

REPORT ON USE OF NON-FINANCIAL VAT
REGISTRATION DATA IN TRADE CREDIT SCORING

HMRC / BIS

JUNE 2014

USE OF NON-FINANCIAL VAT REGISTRATION DATA IN TRADE CREDIT SCORING

Executive Summary

Introduction

In July 2013, HMRC consulted on proposals for the release of non-financial VAT registration data. An objective of the process was to improve understanding of the benefits and costs of release options, including the economic benefits and costs. HMRC therefore decided to undertake a joint research project with three major credit reference agencies (CRAs) to assess the impact on businesses' trade credit scores of including non-financial VAT registration data in the CRAs scoring methodologies (the potential increase in trade credit was identified as being one of the main benefits which might arise from a release of VAT registration data). This report sets out the results from the research project.

VAT registration data is economically valuable because it offers the only comprehensive database of UK businesses registered for VAT. It includes identifying data on larger unincorporated businesses, which is not readily or comprehensively available from other sources. Matching VAT registration data with other information sources (eg, Companies House, customer, court or bank data) would increase the amount and improve the accuracy of this data. This is likely to improve the quality of business-related services such as credit evaluation, compliance with anti-money laundering requirements and anti-fraud checking. Potential users include credit reference agencies, banks and other financial services providers.

Methodology

The project involved the credit scoring of a representative sample of traders from the VAT register by each participating CRA and comparing the trade credit limits before and after the inclusion of VAT registration data in the scoring algorithm. The methodology and results were validated by HMRC analysts. The individual CRA results were aggregated to provide a final output. The process did not have any impact on actual credit scores, nor will the CRAs retain any VAT registration data after the project's conclusion.

A second strand of the project involved the matching of a sample of all traders registered for VAT in a single urban locality by each participating CRA with the records it held to identify any potentially fraudulent registrations or any potential failures to meet registration obligations.

Safeguards

HMRC put robust safeguards in place to protect the privacy and security of the traders whose data was used for research purposes. Strict controls were imposed on

the transfer, handling, storage, use and destruction of the data to ensure the application of relevant legislation, standards and processes to safeguard data.

Modelling results

Analysis of the data of a representative sample of traders resulted in the identification by CRAs of a sizeable group of non-incorporated businesses which had been unknown to them, and which, would now be eligible for a trade credit limit. The use of VAT registration data also resulted in an increase in aggregate trade credit limits for both incorporated and unincorporated business already known to CRAs. The table below shows the breakdown of changes for the sample.

Of the sample of 50,000 traders, the initial modelling showed that 13,100 businesses (26 percent) would have a new or an increased trade credit limit; 1,900 (4 percent) would have a reduced or removed trade credit limit; 25,000 (50 percent) would see no change; while 10,000 (20 percent) of the trader records could not be matched within the static modelling constraints of the project. If VAT registration data were made available for credit scoring on an ongoing basis, users would use it to improve their data cleansing and adjust their scoring algorithms to improve the matching rate and the predictive value. This would be likely to further improve credit scores and reduce the likelihood of reduction or removal of trade credit limits.

The modelled net trade credit limits for the (matched) unincorporated businesses in the sample increased by 120 percent from £30 million to £66 million. The modelled net trade credit limits for the (matched) incorporated businesses in the sample increased by 1 percent from £1,110 million to £1,120 million. Unincorporated businesses and newly incorporated businesses are most likely to benefit from an increase in trade credit limits, particularly smaller and newer enterprises.

Status of business	Impact on trade credit limit from use of VAT registration data	Number of impacted businesses in sample
Unincorporated businesses	Limit increased	8,500
	<i>Of which, credit limit given for the first time</i>	<i>8,300</i>
	Limit decreased	200
	Limit removed	10
	No change to limit	4,600
	Total – matched unincorporated businesses	13,400
Incorporated businesses	Limit increased	4,500
	<i>Of which, credit limit given for the first time</i>	<i>0</i>
	Limit decreased	1,600
	Limit removed	100
	No change to limit	20,400
	Total – matched incorporated businesses	26,600
Not matched to CRA records	Total – unmatched businesses	10,000
ALL BUSINESSES	TOTAL IN SAMPLE	50,000

Potential economic benefits

The results from modelling a representative sample can be extrapolated to the population of approximately 1.9 million VAT registered businesses. On this basis, the increase in aggregate trade credit limits for VAT registered business from the release of VAT registration data is likely to be of the order of £1.8 billion.

