type of organisation		Total
	1.SME	3.Uni	
India			
Number of respondents	2	1	3
Total	2	1	3

	Origin of applicant		Total
	EPC	US	
India			
Number of respondents	1	2	3
Total	1	2	3

	Type of organisation		Total
	1.SME	3.Uni	
Israel			
Number of respondents	2	1	3
Total	2	1	3

	Origin of applicant		Total
	EPC	US	
Israel			
Number of respondents	1	2	3
Total	1	2	3

	Type of organisation	
	1.SME	Total
Indonesia		
Number of respondents	1	1
Total	1	1

	Origin of applicant	
	EPC	Total
Indonesia		
Number of respondents	1	1
Total	1	1

	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Mexico				
Number of respondents	1	1	1	3
Total	1	1	1	3

	Origin of applicant		Total
	EPC	US	
Mexico			
Number of respondents	2	1	3
Total	2	1	3

	Type of organisation		Total
	1.SME	2.Large	
Russian Federation			
Number of respondents	1	1	2
Total	1	1	2

	Origin of applicant	
	EPC	Total
Russian Federation		
Number of respondents	2	2
Total	2	2

Singapore	Type of organisation	
	1.SME	Total
Number of respondents	1	1
Total	1	1

Singapore	Origin of applicant	
	US	Total
Number of respondents	1	1
Total	1	1

South Africa	Type of organisation		
	1.SME	3.Uni	Total
Number of respondents	1	1	2
Total	1	1	2

South Africa	Origin of applicant	
	US	Total
Number of respondents	2	2
Total	2	2

South Korea	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	3	5	5	13
Total	3	5	5	13

South Korea	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	3	8	2	13
Total	3	8	2	13

Other	1.SME	2.Large	3.Uni	4.Other	Total
Number of respondents	1	9	1	1	12
Total	1	9	1	1	12

Other	Origin of applicant		Total
	EPC	JP	
Number of respondents	10	2	12
Total	10	2	12

Unsure	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	4	4	8
Total	4	4	8

Unsure	Origin of applicant		Total
	EPC	US	
Number of respondents	4	4	8
Total	4	4	8

PNA	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	3	6	9
Total	3	6	9

PNA	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	5	2	2	9
Total	5	2	2	9

Question 20

ASK IF Q18 = YES IN THE US OR YES IN JAPAN OR YES ELSEWHERE, ELSE GO TO Q27. In your experience of obtaining patents whilst invoking the grace period, did this lead to extra procedural steps with the patent office concerned?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q20	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
Yes	32	71	28	2	1	134
No	46	107	34	1	1	189
Unsure	16	19	17	0	0	52
PNA	1	4	0	0	0	5
Total	118	233	84	3	2	440

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Q20	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
Yes	44	55	35	134
No	64	33	92	189
Unsure	28	14	10	52
PNA	2	2	1	5
Total	173	108	159	440

Question 21

What were your motivations for using the grace period?

Please click on any of the answers that apply to you

DO NOT ROTATE

- Out of necessity (human error, breach of confidence)
- To obtain financing to develop the invention
- To test or improve the invention
- To promote and / or sell the invention
- To be the first to publish scientific results in an academic publication
- To signal technological leadership and put pressure on competitors
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....

Unsure **EXCLUSIVE**

Prefer not to answer exclusive

Necessity	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Number of respondents	48	120	57	1	1	227
Total	48	120	57	1	1	227

Necessity	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	99	43	85	227
Total	99	43	85	227

Obtain financing	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	21	8	15	44
Total	21	8	15	44

Obtain financing	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	10	2	32	44
Total	10	2	32	44

Test or improve	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	37	43	17	97
Total	37	43	17	97

Test or improve	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	21	2	74	97
Total	21	2	74	97

Promote or sell	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	27	56	13	96
Total	27	56	13	96

Promote or sell	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	26	23	47	96
Total	26	23	47	96

First to academic publication	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Number of respondents	26	51	48	3	1	129
Total	26	51	48	3	1	129

First to academic publication	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	30	50	49	129
Total	30	50	49	129

Pressure on competitors	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	11	16	3	30
Total	11	16	3	30

Pressure on competitors	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	8	6	16	30
Total	8	6	16	30

Other	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	3	10	2	15
Total	3	10	2	15

Other	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	5	6	4	15
Total	5	6	4	15

Question 22

How was your invention disclosed to the public before you filed your patent applications?

Please click on any of the answers that apply to you

ROTATE

- Error on the part of the inventor/person entitled to file, or an employee
- Breach of confidence
- Disclosure at a trade show
- Disclosure during business negotiations
- Disclosure during trials/public experiments
- Disclosure in an academic communication (article, conference, etc.)
- Disclosure by putting the product or service on the market

[] Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....

[] Unsure **EXCLUSIVE DO NOT ROTATE**

[] Prefer not to answer **EXCLUSIVE DO NOT ROTATE**

Error	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	15	49	26	90
Total	15	49	26	90

Error	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	34	12	44	90
Total	34	12	44	90

Breach of confidence	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	4	9	3	16
Total	4	9	3	16

Breach of confidence	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	3	2	11	16
Total	3	2	11	16

Trade show	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	16	60	14	90
Total	16	60	14	90

Trade show	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	20	26	44	90
Total	20	26	44	90

Business negotiations	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	35	38	6	79
Total	35	38	6	79

Business negotiations	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	22	6	51	79
Total	22	6	51	79

Trials/public experiments	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	15	34	13	62
Total	15	34	13	62

Trials/public experiments	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	21	1	40	62
Total	21	1	40	62

Academic communication	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
Number of respondents	36	79	74	2	2	193
Total	36	79	74	2	2	193

Academic communication	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	67	67	59	193
Total	67	67	59	193

Putting in market	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	12	56	3	71
Total	12	56	3	71

Putting in market	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	22	11	38	71
Total	22	11	38	71

Other	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	2	3	1	6
Total	2	3	1	6

Other	Origin of applicant		Total
	EPC	US	
Number of respondents	4	2	6
Total	4	2	6

Unsure	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	3	2	5
Total	3	2	5

Unsure	Origin of applicant		Total
	EPC	US	
Number of respondents	3	2	5
Total	3	2	5

PNA	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	1	5	6
Total	1	5	6

PNA	Origin of applicant		Total
	EPC	US	
Number of respondents	2	4	6
Total	2	4	6

Question 23-27

ASK IF Q18 = YES IN THE US, ELSE GO TO Q25 What percentage of the total number of patents you have filed in the US in the last five years used the US grace period?

Please click on one answer below

- Less than 0.1%
- Between 0.1% and 1%
- Between 1% and 5%
- Between 5% and 10%
- Between 10% and 20%
- More than 20% **(PLEASE SPECIFY – MUST BE NUMERIC RESPONSE BETWEEN 21% AND 100% ONLY)**

.....

- Unsure **EXCLUSIVE**
- Prefer not to answer **EXCLUSIVE**

ASK IF ONLY Q23 NOT EQ UNSURE OR NOT PREFER NOT TO ANSWER, ELSE GO TO Q25 You have indicated that approximately **[INSERT ANSWER TO Q23]** of the patents you have filed in the US in the last five years used the grace period. What percentage of these patents would you have also filed in Europe, had a “**safety net grace period**” been available there?

Please click on one answer below

- None of these patents
- Less than 25% of these patents
- Between 25% and 50% of these patents
- Between 51% and 75% of these patents
- Between 76% and 100% of these patents
- All of these patents
- Unsure
- Prefer not to answer

ASK IF Q18 = YES IN JAPAN, ELSE GO TO Q27. What percentage of the total number of patents you have filed in Japan in the last five years used the Japanese grace period?

Please click on one answer below

- Less than 0.1%
- Between 0.1% and 1%
- Between 1% and 5%
- Between 5% and 10%
- Between 10% and 20%
- More than 20% (**PLEASE SPECIFY– MUST BE NUMERIC RESPONSE BETWEEN 21% AND 100% ONLY**)

-
- Unsure **EXCLUSIVE**
 - Prefer not to answer **EXCLUSIVE**

ASK IF ONLY Q25 NOT UNSURE OR NOT PREFER NOT TO ANSWER, ELSE GO TO Q27. You have indicated that approximately **[INSERT ANSWER TO Q25]** of the patents you have filed in Japan in the last five years used the grace period. What percentage of these patents would you have also filed in Europe, had a “**safety net grace period**” been available there?

Please click on one answer below

- None of these patents
- Less than 25% of these patents
- Between 25% and 50% of these patents
- Between 51% and 75% of these patents
- Between 76% and 100% of these patents
- All of these patents
- Unsure
- Prefer not to answer

ASK ONLY IF Q18 = NO OR PREFER NOT TO ANSWER ELSE GO TO Q29 Have you ever felt the need to file a patent application after you disclosed a research and/or product development result?

Please click on one answer below

Yes

No

Unsure

Prefer not to answer

Q23	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
<0.1%	14	33	5	1	0	53
Between 0.1% and 1%	9	35	11	0	0	55
Between 1% and 5%	16	31	21	0	0	68
Between 5% and 10%	11	15	14	0	0	40
Between 10% and 20%	13	10	11	0	0	34
More than 20%	7	4	9	0	0	20
Unsure	8	10	4	0	1	23
PNA	4	4	0	0	0	8
Total	105	174	80	1	1	361

Q23	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
<0.1%	20	13	20	53
Between 0.1% and 1%	34	9	12	55
Between 1% and 5%	31	9	28	68
Between 5% and 10%	14	4	22	40
Between 10% and 20%	7	0	27	34
More than 20%	4	1	15	20
Unsure	11	3	9	23
PNA	3	0	5	8
Total	159	43	159	361

Q24	Type of organisation				Total
	1.SME	2.Large	3.Uni	4.Other	
DNA	23	32	5	0	60
None of these patents	8	18	5	0	31
Less than 25%	9	14	13	0	36
Between 25% and 50%	5	10	8	0	23
Between 51% and 75%	3	13	5	0	21
Between 76% and 100%	4	19	6	0	29
All of these patents	29	46	28	1	104
Unsure	10	7	6	0	23
PNA	2	1	0	0	3
Total	93	160	76	1	330

Q24	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
None of these patents	13	4	14	31
Less than 25%	9	5	22	36
Between 25% and 50%	3	3	17	23
Between 51% and 75%	5	1	15	21
Between 76% and 100%	12	7	10	29
All of these patents	62	11	31	104
Unsure	4	5	14	23
PNA	2	0	1	3
Total	145	40	145	330

Q25	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
<0.1%	2	38	2	2	0	44
Between 0.1% and 1%	3	21	4	1	1	30
Between 1% and 5%	7	20	2	0	0	29
Between 5% and 10%	1	1	6	0	0	8
Between 10% and 20%	1	2	4	0	0	7
Unsure	1	5	2	0	0	8
Total	38	119	25	3	1	186

Q25	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
<0.1%	6	34	4	44
Between 0.1% and 1%	7	20	3	30
Between 1% and 5%	1	27	1	29
Between 5% and 10%	0	8	0	8
Between 10% and 20%	1	5	1	7
Unsure	1	5	2	8
Total	51	103	32	186

Q26	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
None of these patents	1	8	2	1	0	12
Less than 25%	2	21	5	0	0	28
Between 25% and 50%	1	2	3	0	0	6
Between 51% and 75%	0	2	2	0	0	4
Between 76% and 100%	2	6	2	0	0	10
All of these patents	8	25	3	1	0	37
Unsure	0	17	1	1	1	20
PNA	0	1	0	0	0	1
Total	37	114	23	3	1	178

Q26	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
None of these patents	2	9	1	12
Less than 25%	1	25	2	28
Between 25% and 50%	0	5	1	6
Between 51% and 75%	0	4	0	4
Between 76% and 100%	2	6	2	10
All of these patents	10	25	2	37
Unsure	0	19	1	20
PNA	0	1	0	1
Total	50	98	30	178

Q27	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
Yes	78	97	38	0	0	213
No	50	57	9	0	0	116
Unsure	11	5	7	0	1	24
PNA	7	15	4	1	0	27
Total	169	206	63	1	1	440

Q27	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
Yes	154	37	22	213
No	92	7	17	116
Unsure	17	6	1	24
PNA	16	5	6	27
Total	314	59	67	440

Question 28

ASK ONLY IF Q27 = YES ELSE GO TO Q29 How did this **pre-filing disclosure** occur?