The economic impact of this increase in the potential availability of trade credit depends on the levels of take up and granting. There is considerable uncertainty in estimating what this might be. While there is evidence that a majority of small businesses are credit constrained, it is nonetheless unlikely that all the businesses benefitting from new access to trade credit would make additional purchases up to the limit. Allowance needs to be made for existing supply relationships (which are unlikely to be affected by a new or increased credit limit) and for the fact that some types of business make little or no use of trade credit. Taking into account these factors, an estimated range for the uptake in trade credit is in the region of £0.7 billion to £1.4 billion.

A further factor to consider is the composition of the purchases financed by the uptake in trade credit. Given the cheapness of trade credit relative to other

financing options, some of the uptake in trade credit will be used as an alternative to overdraft, credit card or other financing. However, the balance of the uptake would be used to finance additional purchases of trade stock or in some cases investment. Evidence that a large majority of small businesses are credit constrained suggests that the bulk of an increase in use of trade credit will be for additional purchases. As an illustration, if two-thirds of the increase resulted in additional purchases, this would amount to between £500 million and £900 million, based on the above assumptions.

Potential benefits to HMRC

A sample of VAT registrations, representing all registrations in a defined locality, was matched with CRA databases to determine whether it might provide information to help HMRC identify cases of non-compliance.

Of the 30,000 cases in the geographical sample, around 300 (1%) were matched to CRA records that included indicators of potentially fraudulent activity. A further 500 (1.5%) were found, despite not being matched, to be registered to addresses associated with activity identified by CRAs as potentially fraudulent. The purpose of the screening was to identify indicators which might be used to help identify fraud, rather than assess the incidence of fraud.

Initial analysis also identified a group of traders not registered for VAT, despite there being some indication that they may meet the requirements to do so. There could be legitimate reasons for non-registration, such as the nature of the business or the use of group structures.

The geographical matching exercise shows that matching VAT registration data to external databases may be able to supplement HMRC's existing processes, and increase compliance. HMRC will consider how to follow up this work.

Potential risks and costs

The research project did not address wider risks and costs associated with a release of non-financial VAT registration data. These were considered in HMRC's consultation on the release proposals. For VAT-registered traders, the principal negative impact which might arise from use of VAT registration data for trade credit scoring was that a small number of businesses might suffer a reduction or even a removal of a CRA's trade credit limit recommendation. This would be a result of better-informed decisions regarding trade credit limits and could be viewed as an overall improvement in the allocation of trade credit limits.

Introduction

1. In July 2013, HMRC published the consultation document 'Sharing and publishing data for public benefit'¹. This included proposals for possible controlled release of non-financial VAT registration data to qualified parties (including credit reference agencies – CRAs) for specific purposes, such as credit scoring. In parallel with the consultation, HMRC and BIS undertook a research project with three CRAs to assess potential benefits of the release of non-financial VAT registration data, and in particular the impact on trade credit of CRAs incorporating the data in their scoring methodologies.
2. VAT registration data are drawn from the identifying data provided by traders when they register, and are generated and updated on an ongoing basis. There are approximately 1.9 million active registrations. A total of 18 data fields were proposed for release in the consultation, covering the VAT registration number (VRN), business and/or proprietor names, contact details and status details, together with any historical changes to these data. A list of the data fields consulted upon, and used in the research project, is at Annex A. While traders provide an estimate of business turnover on registration, this and all other financial data (eg, VAT returns) were excluded from the scope of possible release.
3. VAT registration data is economically valuable because it offers the only comprehensive register of UK businesses over the £79,000 p.a. turnover VAT registration threshold, as well as those who register voluntarily. It is a unique source of data on unincorporated businesses, on which there are few public data sources.
4. Matching VAT registration data with information on other business databases (eg, Companies House data, customer data held by commercial organisations, bank account data) would increase the amount and improve the accuracy of this data. This in turn has the potential to improve the quality of a range of business-related services, including the granting of credit, compliance with anti-money laundering requirements and anti-fraud checking. Potential users might include credit reference agencies, banks and other financial services providers.
5. Much of the VAT registration data set is already in the public domain (eg, through Companies House records, self promotion, and business databases). Moreover, anyone can obtain a trader's name and address through the online VIES checking service, if they already have the correct VRN. However, a significant part of the data set, particularly for smaller, unincorporated

¹ <https://www.gov.uk/government/consultations/sharing-and-publishing-data-for-public-benefit> A summary of consultation responses and details of the methodology of this project are also available on this page.

businesses, is not in the public domain and, moreover, comprises personal, identifying data (eg, where a trader has registered under his or her own name, home address and home telephone number). It is not possible to distinguish personal from public data in the VAT registration data base, as it was not designed for this purpose.

6. HMRC has not to date released VAT registration data for commercial purposes. Under the Commissioners for Revenue and Customs Act 2005 (CRCA), the department may only release information where the disclosure supports one of its functions, where there is a specific gateway or where one of the other exceptions in the Act applies.

Project objectives

7. The potential economic impacts of sharing or publishing VAT registration data are an important consideration in assessing options for data release. The most practical way of modelling potential impacts is through a collaborative research project with CRAs which hold the necessary models (eg, for credit scoring) and the business data sets required for these purposes, as well as being able to meet HMRC's stringent data handling requirements. HMRC and BIS are responsible for assessing, based on the modelling output, the potential economic impact of release of VAT registration data.
8. The project's main objective is to assess the impact on trade credit limits of including non-financial VAT registration data in CRAs' scoring methodology. This would test the proposition that inclusion of VAT registration data in CRA scoring models would increase trade credit availability to small and medium enterprises (SMEs), allowing some of them to establish improved credit terms with suppliers and others to obtain credit where they are otherwise likely to be turned down.
9. Data from academic research² indicate that around 80 percent of business to businesses transactions use credit, and that trade credit constitutes some 37 percent of total business assets. The typical users of the trade credit limits calculated and made available by CRAs are the credit control functions in companies selling their products and services to small and medium sized enterprises (SMEs). Other credit-related services that might also benefit from use of VAT registration data include credit insurance, invoice finance and factoring.
10. CRAs capture and analyse all the information filed on the approximately three million companies registered at Companies House (forming the core limited company database) and thus are well placed to participate in a project to assess the impact of VAT registration data on trade credit limits.

Credit reference agencies and credit scoring

² Paul, S.Y. and Wilson, N. (2006), 'Trade Credit Supply: an Empirical Investigation of Companies Level Data', *Journal of Accounting Business and Management*, 13: 85-113

11. CRAs provide information on the credit-worthiness of traders. The representative body, the Business Information Providers Association (BIPA), estimates that their five founder members (Creditsafe, Dun & Bradstreet, Equifax, Experian and Graydon) collectively provided 65 million credit reports in 2013 and monitored 35 million trade credit accounts on behalf of almost 100,000 customers.