Please click on any of the answers that apply to you

ROTATE

- Error on the part of the inventor/person entitled to file, or an employee
- Breach of confidence
- Disclosure at a trade show
- Disclosure during business negotiations
- Disclosure during trials/public experiments
- Disclosure in an academic communication (article, conference, etc.)
- Disclosure by putting the product or service on the market
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

.....

- Unsure **DO NOT ROTATE EXCLUSIVE**
- Prefer not to answer **DO NOT ROTATE EXCLUSIVE**

Error	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	11	22	7	40
Total	11	22	7	40

Error	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	33	1	6	40
Total	33	1	6	40

Breach of confidence	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	8	10	2	20
Total	8	10	2	20

Breach of confidence	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	15	1	4	20
Total	15	1	4	20

Trade show	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	18	36	7	61
Total	18	36	7	61

Trade show	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	47	7	7	61
Total	47	7	7	61

Business negotiations	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	31	39	3	73
Total	31	39	3	73

Business negotiations	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	50	15	8	73
Total	50	15	8	73

Trials/public experiments	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	18	21	3	42
Total	18	21	3	42

Trials/public experiments	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	34	2	6	42
Total	34	2	6	42

Academic communication	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	29	35	32	96
Total	29	35	32	96

Academic communication	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	77	13	6	96
Total	77	13	6	96

Putting in market	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	21	36	3	60
Total	21	36	3	60

Putting in market	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	43	12	5	60
Total	43	12	5	60

other	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	3	1	4
Total	3	1	4

other	Origin of applicant		Total
	EPC	US	
Number of respondents	3	1	4
Total	3	1	4

Unsure	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	3	1	1	5
Total	3	1	1	5

Unsure	Origin of applicant		Total
	EPC	JP	
Number of respondents	4	1	5
Total	4	1	5

PNA	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	5	8	2	15
Total	5	8	2	15

PNA	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	9	5	1	15
Total	9	5	1	15

Question 29

If a **"safety net grace period"** were introduced in Europe, would you make **pre-filing disclosures** (more) regularly in Europe?

Please click on one answer below

- Yes
- No
- Unsure
- Prefer not to answer

Q29	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	32	5	0	0	60
Yes	79	55	45	0	0	179
No	76	205	46	2	2	331
Unsure	80	106	46	1	1	234
PNA	6	9	0	1	0	16
Total	264	407	142	4	3	820

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. tab q29 bloc1 if q29~=-1
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Q29	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	21	60
Yes	116	11	52	179
No	176	86	69	331
Unsure	118	55	61	234
PNA	7	7	2	16
Total	452	163	205	820

Question 30

ASK IF Q29 = YES ELSE GO TO Q32 Why would you make **pre-filing disclosures** (more) regularly in Europe?

Please click on any of the answers that apply to you

DO NOT ROTATE

- To obtain financing to develop the invention
- To test or improve the invention
- To promote and / or sell the invention
- To be the first to publish scientific results in an academic publication
- To signal technological leadership and put pressure on competitors
- Other **(PLEASE SPECIFY) DO NOT ROTATE**

-
- Unsure **EXCLUSIVE**
 - Prefer not to answer **EXCLUSIVE**

Obtain financing	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	37	12	30	79
Total	37	12	30	79

Obtain financing	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	55	4	20	79
Total	55	4	20	79

Test or improve	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	48	30	22	100
Total	48	30	22	100

Test or improve	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	65	2	33	100
Total	65	2	33	100

Promote or sell	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	50	30	22	102
Total	50	30	22	102

Promote or sell	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	71	3	28	102
Total	71	3	28	102

First to academic publication	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	33	20	38	91
Total	33	20	38	91

First to academic publication	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	57	7	27	91
Total	57	7	27	91

Pressure on competitors	Type of organisation			Total
	1.SME	2.Large	3.Uni	
Number of respondents	28	16	5	49
Total	28	16	5	49

Pressure on competitors	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	35	1	13	49
Total	35	1	13	49

other	Type of organisation		Total
	1.SME	2.Large	
Number of respondents	2	1	3
Total	2	1	3

other	Origin of applicant		Total
	EPC	US	
Number of respondents	2	1	3
Total	2	1	3

Unsure	Type of organisation		Total
	2.Large	3.Uni	
Number of respondents	4	1	5
Total	4	1	5

Unsure	Origin of applicant			Total
	EPC	JP	US	
Number of respondents	3	1	1	5
Total	3	1	1	5

PNA	Type of organisation	
	2.Large	Total
Number of respondents	1	1
Total	1	1

PNA	Origin of applicant	
	EPC	Total
Number of respondents	1	1
Total	1	1

Question 31

How would you disclose your inventions to the public in Europe before filing your patent applications there?

Please click on any of the answers that apply to you

ROTATE

- Disclosure at a trade show
 Disclosure during business negotiations
 Disclosure during trials/public experiments
 Disclosure in an academic communication (article, conference, etc.)
 Disclosure by putting the product or service on the market
 Other, **(PLEASE SPECIFY) DO NOT ROTATE**

- Unsure **DO NOT ROTATE EXCLUSIVE**
 Prefer not to answer **DO NOT ROTATE EXCLUSIVE**

Trade show	Type of organisation			Total
	1.SME	2.Large	3.Uni	
1	41	31	12	84
Total	41	31	12	84

Trade show	Origin of applicant			Total
	EPC	JP	US	
1	58	2	24	84
Total	58	2	24	84

Business negotiations	Type of organisation			Total
	1.SME	2.Large	3.Uni	
1	50	30	16	96
Total	50	30	16	96

Business negotiations	Origin of applicant			Total
	EPC	JP	US	
1	63	1	32	96
Total	63	1	32	96

Trials/public experiments	Type of organisation			Total
	1.SME	2.Large	3.Uni	
1	32	23	16	71
Total	32	23	16	71

Trials/public experiments	Origin of applicant		Total
	EPC	US	
1	44	27	71
Total	44	27	71

Academic communication	Type of organisation			Total
	1.SME	2.Large	3.Uni	
1	40	26	44	110
Total	40	26	44	110

Academic communication	Origin of applicant			Total
	EPC	JP	US	
1	74	4	32	110
Total	74	4	32	110

Putting in market	Type of organisation			Total
	1.SME	2.Large	3.Uni	
1	37	22	3	62
Total	37	22	3	62

Putting in market	Origin of applicant			Total
	EPC	JP	US	
1	37	3	22	62
Total	37	3	22	62

Other	Type of organisation	
	1.SME	Total
1	1	1
Total	1	1

Other	Origin of applicant	
	EPC	Total
1	1	1
Total	1	1

Unsure	Type of organisation		Total
	2.Large	3.Uni	
1	3	1	4
Total	3	1	4

Unsure	Origin of applicant			Total
	EPC	JP	US	
1	2	1	1	4
Total	2	1	1	4

PNA	Type of organisation	
	2.Large	Total
1	1	1
Total	1	1

PNA	Origin of applicant	
	EPC	Total
1	1	1
Total	1	1

Question 32-34

If a grace period were adopted in Europe and if it protected you from any interference from third parties as a result of your **pre-filing disclosure**, which of the following would you do?

Please click on one answer below

- Use the grace period often
- Use the grace period occasionally
- Generally, try to keep your invention secret and file a patent application as quickly as possible
- Other (**PLEASE SPECIFY**)

.....

- Unsure
- Prefer not to answer

If a grace period were adopted in Europe where disclosures prior to the **filing date** by independent inventors of their own inventions **destroyed the novelty** of your invention, which of the following would you do?

Please click on one answer below

- Use the grace period often
- Use the grace period occasionally
- Generally, try to keep your invention secret and file a patent application as quickly as possible
- Other (**PLEASE SPECIFY**)

.....

- Unsure
- Prefer not to answer

Assume that a grace period is adopted in Europe where third parties acting **in good faith** could obtain **prior user rights** based on knowledge of your invention derived as a result of it having been made public prior to filing. These third parties could then continue to use the invention after the patent has been granted. Which of the following would you do?

Please click on one answer below

- Use the grace period often
- Use the grace period occasionally
- Generally, try to keep your invention secret and file a patent application as quickly as possible
- Other (**PLEASE SPECIFY**)

.....

- Unsure
- Prefer not to answer

Q32N	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
-2	37	57	8	1	0	103
1	43	23	27	1	1	95
2	65	85	36	0	0	186
3	99	205	61	1	2	368
4	4	6	3	0	0	13
5	12	24	7	0	0	43
6	4	7	0	1	0	12
Total	264	407	142	4	3	820

Q32N	origin of applicant			Total
	EPC	JP	US	
-2	50	23	30	103
1	56	9	30	95
2	107	35	44	186
3	206	79	83	368
4	6	2	5	13
5	20	12	11	43
6	7	3	2	12
Total	452	163	205	820

Q33N	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
-2	37	57	8	1	0	103
1	26	13	22	0	0	61
2	32	53	22	0	0	107
3	144	241	78	2	3	468
4	4	6	2	0	0	12
5	17	31	10	0	0	58
6	4	6	0	1	0	11
Total	264	407	142	4	3	820

Q33N	origin of applicant			Total
	EPC	JP	US	
-2	50	23	30	103
1	36	10	15	61
2	68	21	18	107
3	252	91	125	468
4	6	1	5	12
5	33	15	10	58
6	7	2	2	11
Total	452	163	205	820

Q34N	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
-2	37	57	8	1	0	103
1	14	11	8	0	0	33
2	29	39	30	0	0	98
3	162	262	84	2	3	513
4	3	3	2	0	0	8
5	15	26	7	0	0	48
6	4	9	3	1	0	17
Total	264	407	142	4	3	820

Q34N	origin of applicant			Total
	EPC	JP	US	
-2	50	23	30	103
1	22	6	5	33
2	61	21	16	98
3	277	95	141	513
4	3	0	5	8
5	28	13	7	48
6	11	5	1	17
Total	452	163	205	820

Question 35-42

Have you ever used technology which was patented outside Europe, but not in Europe?

Please click on one answer below

- Yes
 No
 Unsure
 Prefer not to answer

Q35	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Yes	75	177	45	2	2	301
No	98	77	52	0	0	227
Unsure	55	92	36	1	1	185
PNA	13	28	4	1	0	46
Total	264	407	142	4	3	820

Q35	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Yes	124	69	108	301
No	168	32	27	227
Unsure	102	45	38	185
PNA	23	13	10	46
Total	452	163	205	820

ASK IF Q35 = YES ELSE GO TO Q36A. To your knowledge, was the lack of a grace period in Europe a key reason for not seeking patent protection of that technology in Europe?

Please click on one answer below

- Yes
 No
 Unsure
 Prefer not to answer

Q36	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Yes	17	44	22	0	0	83
No	39	113	14	2	2	170
Unsure	18	20	8	0	0	46
PNA	1	0	1	0	0	2
Total	98	210	50	2	2	362

Q36	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Yes	27	9	47	83
No	79	47	44	170
Unsure	18	13	15	46
PNA	0	0	2	2
Total	159	73	130	362

Legal Uncertainty

If a grace period were to be introduced in Europe, this would create greater legal uncertainty for all stakeholders of the patent system. This is due to the fact that, after disclosure of an invention, depending on the duration of the grace period, it would take longer before third parties could know whether a patent has been filed for the subject matter or whether the invention is in **the public domain**.

Would you say the grace period has given rise to issues in litigation or various review procedures available post-grant in the US and Japan?

Please click on one answer below

- Often
 Sometimes
 Rarely
 Never
 Unsure
 Prefer not to answer

Q37	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Often	15	23	2	0	0	40
Sometimes	44	76	33	1	1	155
Rarely	38	83	27	1	1	150
Never	7	21	7	0	0	35
Unsure	127	152	62	1	1	343
PNA	10	19	6	1	0	36
Total	264	407	142	4	3	820

Q37	origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Often	32	1	7	40
Sometimes	91	25	39	155
Rarely	36	55	59	150
Never	5	19	11	35
Unsure	225	56	62	343
PNA	28	3	5	36
Total	452	163	205	820

If a grace period were introduced in Europe, would you expect the cost of **freedom to operate opinions** to increase, decrease or remain the same?

Please click on one answer below

- Increase
 Decrease
 Remain the same
 Unsure
 Prefer not to answer

Q38	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Increase	105	176	64	1	2	348
Decrease	8	0	0	0	0	8
Remain the same	63	114	37	1	0	215
Unsure	61	78	34	2	1	176
PNA	4	6	2	0	0	12
Total	264	407	142	4	3	820

Q38	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Increase	221	60	67	348
Decrease	6	0	2	8
Remain the same	99	42	74	215
Unsure	82	55	39	176
PNA	9	2	1	12
Total	452	163	205	820

If a grace period were introduced in Europe, would you expect the cost of litigation to increase, decrease or remain the same?

Please click on one answer below

- Increase
 Decrease
 Remain the same
 Unsure
 Prefer not to answer

Q39	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Increase	104	174	58	2	1	339
Decrease	9	2	1	0	0	12
Remain the same	70	111	42	1	1	225
Unsure	55	80	35	1	1	172
PNA	3	7	1	0	0	11
Total	264	407	142	4	3	820

Q39	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Increase	221	59	59	339
Decrease	9	1	2	12
Remain the same	102	39	84	225
Unsure	77	58	37	172
PNA	8	2	1	11
Total	452	163	205	820

How would a grace period affect the speed at which you adopt or further develop new technology that was not developed by **INSERT NAME OF COMPANY FROM SAMPLE?**

Please click on one answer below

- We would adopt earlier
 We would adopt later
 Not applicable to us
 Unsure
 Prefer not to answer

Q40	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
Adopt earlier	29	32	6	0	0	67
Adopt later	16	39	5	0	0	60
Not applicable	92	114	80	1	1	288
Unsure	88	160	39	1	2	290
PNA	16	29	7	2	0	54
Total	264	407	142	4	3	820

Q40	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
Adopt earlier	33	22	12	67
Adopt later	42	8	10	60
Not applicable	167	44	77	288
Unsure	140	76	74	290
PNA	35	9	10	54
Total	452	163	205	820

Thinking only about yourself, please rate your own knowledge of the patent system.

Please click on one answer below

I know nothing about it

I know a little about it, but I have never had any experience with it

I have some experience of it, but do not understand much about it

I consider myself quite well informed, I have quite a lot of experience of using of the patent system but I would not call myself a patent expert

I consider myself very well informed; I am a very experienced user of the patent system. I would call myself a patent expert

Prefer not to answer

Q41	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
DNA	23	33	5	0	0	61
No knowledge	4	0	1	0	0	5
Limited knowledge - n	9	6	2	0	0	17
Some experience - no	47	43	17	0	0	107
well informed, a lot	135	127	74	2	2	340
Very well informed, v	39	177	37	2	1	256
PNA	7	21	6	0	0	34
Total	264	407	142	4	3	820

Q41	Origin of applicant			Total
	EPC	JP	US	
DNA	35	4	22	61
No knowledge	3	0	2	5
Limited knowledge - n	8	8	1	17
Some experience - no	53	40	14	107
well informed, a lot	184	60	96	340
Very well informed, v	150	38	68	256
PNA	19	13	2	34
Total	452	163	205	820

We really appreciate the time that you have given us in answering these questions. Sometimes we may need to contact respondents to clarify some of their answers or to ask follow up questions on the same topic. Are you happy for us to do so?

Please click on one answer below

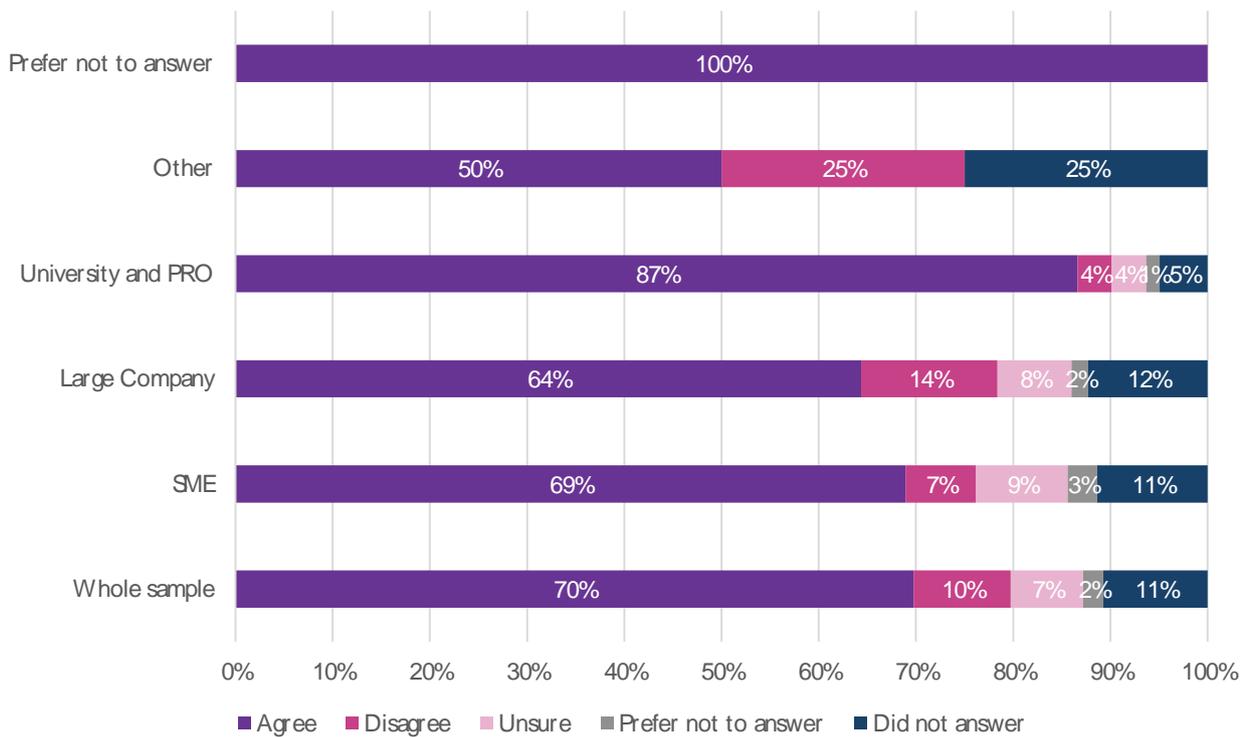
- Yes for clarification and follow up questions on the same topic
 Yes for clarification only
 Yes to ask follow up questions on the same topic only
 No
 Prefer not to answer

QRECONTACT	Type of organisation					Total
	1.SME	2.Large	3.Uni	4.Other	5.PNA	
-2	23	33	5	0	0	61
1	106	131	64	1	1	303
2	35	65	17	0	1	118
3	8	11	4	0	0	23
4	83	151	44	2	1	281
5	9	16	8	1	0	34
Total	264	407	142	4	3	820
QRECONTACT	Origin of applicant			Total		
	EPC	JP	US			
-2	35	4	22	61		
1	164	48	91	303		
2	67	30	21	118		
3	11	8	4	23		
4	154	66	61	281		
5	21	7	6	34		
Total	452	163	205	820		

Appendix 3: Detailed Charts

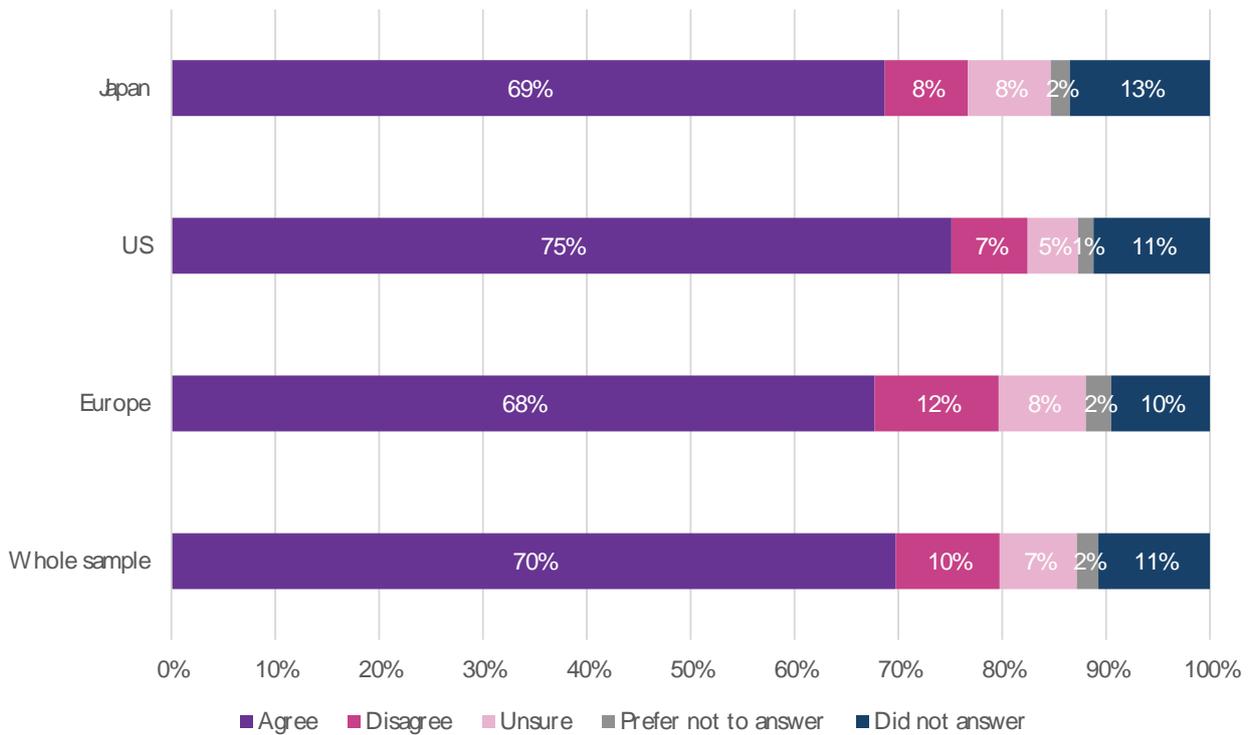
This appendix contains detailed charts for each possible response to Q10 and Q10A of the survey.

Figure 0.1: Should the grace period take into account both the goals of the patent system and the needs of the scientific/academic community? Responses by type of organisation



Note: The figure presented above is based on 820 responses.

Figure 0.2: Should the grace period take into account both the goals of the patent system and the needs of the scientific/academic community? Responses by region of origin



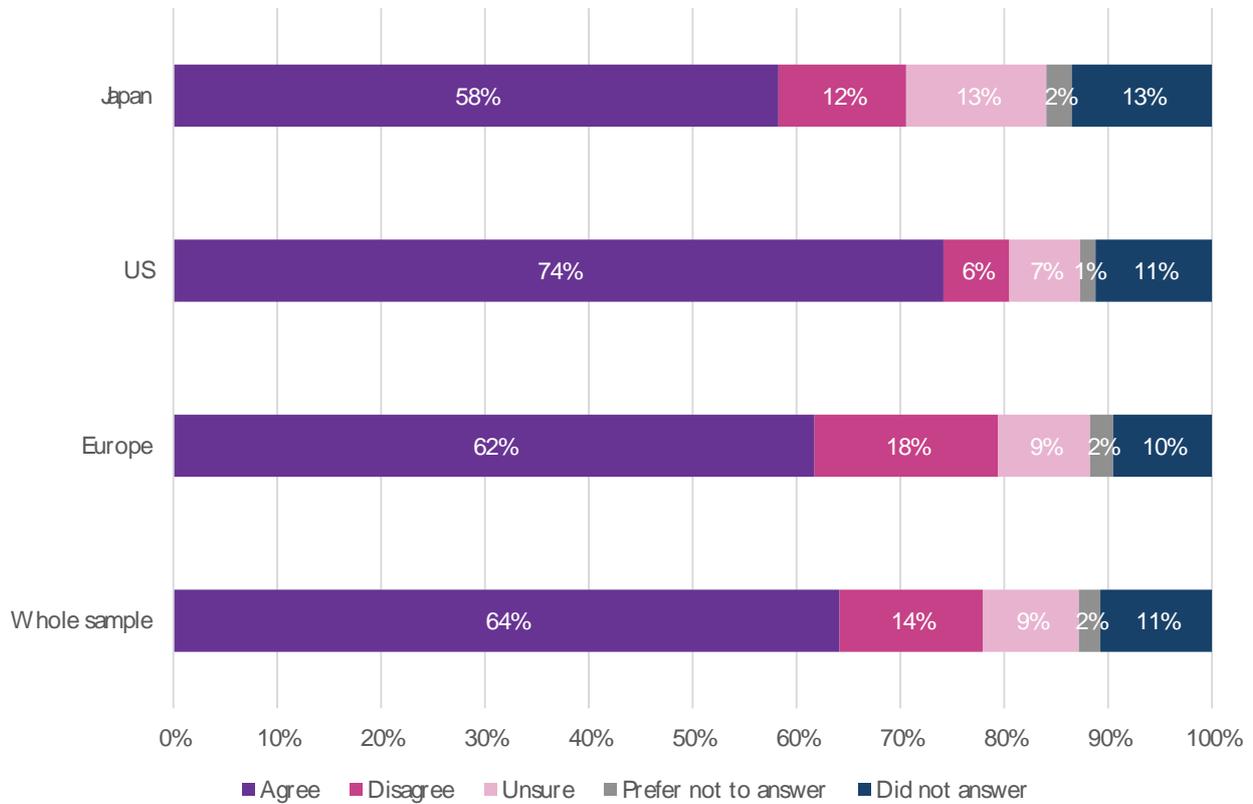
Note: The figure presented above is based on 820 responses.