Current and potential data sources for credit scoring

12. While information available to CRAs on companies is generally good, information on sole traders and partnerships is more limited. CRAs advise that this can lead to low credit scores for sole traders and partnerships simply because reliable data are not available.
13. CRAs have information on corporate businesses from Companies House, Registry Trust Limited (County Court judgments), insolvency actions (meeting of creditors, winding up petitions and orders, administrator appointments, striking off notices, bankruptcy proceedings etc.) and others (eg, trade payment performance data). For sole traders and partnerships information tends to be negative, where available, eg, data on county court judgements and insolvency actions. There is little positive data available in the public domain; no official register of businesses and thus no means of reliable validation and verification.
14. CRAs have sought to improve the data available to them on which they base decisions, in order to broaden the range of businesses for which they can provide an assessment and in order to improve the accuracy of their assessments. The Breedon Report (*Boosting Finance Options for Business*, BIS, 2012) recommended that Government should consider whether further data should be made available to support the development of new finance products and markets to benefit business. Through BIPA, CRAs made recommendations to the Breedon Taskforce that the VAT register should be made available and would be an enabler to opening up the flow of credit to SMEs.
15. BIPA members report that the lack of publicly available information on sole traders and partnerships has been a concern for many years. Since the demise of the Business Names Registry in the late 1970s there has been no official centrally available source for this data. This gap has largely been filled by the CRAs using directory information, their own data collection processes and other data such as County Court judgments.
16. Data from the VAT register on length of time in business, trading address, names of owners, activities and previous business associations could help improve the availability of credit to VAT-registered traders. BIPA asserts that the knowledge that a business is trading and having the verification data from VAT registration should enable new businesses (subject to other components of the credit score) to be able to obtain trade credit earlier than would be currently recommended

and this should support business growth in the early years of trading when more structured forms of finance may be more difficult to secure.

Credit scoring processes

17. Most credit scoring systems assess the probability of business failure in the short term. Using regression analysis, current data and macro data such as interest rates and GDP, the credit score is a reflection of where an organisation sits within its trade sector and the total business population.
18. The methodology and weightings that calculate the scores are proprietary data and confidential to each organisation but, in general terms, scores are derived from the data listed at Annex B.
19. CRA reports and data are used in a wide range of sectors and markets. Customers range from small companies assessing new customers, to banks which integrate data into their own processes and scorecards used for loan and other business finance applications. CRA customers typically use an on-line service available from CRAs to obtain a credit report on an existing or potential customer. These are generated in real time, along with credits scores, credit limits and/or recommendations. Credit reports are used to verify credit applications and help in establishing whether to trade and set credit limits. They are also used to help prevent fraud.
20. Some businesses will monitor their customers through a CRA and be notified of changes on a daily basis. Positive changes result in credit scores and limits increasing, which can help businesses grow through accessing higher credit limits. Many CRAs offer a portfolio analysis and monitoring service where all customers can be analysed and tracked. This service is used mainly by larger and more sophisticated companies.

Project methodology

21. A representative sample of approximately 50,000 traders was taken from the VAT register and was provided to each of the three CRAs involved in the project (Experian, Equifax and Dun & Bradstreet). In addition a geographical sample of 30,000 traders, representing all traders registered in a single urban locality, was provided to the CRAs as part of the project.
22. Each CRA matched the VAT register data to its existing information and ran its credit scoring process with the additional data to model the impact on each trader's credit limit (but without having any impact on live credit scores or reports). The modelled credit limits before and after adding the VAT register data were then compared.

23. The data sample for each trader included the data fields listed at Annex A. Historical records, where relevant, were provided back to 30 January 1996. No taxpayer financial data was included in the data sample.
24. The CRAs calculated the impact on credit limits in the sample population, including cases where the credit limit was reduced or removed, as well as where new credit reports were created or credit limits were increased.
25. HMRC and BIS assessed the potential wider economic impact of an increase in trade credit limits across the VAT registered population, based on the modelled change in credit limits in the sample population.
26. The second geographical sample, comprising all traders in a single postcode cluster, was compared by each CRA to the data for businesses in this sample in their records, to explore whether this could identify any areas of under-coverage or potential VAT fraud cases in the sample population.

Model and output validation

27. The methodology used by each CRA to add VAT registration data to the credit scoring process was reviewed and validated by HMRC analysts, to ensure that it was in line with industry best practice and applied appropriately. This involved identifying the key underlying assumptions and reviewing the analysis to validate the process whereby the outputs were generated, in order to confirm the robustness of the modelling outputs.
28. Results summarising the impact on credit limits, including confidence intervals for the overall impact, were quality-assured by the CRAs. The CRAs have provided written assurance that their estimates of the impact on credit limits are accurate and consistent. They have checked these results to make sure that they are consistent with what one would expect from application of the validated methodology.