Figure 0.3: Should the grace period protect inventors against the consequences of breach of confidence and theft of information? Responses by type of organisation



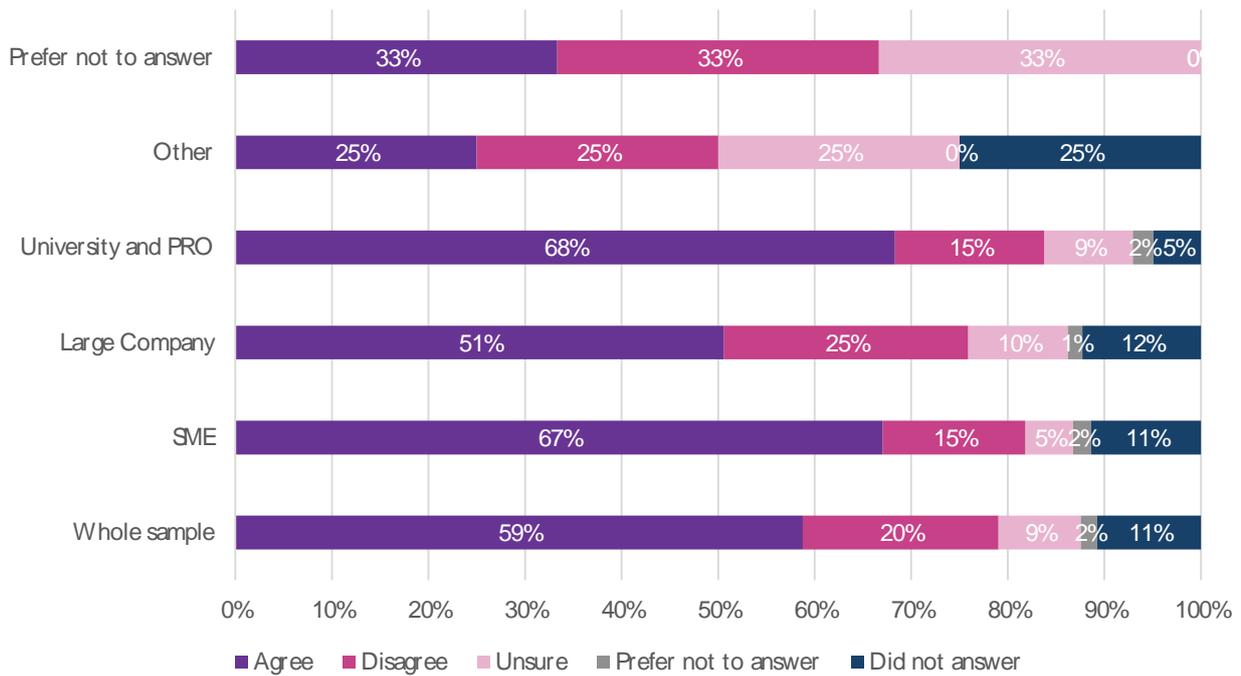
Note: The figure presented above is based on 820 responses.

Figure 0.4: Should the grace period protect inventors against the consequences of breach of confidence and theft of information? Responses by region of origin



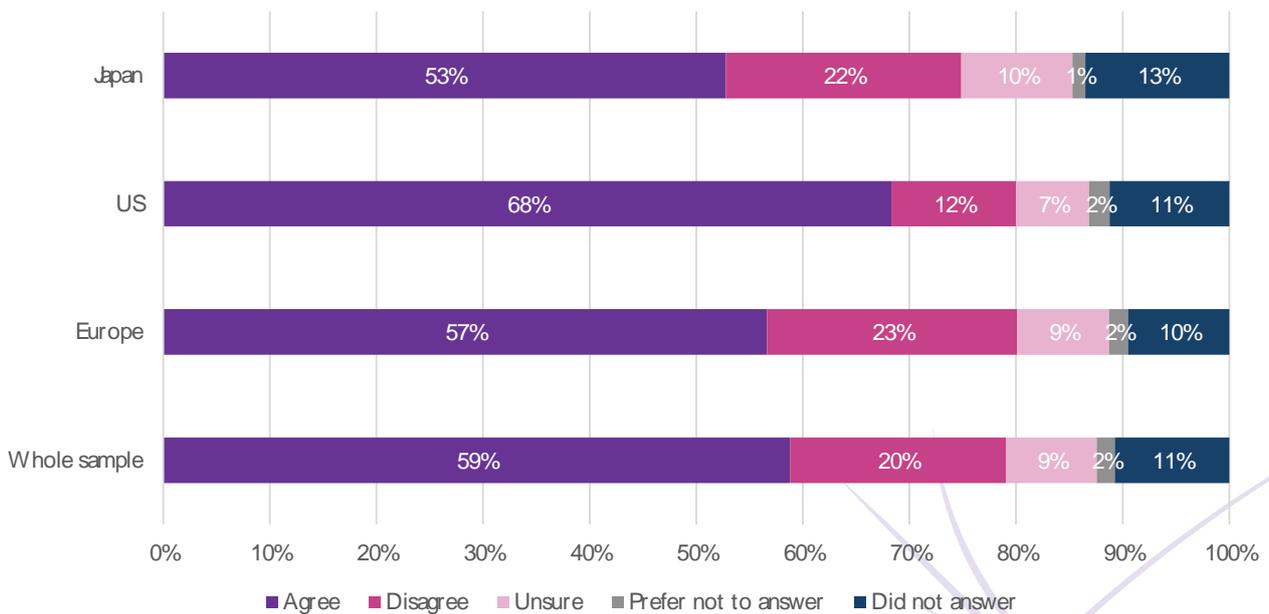
Note: The figure presented above is based on 820 responses.

Figure 0.5: Is a good reason for having a grace period that it is user friendly for those who may not be knowledgeable about the patent system, including smaller businesses and individual inventors? Responses by type of organisation



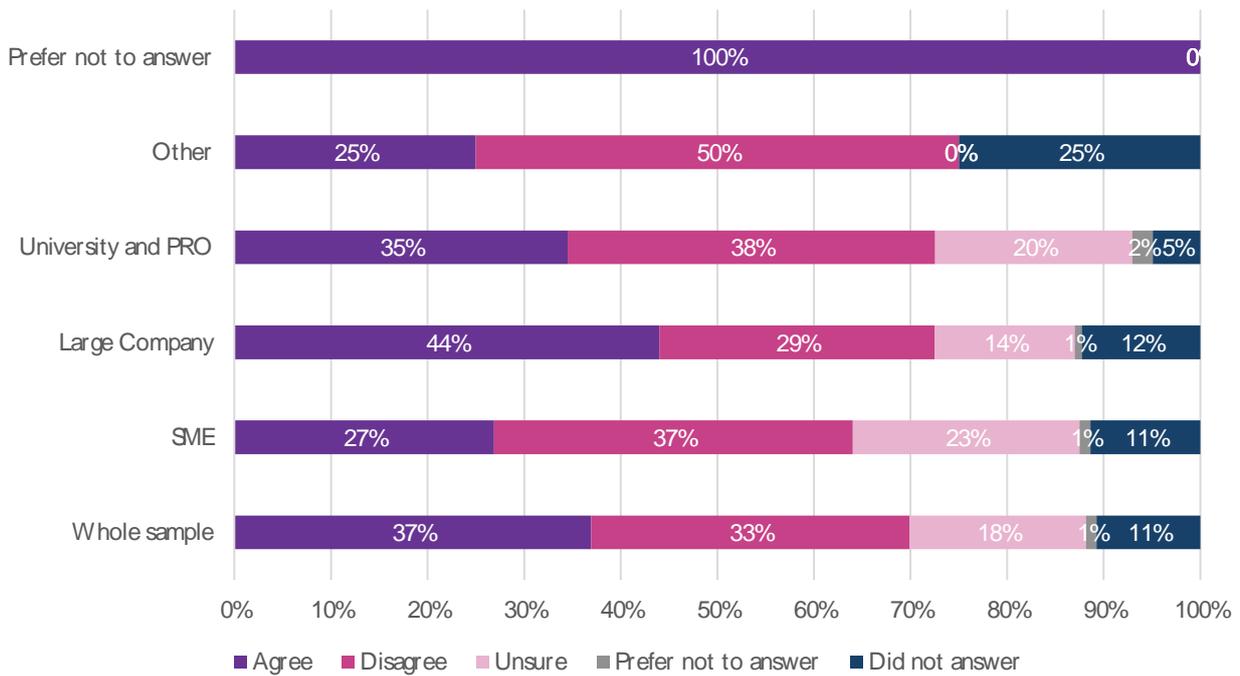
Note: The figure presented above is based on 820 responses.

Figure 0.6: Is a good reason for having a grace period that it is user friendly for those who may not be knowledgeable about the patent system, including smaller businesses and individual inventors? Responses by region of origin



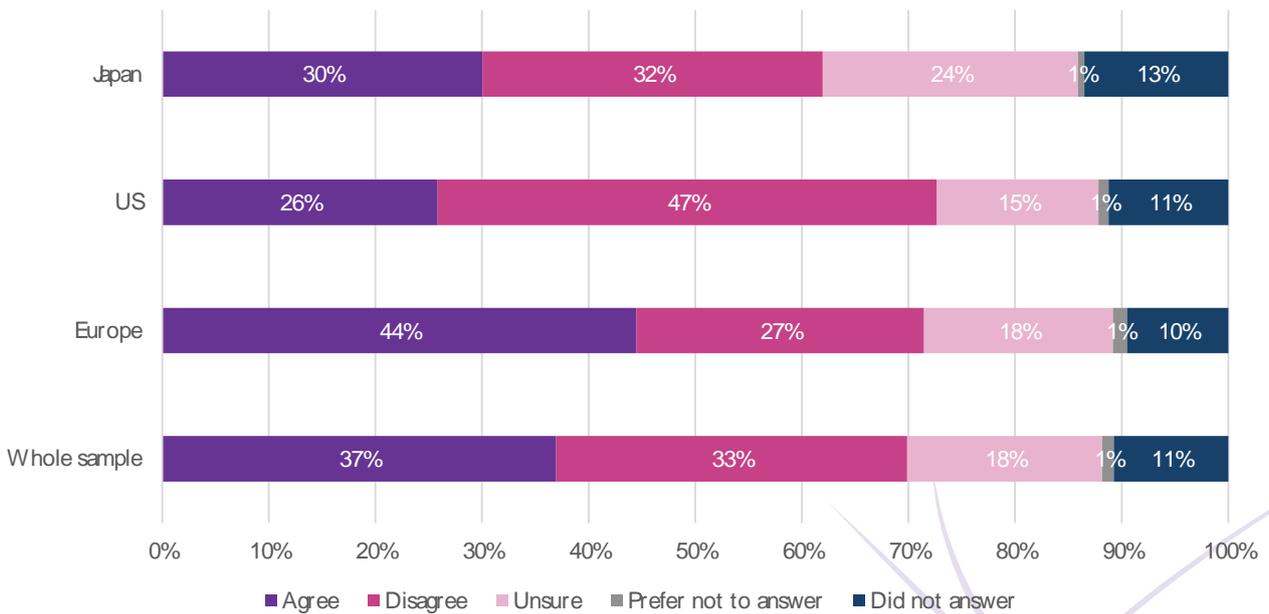
Note: The figure presented above is based on 820 responses.

Figure 0.7: Would a grace period reduce the predictability and legal certainty of the patent system? Responses by type of organisation



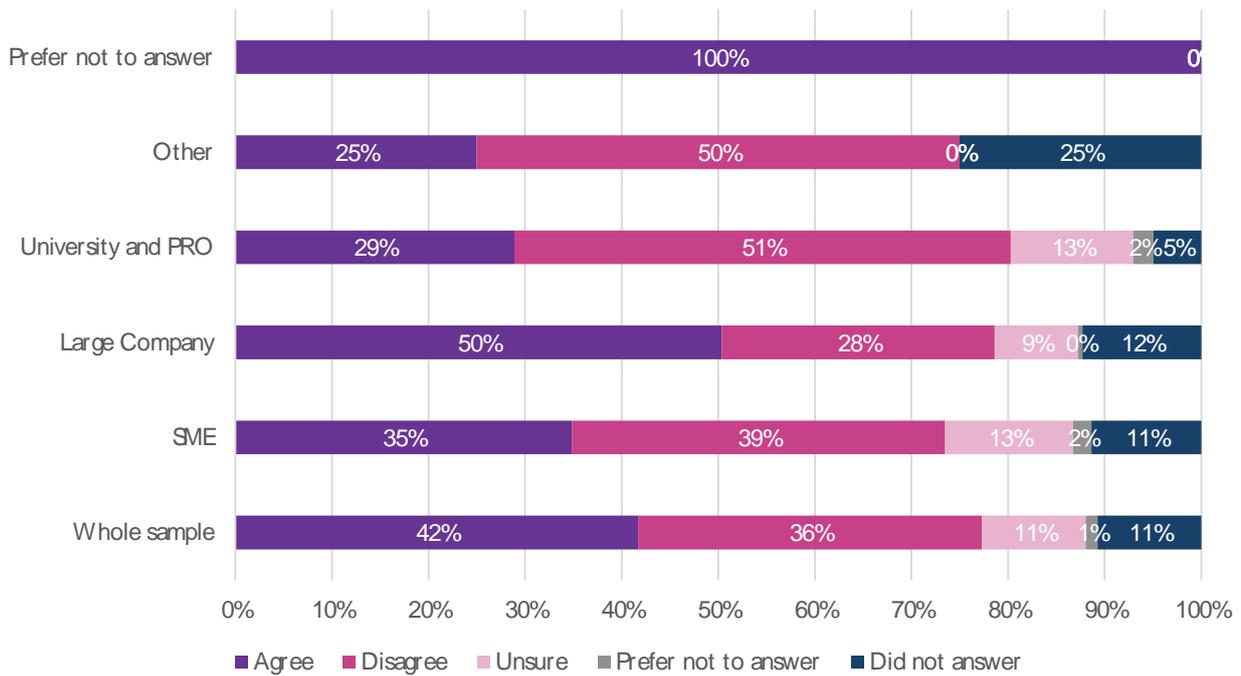
Note: The figure presented above is based on 820 responses.

Figure 0.8: Would a grace period reduce the predictability and legal certainty of the patent system? Responses by region of origin



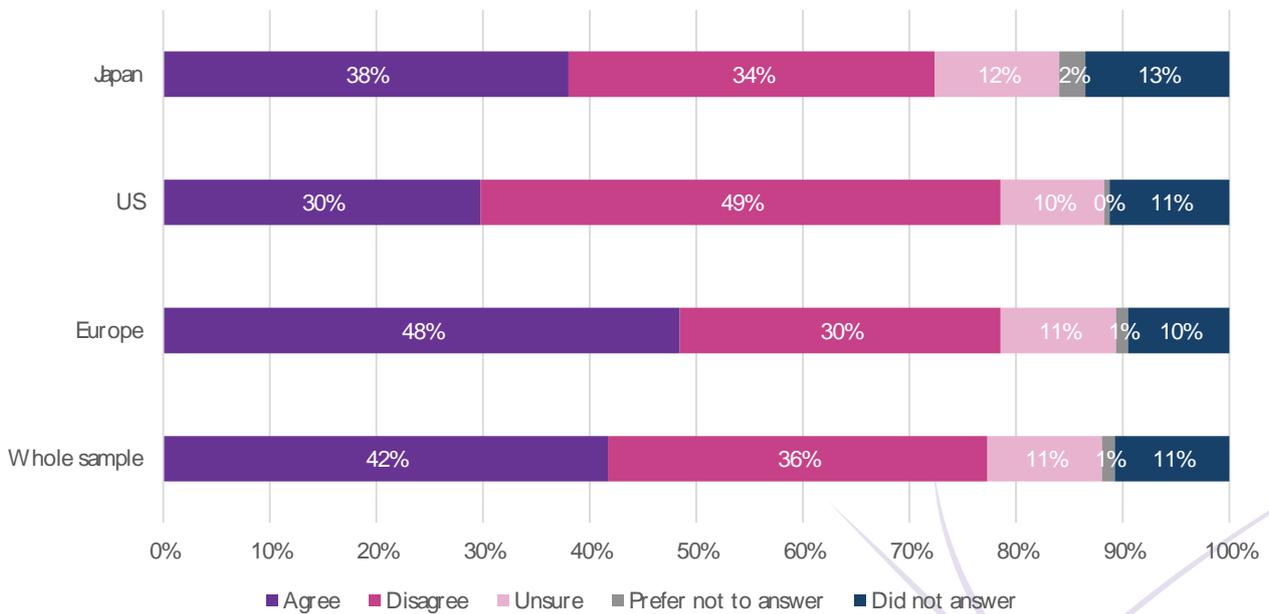
Note: The figure presented above is based on 820 responses.

Figure 0.9: Is a good reason for not having a grace period that it complicates the patent system? Responses by type of organisation



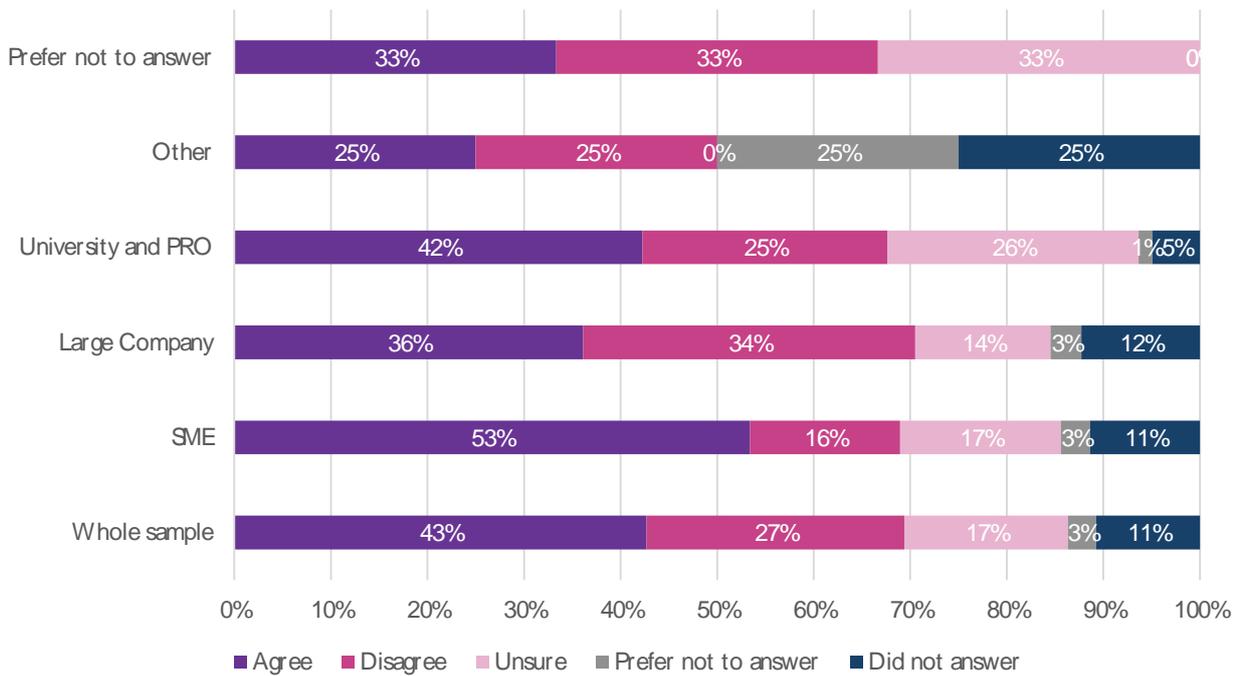
Note: The figure presented above is based on 820 responses.

Figure 0.10: Is a good reason for not having a grace period that it complicates the patent system? Responses by region of origin



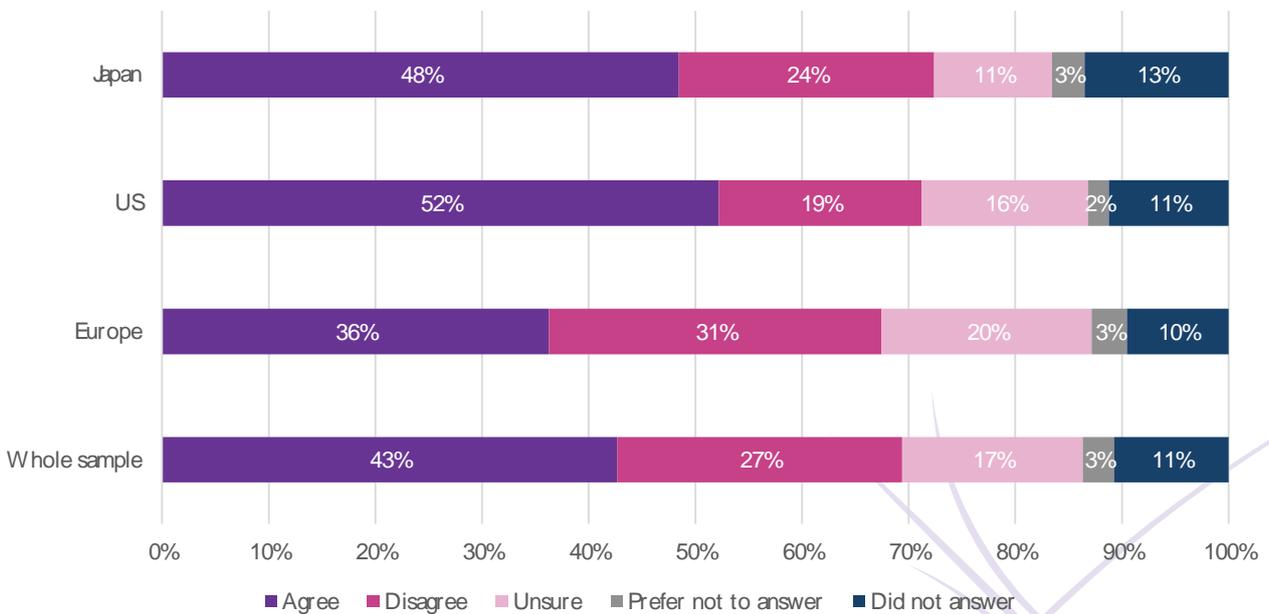
Note: The figure presented above is based on 820 responses.

Figure 0.11: Should the grace period protect the first inventor who disclosed an invention against any interference from third parties in the time interval between first disclosure and filing? A subsequent patent should be able to stop the activities of both prior users in good faith and independent inventors having published their invention. Responses by type of organisation



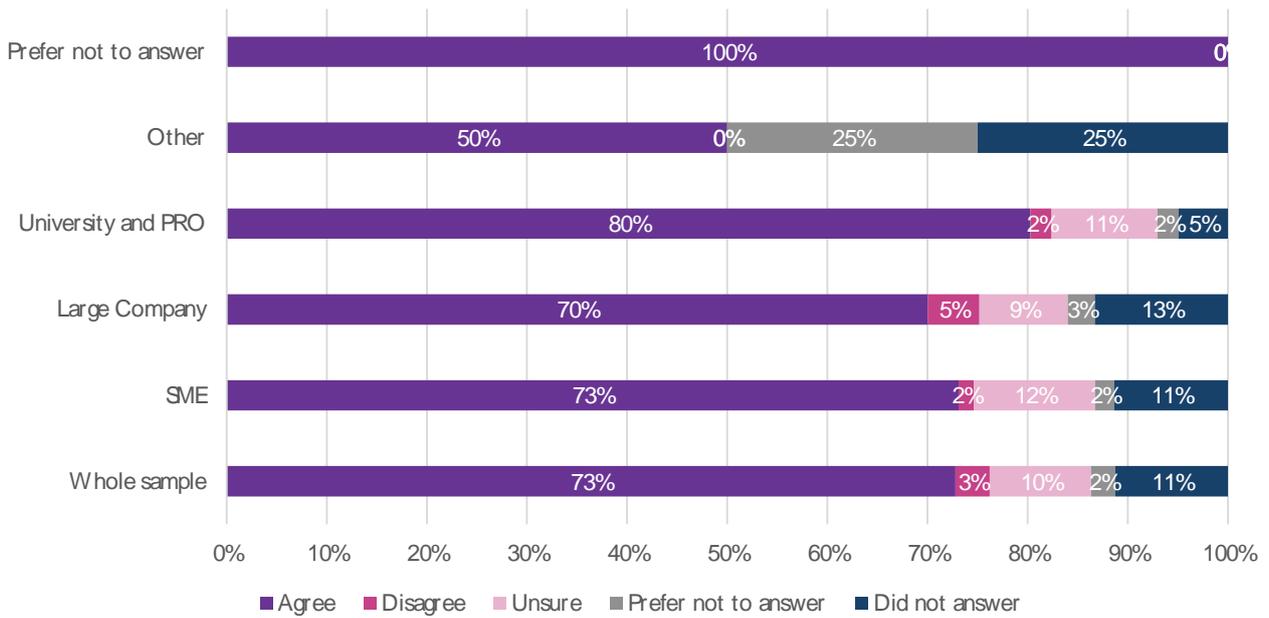
Note: The figure presented above is based on 820 responses.