Project safeguards

29. Measures are in place to ensure that participation in the research project will not give any unfair advantage to those taking part. Participating CRAs are unable to use the HMRC data for any other purpose and will be required to destroy the data they received.
30. The trial was carried out with three CRAs – Experian, Equifax and Dun & Bradstreet. Legal agreements were put in place with each, and with an independent consultant, who was the principal point of contact between the CRAs and HMRC and was responsible for aggregating the CRAs' outputs into a collective anonymised output.

31. The legal basis for the project and for the sharing of the VAT registration data is Section 17 of the Commissioners for Revenue & Customs Act 2005 (which is the basis for most of HMRC's research projects with third parties). The Act allows information held by one part of the Department to be passed to any other part of the Department provided there is a valid reason. The participating CRAs were contracted to act on behalf of HMRC and were therefore treated as part of the Department, allowing sharing of the relevant data but only for the specific purpose of the research and only for as long as was necessary for the purposes of the project. In handling this data, the CRAs and their staff working on the project are bound by the same strict statutory confidentiality rules as HMRC officials, including possible criminal prosecution if they were to disclose identifying information.
32. The following requirements were included in the agreements to ensure the application of relevant legislation, standards and processes to safeguard data.
- The data were subject to the requirements of relevant legislation, including the Commissioners for Revenue and Customs Act, Data Protection Act, Official Secrets Act and Finance Acts. The CRAs executed confidentiality agreements, acknowledging that all information obtained from HMRC must be treated as confidential in accordance with Section 18 of the Commissioners for Revenue and Customs Act. CRAs ensured that all staff involved in the project were made individually aware of their responsibilities in relation to HMRC data and the importance of maintaining confidentiality.
 - The CRAs were required to protect HMRC against loss or disclosure of the data and would be liable up to prescribed limits for damages for any harm arising from their misuse of the data.
 - With regard to data handling and security, the agreements set out the process to ensure secure data transfer from HMRC to the CRAs. They included requirements to use HMRC data only for the specified purposes; to store it securely (the data were to be held and processed in the UK according to government standards for data storage and handling (HMG IA Standard Numbers 1&2) and the firms' security management systems policies had to meet ISO/IEC 27001 and 27002 standards); and to destroy it after the termination of the agreement (in accordance with HMG IA Standard Number 5 and to the standard set in British Standard BSEN15713). The agreements also set out the security procedures to be followed in case of any data loss, wrongful disclosure or breach in security.
 - The agreements set out the process for HMRC to validate the research methodology, and arrangements for managing commercially sensitive information.

Modelling analysis

33. The three participating CRAs produced model output independently. The validated results showing the impact on credit limits for the sample population were then combined to produce results averaged over the three CRAs. The individual model outputs are not available as they could disclose aspects of proprietary methodologies.
34. The current scoring methodology for one of the CRAs is such that the VAT information would have no impact on the credit limit scores for incorporated traders (companies), and it modelled impacts only for non-incorporated traders. Therefore the modelling results for incorporated traders are based on model output from two CRAs.
35. The impact on credit limit scores was analysed by type of trader (incorporated or non-incorporated) and by sector.

Results of representative sample analysis

36. The aggregated modelling results from the three CRAs showed that including non-financial VAT registration data in CRAs' credit scoring methodologies increased average net trade credit limits for the sample of traders. The VAT registration data provided reliable information on traders for whom the CRAs had previously not held any information, thereby enabling CRAs to calculate a trade credit limit for those traders for the first time. In addition the existing credit limits of some known traders were increased, reduced or removed.
37. Of the sample of 50,000 traders, some 40,000 (80 percent) could be identified or matched to CRA records. Of these 32,600 (81 percent) were already known to CRAs. All of the 26,600 incorporated businesses identified or matched were already known to the CRAs. Of the 13,400 non-incorporated traders identified or matched, around 45 percent were already known to CRAs. The VAT register therefore provided information on some 7,400 (unincorporated) traders for whom CRAs previously had no record.