Figure 0.12: Should the grace period protect the first inventor who disclosed an invention against any interference from third parties in the time interval between first disclosure and filing? A subsequent patent should be able to stop the activities of both prior users in good faith and independent inventors having published their invention. Responses by region of origin



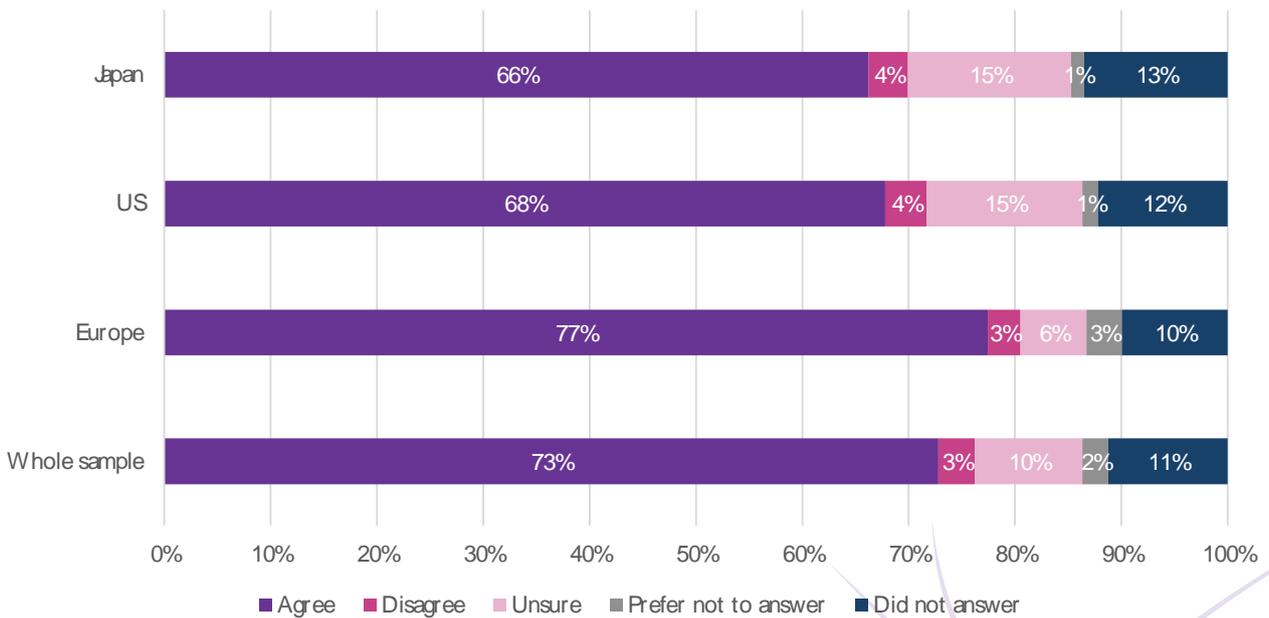
Note: The figure presented above is based on 820 responses.

Figure 0.13: Should the grace period should be defined so as to preserve maximum legal certainty? Responses by type of organisation



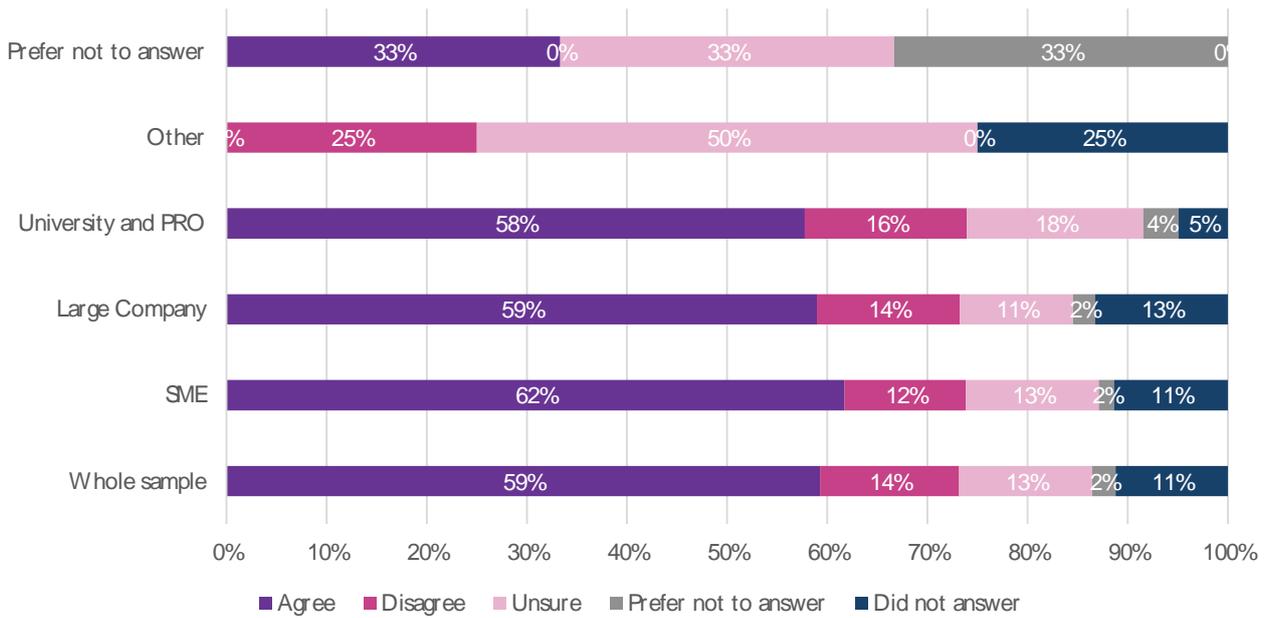
Note: The figure presented above is based on 820 responses.

Figure 0.14: The grace period should be defined so as to preserve maximum legal certainty? Responses by region of origin



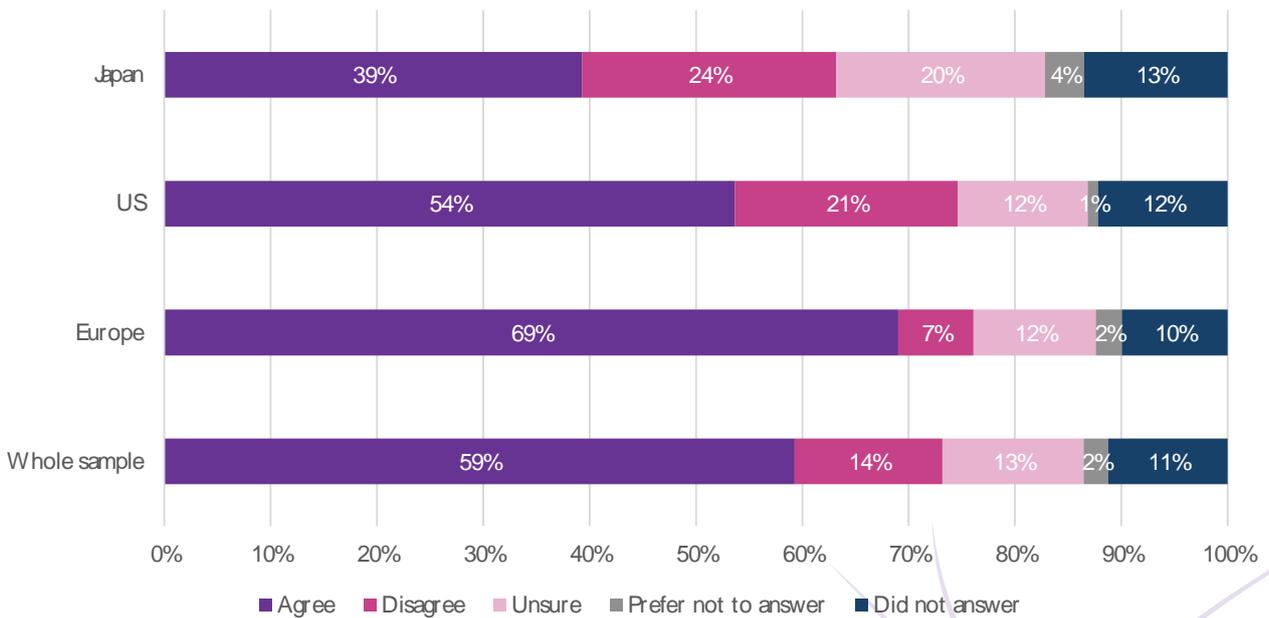
Note: The figure presented above is based on 820 responses.

Figure 0.15: The grace period should be defined so as to ensure that any inventor having a real choice, would choose to file first and then disclose. Responses by type of organisation



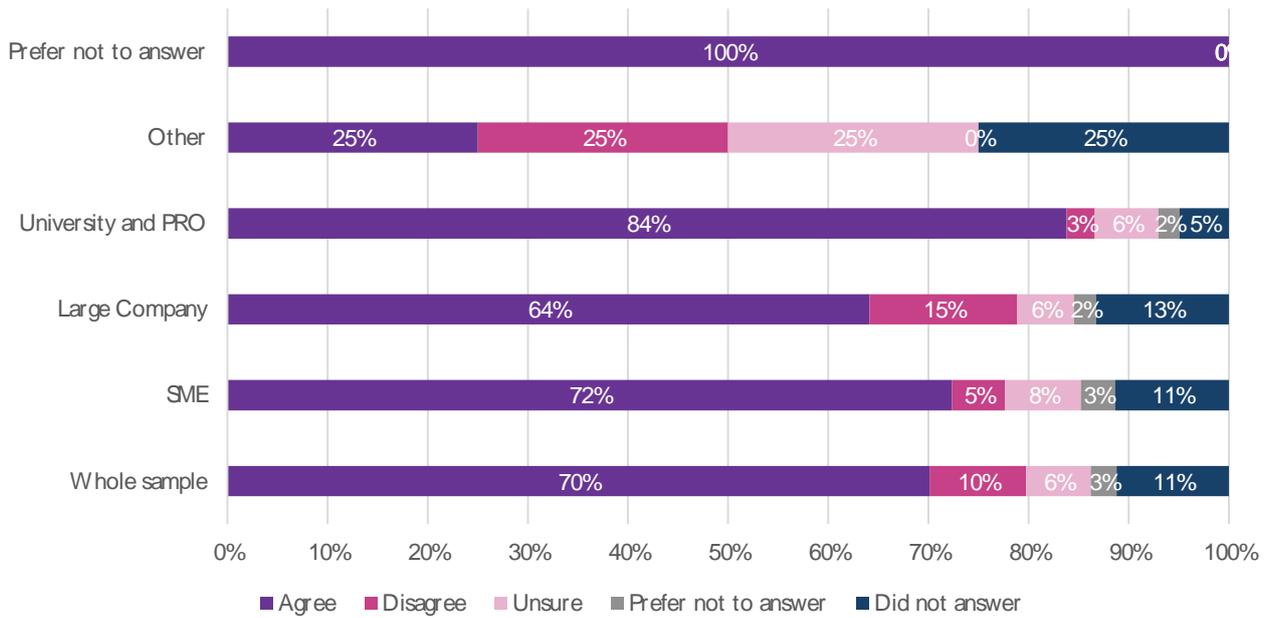
Note: The figure presented above is based on 820 responses.