Table 1: Traders matched and newly identified using VAT registration data

Existing and newly identified traders	Number of traders matched from the sample
Number of traders already known to CRAs	32,600
<i>Of which:</i>	<i>26,600</i>
<i>incorporated</i>	
<i>non-incorporated</i>	<i>6,000</i>
Number of traders newly identified by CRAs	7,400
<i>Of which:</i>	<i>0</i>

<i>incorporated</i>	
<i>non-incorporated</i>	7,400
Total number of traders matched or newly identified	40,000

38. Almost 10,000 traders from the sample could not be matched to CRA records. This could be because identifying information was recorded differently in the two databases. It was not possible, within the time limits of this project, to carry out data cleansing activities which might facilitate the creation of a trade credit record. If VAT registration data were to be made available, one would expect users to cleanse the data, which would be likely to increase matching levels.

Non-incorporated traders

39. The impact of VAT registration data on trade credit limits was very different for the sample populations of incorporated and non-incorporated traders.

40. Table 2 shows the impact for non-incorporated traders in the sample that were either matched to or newly identified. A total of 8,300 non-incorporated traders, representing 17 percent of the total sample or 62 percent of all matched or identified non-incorporated traders, would have been given a trade credit limit for the first time.

Table 2: Impact of VAT registration data on trade credit scoring of matched and newly identified non-incorporated traders¹

Impact on credit limit of VAT registration data	Number of non-incorporated traders	Percentage of non-incorporated traders (percent)
Trade credit limit increased	8,500	63
<i>Of which, credit limit given for the first time</i>	<i>8,300</i>	<i>62</i>
Trade credit limit decreased	200	1
Trade credit limit removed	10	<1
No change to credit limit	4,600	34
TOTAL	13,400	100

¹ Due to rounding, numbers presented do not add up precisely to the total.

41. Table 3, shows the net impact on total trade credit limits awarded to non-incorporated traders would be an increase £36 million or 120 percent.

Table 3: Change in trade credit limits of matched and newly identified non-incorporated traders due to VAT registration data

	Total credit limits before addition of VAT registration data (£ million)	Total credit limits after addition of VAT registration data (£ million)	Percentage increase (percent)
Trade credit limits of 6,000 traders already known to CRAs	30	31	4
Trade credit limits of 7,400 traders newly identified by CRAs using VAT registration data	0	35	-
TOTAL	30	66	120

Incorporated traders

42. Table 4 shows that the trade credit limit of 77 percent of incorporated traders matched by CRAs would be unaffected by adding VAT register data. Of those that were affected, some 17 percent would have enjoyed an increase in trade credit limit, whilst 6 percent suffered a reduction in their credit limit and less than 1 percent would have had their trade credit limit completely removed. No incorporated traders in the sample were newly identified by CRAs.

Table 4: Impact of VAT registration data on trade credit scoring of matched incorporated traders

Impact on credit limit of VAT registration data	Number of incorporated traders	Percentage of incorporated traders (percent)
Trade credit limit increased	4,500	17
<i>Of which, credit limit given for the first time</i>	<i>0</i>	<i>0</i>
Trade credit limit decreased	1,600	6
Trade credit limit removed	100	<1
No change to credit limit	20,400	77
TOTAL	26,600	100

43. Table 5 shows that the net impact on trade credit limits for incorporated traders would have been an increase of £10 million or 1 percent.

Table 5: Change in trade credit limits of matched incorporated traders due to VAT registration data

	Total credit limits before addition of VAT registration data (£ million)	Total credit limits after addition of VAT registration data (£ million)	Percentage increase
Trade credit limits of incorporated traders matched from the sample	1,110	1,120	1

Analysis by sector

44. The analysis of the impact on trade credit limits by sector was limited, as the sector classification systems vary by CRA. A basic analysis shows that approximately 60 percent of traders were in sectors which typically have an active demand for trade credit to finance the purchase of goods and services, such as construction, manufacturing and wholesale and retail. Around 20 percent of traders were in the service sector, where purchases of goods are likely to be less.

Combined results

45. Looking at the combined results for incorporated and non-incorporated traders, the addition of a sample of 50,000 records from the VAT register to CRA credit models resulted in an average modelled increase in total trade credit limits in the sample population of some £45 million (4 percent). The increase is concentrated amongst non-incorporated traders (an increase of around £35 million, more than double the original total of trade credit limits) with a small increase (of around £10 million, or just 1 percent above the original total of trade credit limits) for incorporated traders. Roughly three quarters of this was due to creation of new credit limit reports for traders not previously given a limit, and around a quarter was due to an increase in existing trade credit limits.

46. The modelling exercise was a static analysis. If VAT register data were to be made available, it is likely that CRAs would dynamically improve their data cleansing and scoring methodologies by analysing the results of the new data, leading to further improvements in trade credit limits and potentially reducing further the likelihood of a reduced or removed trade credit limit.

Economic impact

47. The main issues in the analysis, carried out jointly by HMRC and BIS, are the impact of use of VAT registration data on the availability of trade credit for the

entire VAT registered population, the likely take up of that credit and the resulting impacts of that.

48. The results from the representative sample analysis can reasonably be scaled up to the whole of the VAT-registered population to give an indication of the potential impact on availability of trade credit. Scaling up the £45 million net impact for the sample of 50,000 to the full VAT-registered population of 1.9 million traders suggests a net increase in trade credit limits for VAT registered businesses of the order of £1.8 billion. If CRAs were then able to refine their methodologies to improve matching levels from the 80 percent achieved during the research project, as suggested in the Combined Results section above, this number would increase further.
49. The modelling analysis indicates that the bulk of the increase would accrue to non-incorporated businesses such as partnerships and sole traders. The most likely beneficiaries would be businesses which because of their newness, small size or activities, did not have an existing credit footprint. Among corporate businesses, newly-established businesses would be likely to benefit disproportionately, as CRAs tend to have less information on them.
50. To estimate the extent to which the increase in trade credit limits is likely to be reflected in increased borrowing and/or purchasing, requires further modelling, informed by judgements about the likely nature of existing trade credit relationships, utilisation of trade credit by VAT registered traders, and likely displacement of other forms of finance.
51. The first assumption covers the extent to which increased credit limits lead to an increase in the amount of credit available in practice. This would be affected by the longevity of business relationships; where there is a new relationship or one-off transaction involving trade credit, it is reasonable to assume there will be a credit check and that the recommended credit limit will be a significant factor in determining the terms offered. Where the transaction involves a long-term supplier relationship, the track record of dealing with each other is likely to be more important than the posted credit limit, which may not be checked regularly. Moreover, experience suggests that suppliers can show a significant degree of inertia in their reliance on previous credit checks. Taking these effects together, an increased credit limit is likely to have significantly less impact where there is an existing business relationship.
52. The extent to which an increase in credit limits of £1.8 billion would actually generate additional credit opportunities depends on the relative balance between new and existing business relationships. There is limited evidence on this point. However, as the modelling shows that the increased credit limits would be disproportionately granted to smaller, newer and unincorporated businesses, there are grounds for assuming that the balance will be tilted towards new relationships.

53. The second assumption is in relation to the extent to which purchasers (in most cases entering new business relationships per the assumption above) would take advantage of the increase in their trade credit limits, potentially with multiple suppliers. Some VAT-registered traders would, by the nature of their business, be unlikely to use trade credit, even if available. Sectoral analysis shows that around 80 percent are in sectors where trade credit is likely to be of use. This suggests that the utilisation rate is likely to be relatively high.
54. The third assumption relates to the extent to which additional use of trade credit would reflect additional purchases (which could be of stock or capital investment) or replacement of other forms of finance. Trade credit is generally the cheapest form of external finance, so will usually be preferable to credit cards or overdrafts where both are available, but in many cases other financing options are not available. Where trade credit displaces other forms of finance, businesses will benefit from cheaper financing costs.
55. The availability of other finance facilities is a key determinant of the likely split between use of new trade credit for replacement finance or to increase purchases. The main beneficiaries of the increase in trade credit limits will be sole traders and partnerships without existing credit scores. These businesses are likely to be credit-constrained and therefore to make significant use of the extra credit.
56. In considering what assumption to make about availability, it is also possible to draw on evidence in the evaluation of the Enterprise Finance Guarantee³ scheme (BIS, 2013). This estimated a financial deadweight figure (businesses which could have received funding through sources other than the scheme) of just under 20 percent.