Figure 0.16: The grace period should be defined so as to ensure that any inventor having a real choice, would choose to file first and then disclose. Responses by region of origin



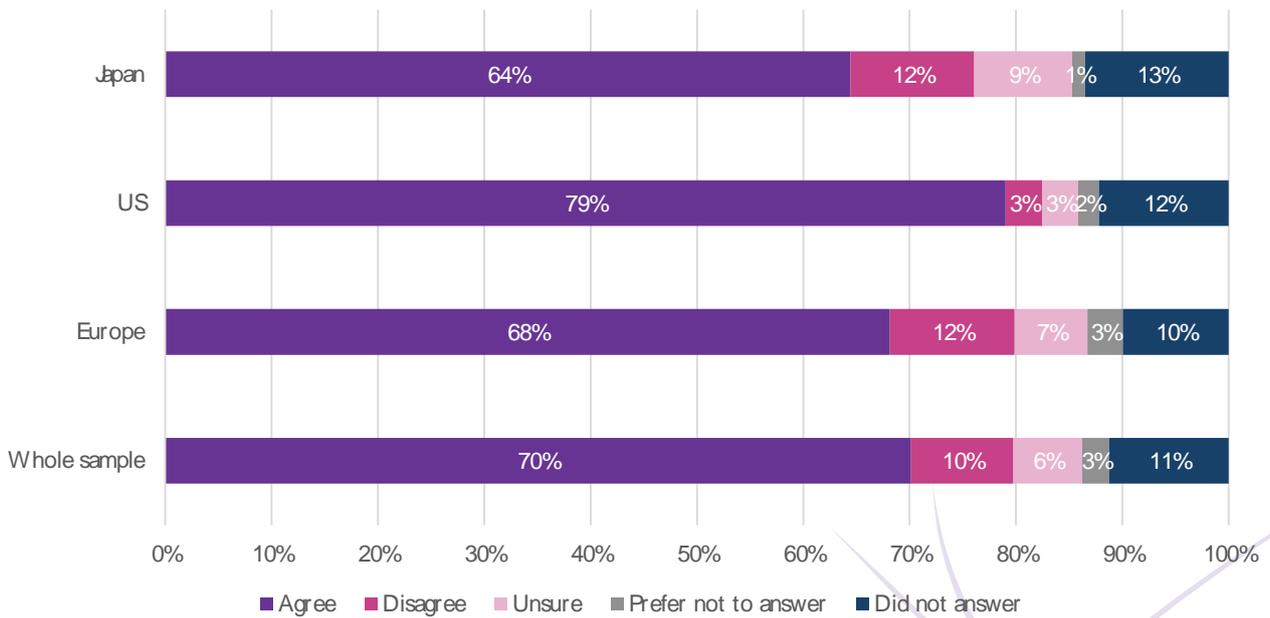
Note: The figure presented above is based on 820 responses.

Figure 0.17: The grace period should be defined to ensure that when pre-filing disclosure does occur, through accident or by choice, the inventor will be able to secure patent rights. Responses by type of organisation



Note: The figure presented above is based on 820 responses.

Figure 0.18: The grace period should be defined to ensure that when pre-filing disclosure does occur, through accident or by choice, the inventor will be able to secure patent rights. Responses by region of origin



Note: The figure presented above is based on 820 responses.

Appendix 4: Consistency Checks

If we are to draw meaningful conclusions from the survey responses, it is essential that respondents to the questionnaire answer consistently and not simply select random responses options for each of the questions. In addition to basic checks such as verifying whether respondents had provided the same response for a substantial proportion of questions, a set of 'logic pairs' was identified in conjunction with the EPO. These 'logic pairs' are questions for which a response to one question could be perfectly predicted from the response provided to a second question if the respondent had provided consistent answers. The results of our analysis of responses to these questions are described below.

Prior user rights

We first looked at Q7 which asks whether respondents believe prior user rights should be available to third parties in good faith throughout the grace period and compared the answers to this question with Q8. There were three sub parts to Q8, the first of which asked whether respondents agreed that prior user rights are an essential component of a grace period. The second sub-question asked whether prior user rights are irrelevant to the grace period. The third question examined the view of respondents on whether stopping a prior user in good faith from continuing to use the invention once a patent has been granted would be unfair and/or make the rapid adoption of new technology very risky.

We would expect a positive correlation of Q7 with Q8-1 and Q8-3. Being in favour of prior user rights is likely to be associated with considering such rights somewhat important for a grace period regime. However, we do not expect an absolute positive relationship as being in favour of such rights in theory does not imply that one considers such rights a crucial part of the policy design. We expect a stronger correlation between responses to Q7 and Q8-3 since both cover a respondent's approach to prior user rights. In essence, Q8-3 is one of the offered rationales for supporting prior user rights. On the other hand, respondents not supporting prior user rights are expected to be associated with responses of irrelevance of such rights for the grace period. Hence, the correlation with the second sub-question is expected to be negative.

The table below summarises our findings regarding the correlations between Q7 and each sub-question of Q8. To arrive at these figures, we only took pairs where answers existed for both questions and where this answers were "Yes" or "No" for Q7 and "Agree" or "Disagree" for Q8. The correlations presented below support our hypothesis.

Table 0.1: Correlation pairs for Q7 and Q8

Question pairs	Correlation
Q7 – Q8-1	0.45
Q7 – Q8-2	-0.25
Q7 – Q8-3	0.55

Support for the US system

In Q14, we asked respondents whether they would support the US definition if it were the only option available for a grace period. Under the US definition, there are no prior user rights during the grace period and disclosures by independent inventors are not novelty destroying. Moreover, independent inventors can be stopped from using their inventions by a subsequent patent.

Taking into account the characteristics of the US definition, we would expect respondents who indicated they would support it to provide consistent answers in prior user right questions (Q7 and Q8), in the question regarding disclosure of independent inventions (Q9) and lastly, in Q10-6. This last question asks whether respondents agree that “the grace period should protect the first inventor who disclosed an invention against any interference from third parties in the time interval between first disclosure and filing. A subsequent patent should be able to stop the activities of both prior users in good faith and independent inventors having published their inventions.

Thus, people supporting the US system are expected to have negative attitudes towards prior user rights as expressed in Q7 and Q8. Having already established, in the previous section, that these two questions are logically consistent, it suffices to examine the consistency of Q7 with respect to Q14. We would expect to observe a negative correlation between these two questions. In contrast, we expect a positive correlation of Q14 with Q9 as the US system offers protection from the disclosure of independent inventions. The same holds true for Q10-6 which is essentially a supportive statement for protection from subsequent disclosures.

In none of the above correlation pairs do we expect very high absolute numbers as each questions covers separate characteristics of the grace period system. However, the decision to support a particular system or not is determined by considering all available factors. Table 0.2 presents the different correlations between the pairs of questions and supports our prior expectations, as they were described in the previous paragraph.

Table 0.2: Correlation pairs related to Q14

Question pairs	Correlation
Q14 – Q7	-0.19
Q14 – Q9	0.27
Q14 – Q10-6	0.29

We took an additional step to determine whether answers provided in these questions followed a logical pattern. Firstly, using answers to Q7 and Q9, we identified those who would be expected to support and those who were expected to oppose the US system. From this population of respondents, we calculated the percentage of respondents who gave the expected answers and it was highly satisfying, standing at 75% for those who supported the US system, and 73% for those who opposed it. The rest of the respondents do not necessarily exhibit logical flaws; rather this is an indication of the fact that there are additional drivers regarding the decision to support or oppose the grace period system in question (such as e.g. duration).

Support for different systems

Respondents were asked to respond whether they would support each of the three regimes (US, Japan and Safety-net) if they were the only available option (Q14-16). Subsequently, in Q17, they were asked to declare a preference for one of these three systems or they could reply “none of the

above". Our analysis accounted for respondents who had indicated they would support only one of the three systems. We then examined whether these respondents replied to Q17 in a consistent manner, namely, by picking the grace period system that they had indicated they would support.

The results are presented in the table below and are fairly reassuring of the consistency of answers. There are, however, few respondents (3%) who have indicated a preference for a grace period system that they indicated they did not support, over alternative systems, which they indicated they supported in the preliminary questions. In addition, this examination does not deal with respondents who had more mixed answers to Q14-16.

Table 0.3: Percentage of logical answers by different grace period system preference

Question pairs	Percentage of logical answers
US	94% (3% answered <i>none of the above</i>)
Japan	94% (3% answered <i>none of the above</i>)
Safety net	100%

Legal certainty

Respondents were asked to say whether the grace period had given rise to issues on litigation or various review procedures available post-grant in the US or Japan (Q37). Previously, in Q10, they were asked whether they agreed or disagreed with two statements that are related to this topic. More specifically, Q10-4 provided the following statement; "A grace period reduces the predictability and legal certainty of the patent system". In Q10-5, respondents were presented with the following statement; "A good reason for not having a grace period is that it complicates the patent system". While Q37 is based on respondents' experience in the mentioned countries, and Q10 focuses on the general perception of respondents regarding the above two statements, one could reasonably expect a positive correlation between the pair.

Respondents who agreed with both statements in Q10 were grouped together to reflect a sub-group which agreed that a grace period increases both legal uncertainty and complications in the more general sense. This sub-group of 112 respondents was then tested with regards to their answers to Q37, which are expected to reflect these opinions. Hence, we would expect answers in Q37 to range from "Often" to "Rarely" but we do not expect to see many "Never" answers. Indeed, these results are confirmed in the table below, which summarises the percentage of respondents of this sub-group who gave each different answer in Q37.

Table 0.4: Percentage distribution of the answers of the examined sub-group to Q37

Answers to Q37	Percentage of respondents
Often	25%
Sometimes	48%
Rarely	25%
Never	2%

Note: The sub-group for this table was identified as the respondents who answered "Agree" in Q10-4 and Q10-5.

Pre-filing disclosure

Another potential source of inconsistency arises from Q29 which asks: "if a safety net grace period were introduced in Europe, would you make pre-filing disclosures (more) regularly in Europe?" This

needs to be examined in parallel with Q24 and Q26 which ask what percentage of the patents filed in the US and Japan, respectively, which used the grace period, would have been filed in Europe if a “safety net grace period” had been available there.

Inconsistencies would arise when respondents in Q29 provide a positive answer but at the same time they claim, in both Q24 and Q26, that none of the patents filed in the US or Japan using the grace period would have been filed in Europe if a “safety net grace period” was available. There were only six such cases for Q24 and two for Q26. This indicates that responses to these questions were consistent

Summary

The above analysis has demonstrated that there is logical consistency within survey responses. Therefore, we consider that meaningful conclusions can be drawn from an analysis of those responses.

Potential sample selection bias

The degree to which grace periods are currently used as well as the perceptions concerning the potential introduction of a grace period in Europe are likely to differ significantly across different types of patent users. This raises the concern that survey results may suffer from sample selection bias, which could arise if the sample of users who answered the questionnaire is not a random sample of all the patent users approached. For example, one might expect that those users who tend to use the grace period more frequently are also more likely to answer the survey compared those users who use the grace period seldom, less frequently or not at all.

In order to test for the potential presence of such issues we estimated a probit model on the entire sample of patent users approached. The model aims at explaining the likelihood that a patent user answers survey after controlling for the following users’ characteristics: country of origin, and technological cluster in which the majority of patents has been filed.²⁴ ²⁵ The results of such a model are reported in the table below.

Table 0.5: Econometric output of likelihood of a valid survey completion

Dependent Variable: Response to the survey				
Method: ML - Binary Probit (Quadratic hill climbing)				
Sample (adjusted): 1 12998				
Included observations: 12981 after adjustments				
Variable	Marginal probability coefficient	Std. Error	z-Statistic	Prob.
US user	-0.0578868	.00596	-9.72	0.000
European user	0.0130401	.00575	2.27	0.023
Electrical engineering	0.0015538	.0083	0.19	0.852

²⁴ The way in which the variables used in the regressions have been defined is discussed in Appendix 5.

²⁵ We acknowledge that it would be useful to control also for the type of organisations, i.e. whether a respondent is a large company, an SME or University/PROs. However, this information is available only for the survey respondents and therefore we were not able to include it as a control variable.

Instruments	0.0127111	.00896	1.42	0.156
Chemistry	0.0241671	.00851	2.84	0.005
Mechanical engineering	0.0012693	.00783	0.16	0.871
McFadden R-squared	0.045939	Mean dependent var		0.063092
S.D. dependent var	0.243138	S.E. of regression		0.240559
Akaike info criterion	0.450236	Sum squared resid		750.7857
Schwarz criterion	0.454265	Log likelihood		-2915.257
Hannan-Quinn criter.	0.451582	Deviance		5830.515
Restr. deviance	6111.258	Restr. log likelihood		-3055.629
LR statistic	280.7432	Avg. log likelihood		-0.224579
Prob(LR statistic)	0.000000			
Obs with Dep=0	12162	Total obs		12981
Obs with Dep=1	819			

The results of the table above indicate that, in the survey responses there is an overrepresentation of European users (relative to US and Japanese users) and of users who file the majority of their patent in the Chemistry technological cluster.

Appendix 5: Definition of Variables

We describe here how the variables used in the regression analysis have been defined.

Dependent variables

- **Felt the need of filing patent after disclosure** — dummy variable taking value “1” if the user states that he has never used the grace period in the past but has felt the need of filing a patent after disclosure, and value of “0” if the user has never used the grace period in the past and has never felt the need of filing a patent after disclosure. Survey questions **Q18** and **Q27**: value “1” if answer is “No” to Q18 and “Yes” to Q27; value “0” if answer if answer is “No” to Q18 and “No” to Q27. Users who responder “Usurer” and “Prefer not to answer” to either Q18 or Q27 were excluded from the analysis.
- **In favour of GP in principle** — dummy variable taking value “1” if the user is in principle in favour of the GP and “0” if he is not in favour. Survey question **Q11**: value “1” if answer is “Yes”; value “0” if answer is “No”. “Usurer” and “Prefer not to answer” are excluded.
- **In favour of duration \geq 6 months** — dummy variable taking value “1” if the user is in favour of a GP with duration of 6 months or more, and “0” if he is in favour of a GP with duration of 6 months or less. Survey question **Q4**: value “1” if answer is “6 Months” or “Other”, and the preferred duration indicated is less than 6 months; value “0” if answer is “12 months” or “Other”, and the preferred duration indicated is more than 6 months. “Usurer” and “Prefer not to answer” are excluded.
- **In favour of declaration requirements** — dummy variable taking value “1” if the user is in favour of a GP with declaration requirements, and “0” if he is not in favour. Survey question **Q6**: value “1” if answer is “Yes”; value “0” if answer is “No”. “Usurer” and “Prefer not to answer” are excluded.
- **In favour of prior user right** — dummy variable taking value “1” if the user is in favour of prior user rights being available to third parties in good faith throughout the GP, and “0” if he is not in favour. Survey question **Q7**: value “1” if answer is “Yes”; value “0” if answer is “No”. “Usurer” and “Prefer not to answer” are excluded.
- **In favour of protection from disc. ind. inv.** — dummy variable taking value “1” if the user believes that the GP should protect inventors from subsequent disclosures of independent inventions made by third parties prior to filing and “0” if he believes that the GP should not provide such protection. Survey question **Q9**: value “1” if answer is “Yes”; value “0” if answer is “No”. “Usurer” and “Prefer not to answer” are excluded.
- **US model preferred to JP model** — dummy variables taking value “1” if the user prefers, as international norm, the US grace period definition over the JP definition, and value “0” if the user prefers the JP definition over the US definition. Survey question **Q17**: value “1” if answer is “US”; value “0” if answer is “JP”. “Usurer” and “Prefer not to answer” are excluded.
- **Safety-net model preferred to US model** — dummy variables taking value “1” if the user prefers, as international norm, the safety-net grace period definition over the US definition, and

value "0" " if the user prefers the US definition over the safety-net definition. Survey question **Q17**: value "1" if answer is "Safety-net grace period"; value "0" if answer is "US". "Usurer" and "Prefer not to answer" are excluded.

- **Safety-net model preferred to JP model** — dummy variables taking value "1" if the user prefers, as international norm, the safety-net grace period definition over the JP definition, and value "0" " if the user prefers the JP definition over the safety-net definition. Survey question **Q17**: value "1" if answer is "Safety-net grace period"; value "0" if answer is "JP". "Usurer" and "Prefer not to answer" are excluded.
 - **Increase in litigation costs** — dummy variables taking value "1" if the user expects the cost of litigation to increase as result of the introduction of the grace period in Europe, and value "0" if he does not expects such costs to increase. Survey question **Q39**: value "1" if answer is "Increase"; value "0" if the answer is "Decrease" or "Remain the same". "Usurer" and "Prefer not to answer" are excluded.
 - **Increase in costs of freedom to operate** — dummy variables taking value "1" if the user expects the cost of obtaining freedom to operate to increase as result of the introduction of the grace period in Europe, and value "0" if he does not expects such costs to increase. Survey question **Q38**: value "1" if answer is "Increase"; value "0" if the answer is "Decrease" or "Remain the same". "Usurer" and "Prefer not to answer" are excluded.
 - **More frequent pre-filing disclosure** — dummy variables taking value "1" if the user states that, if the safety-net grace period were introduced, he would make pre-filing disclosure more regularly in Europe, and value "0" if he states that he would not. Survey question **Q29**: value "1" if answer is "Yes"; value "0" if the answer is "No". "Usurer" and "Prefer not to answer" are excluded.
- Use the GP at least occasionally** — dummy variables taking value "1" if the user states that, if a grace period were adopted in Europe (and under different scenarios concerning the precise way which the grace period could be defined) he would use the grace period either occasionally or more often, and value "0" if he states that he would generally try to keep the invention secret and try to file patent application as soon as possible. Survey questions (depending on the scenarios) **Q32**, **Q33**, and **Q34**: value "1" if answer is "Use the grace period more often" or "Use the grace period occasionally", value "0" if the answer is "Generally try to keep your inventions secret and file a patent application as quickly as possible".

Explanatory variables

- **SME & Individuals** — dummy variable taking value "1" if the user is an SME or an individual inventor, and "0" otherwise. Survey question **Q1**.
- **University & PROs** — dummy variable taking value "1" if the user is a University or PROs or, and "0" otherwise. Survey question **Q1**.
- **Large company**— dummy variable taking value "1" if the user is a large company, and "0" otherwise. Survey question **Q1**
- **US user** — dummy variable taking value "1" if the user's origin is US, and "0" otherwise. Based on EPO contact details.
- **JP user** — dummy variable taking value "1" if the user's origin is Japan, and "0" otherwise. Based on EPO contact details.

- **EPC user** — dummy variable taking value “1” if the user’s origin is an EPC member state, and “0” Based on EPO contact details.
- **Technological cluster definitions** — dummy variable taking value “1” for the cluster in which the majority of patents have been filed by the respondent between 2012, and 2013, and value “0” otherwise. In cases where the same number of patents were filed in two or more clusters, the value “1” was assigned randomly among these clusters. The underpinning information on patent filings was provided by the EPO.
- **Previous GP experience** — dummy variable taking value “1” if the user has already used the GP previously, and “0” otherwise”.
Survey question **Q18**: value “1” is answer is “Yes Us”, “Yes JP”, “Yes elsewhere”; value “0” is answer is: “No”. “Prefer not to answer” are excluded.
- **Disclosure of independent inventions is novelty destroying** — dummy variable taking value “1” if the value of the dependent variable “Use the GP at least occasionally” is sourced from **Q33**, and value “0” value of the dependent variable is sourced from either **Q32** or **Q34**.
- **Prior user rights granted** — dummy variable taking value “1” if the value of the dependent variable “Use the GP at least occasionally” is sourced from **Q34**, and value “0” value of the dependent variable is sourced from either **Q32** or **Q33**.

Appendix 6: Interview Templates

Questions for Universities

Question	Response
Past experience of grace periods	
Have your patent filing strategies been affected by the absence of a grace period in Europe? If so, please describe.	
Has the absence of a grace period in Europe affected your decision of when to release scientific research to the wider community? How and why?	
Can you provide any examples of cases in which accidental disclosure or the pressure to publish research results early has led to the inability to protect an invention in Europe?	
In cases where you disclosed information which prevented you from seeking patent protection in Europe, what was your typical response to the situation? Did you seek to obtain protection in countries that have grace periods? If so, would you have sought protection in these countries in the absence of the accidental disclosure?	
Views on a European grace period	
In general, would you welcome the introduction of a grace period in Europe? Why / why not?	
If there was a grace period, should it protect an applicant only against his own disclosures for patenting purposes or should it protect applicants from independent disclosures from third parties in the grace period interval? Please explain.	
Should the grace period protect applicants from prior user rights being acquired by third parties having used their own invention in good faith during the grace period? Please explain.	
Would the introduction of a grace period in Europe affect your publication and patenting strategies and the time at which you disclose information to the scientific community? How and why?	
Would the introduction of a grace period in Europe affect your decision of where to file for patent protection? How and why?	
Does this depend on the definition of the grace period? If so, what factors (e.g. duration, declaration requirements, prior user rights etc.) are relevant?	
How important do you think it is that grace periods are harmonised between Europe, the US and Japan? Why?	
Do you have any concerns about the potential downsides of grace periods (e.g. increased legal	

uncertainty)? Please explain your view.

Questions for SMEs / Large Companies

Question	Response
Past experience of grace periods	
Have your patent filing strategies been affected by the absence of a grace period in Europe? If so, please describe.	
Has the absence of a grace period in Europe affected your decision of when to disclose information on your or your company's inventions? How and why?	
Views on a European grace period	
In general, would you welcome the introduction of a grace period in Europe? Why / why not?	
Would the introduction of a grace period in Europe change your behaviour and strategies in terms of when and how to disclose information about inventions you have made (e.g. would you choose to disclose prior to filing)? How and why?	
Does this depend on the definition of the grace period? If so, what factors (e.g. duration, declaration requirements, prior user rights etc.) are relevant?	
If there was a grace period, should it protect an applicant only against his own disclosures for patenting purposes or should it protect applicants from independent disclosures from third parties in the grace period interval?	
Should the grace period protect applicants from prior user rights being acquired by third parties having used their own invention in good faith during the grace period? Please explain.	
How important do you think it is that grace periods are harmonised between Europe, the US and Japan? Why?	
Do you have any concerns about the potential downsides of grace periods (e.g. increased legal uncertainty)? Please explain your view.	

When responding to the following questions please assume that you are a competitor and a patent is held by a third party.

We would like to have your view on aspects of a grace period in several possible scenarios where you are the competitor of a patent applicant.

First, assume that you have made your own invention, but have decided not to patent it. You use it so that it is disclosed to the public. Another firm ("the patent applicant") has made the same invention and disclosed it before you did. He then files a patent application, but after you have disclosed your invention. The patent is granted, due to the existence of a grace period.

Question	Response
Should the patent applicant be able to get a patent?	

Please explain your answer assuming you are a competitor.

Should the patent applicant be able to prevent you from continuing to use your own invention which you had already used prior to his filing date? Please explain your answer assuming you are a competitor

Second, assume that you begin using an invention in good faith which is well known and in the public domain. Furthermore, you have invested in and /or built upon that invention for the purposes of your business prior to the filing of the patent application by the firm that made the invention.

Question	Response
Should the firm that made the invention be able to wait and see whether the invention is a success before deciding to patent it, and then file a patent application after you have begun using the invention allowing him to stop you from continuing using it? Please explain.	

Now assume that you and one of your competitors have made the same invention independently of each other. Without knowledge of the invention by the other, you decided to use the invention without patent protection. At the same time your competitor has filed a patent application.

Question	Response
Should your competitor be able to enforce his patent, or should prior user rights be available throughout the grace period to protect your use of the same invention? Please explain.	

One of the arguments in favour of the grace period is that it promotes the early disclosure and dissemination of new information, which others may then benefit from, either by avoiding duplication of innovation or by building on the new technology thus disclosed. However, it is argued that for early disclosure to produce such benefits, competitors need to have clarity as to the status of the information as well as the legal certainty that investments made in good faith will not be lost.

Question	Response
Do you agree with this argument? Please explain.	

When responding to the following questions please continue to assume that you are a competitor and a patent is held by a third party.

Question	Response
As a competitor in the marketplace, how important is legal clarity on freedom to operate? How would the introduction of a grace period impact that freedom? Please explain.	
If information is put in the public domain, should the public (and more specifically, you as a competitor) in	

principle be able to assume that it is free to be used?
Please explain.

If there is a risk associated with disclosing inventions prior to filing, should the risk be borne by the inventor or by you as a competitor of the inventor? Please explain.

A mandatory declaration would list earlier disclosures of the applicant's invention of which he was aware, and make it easier for you to assess whether the patent is valid or not (if a prior disclosure were not listed in the declaration, the grace period would continue to apply although the law might provide other sanctions).

From your perspective as a competitor, how important would such a mandatory declaration be?

Having answered the questions about the grace period now also from the perspective of a competitor, has your opinion concerning the introduction of a grace period in Europe changed? If so, in what direction and why?