Conclusions

57. The economic impact of an increase in the availability of trade credit depends on the levels of take up. The evidence that is available suggests that the targeting of increased trade credit limits towards smaller, less-established and credit-constrained businesses should lead to a relatively high level of uptake. For the first two assumptions, reductions of between 10 – 20 percent to allow for existing supply relationships and then for the fact that some types of business make little or no use of trade credit are plausible, and would suggest an uptake of trade credit in the range of £1.1 billion - £1.4 billion. However, the level of uncertainty in making this estimate is significant. More conservative assumptions in the 20 – 35 percent range would lead to an estimated uptake of

³ The Enterprise Finance Guarantee (EFG) is a loan guarantee scheme to facilitate lending to viable businesses that have been turned down for a normal commercial loan due to a lack of security or a proven track record. Although the cohort of EFG-supported businesses will differ somewhat from the main beneficiaries in this case (being on the whole larger and more likely to be VAT registered/incorporated), they share the characteristic of being previously credit constrained, making the EFG evaluation a relevant source of information on financial deadweight.

approximately £0.7 billion - £1.1 billion. These provide an initial estimated range for the increased use of trade credit arising from use of VAT registration data of between £0.7 billion and £1.4 billion.

58. Some of this increased use of trade credit would simply displace use of other sources of finance, rather than being used to finance additional purchases. Given the evidence that businesses benefiting from additional trade credit face a significant degree of credit constraint, and evidence from the evaluation of the Enterprise Finance Guarantee that around 20 per cent of additional finance displaced existing finance, it seems likely that the bulk of the increased trade credit would finance new purchases. Using the financial deadweight estimate of around 20 per cent from the Enterprise Finance Guarantee evaluation leads to an estimated increase in trade credit, to fund new purchases, of £600 million - £1,100 million. If, for illustrative purposes, an assumption of one third displacement of existing finance is used, the increase in trade credit, used to finance new purchases, would be in the range of £500 million – £900 million.

Results of geographical sample analysis

59. The geographical sample was matched with CRA databases to determine whether it might provide information on potentially fraudulent VAT registrations.
60. Of the 30,000 cases in the geographical sample, some 20,000 were matched to records held by CRAs. Of these, around 300 (1 percent) were identified as potentially fraudulent businesses (for example, by comparison with information held by CRAs such as awareness of false information filed at Companies House, or data provided by law enforcement agencies).
61. The addresses of the 10,000 traders in the sample whose records were not held by CRAs were assessed, and some 500 (1.5 percent) were found to have addresses associated with those traders which were known to the CRA as being connected to potentially fraudulent activity. Thus in total, some 800 traders from the original sample of 30,000 (almost 3 percent) were identified as being potentially fraudulent. The geographical matching exercise stopped at this initial screening and did not seek to identify fraudsters or cross match with HMRC's existing fraud checking procedures.
62. Initial analysis also identified a group of traders which are not registered for VAT, despite there being some indication that they may meet the requirements to do so. There could be legitimate reasons for non-registration, such as the nature of the business (VAT exempt supplies) or the use of group structures.

63. In conclusion, the geographical matching exercise shows that there may be compliance benefits to HMRC in matching VAT registration data to additional databases to supplement existing processes. HMRC will consider how to follow up this work to assess more fully the value of such information to detection of fraud (eg, criminal attacks, hidden economy activity and evasion).

JUNE 2014
HMRC / BIS

Annex A

Data fields provided for research project

VAT Registration Number
Full Organisational Name (ie, name of proprietor or entity) and any previous Organisational Names
Dates for any Organisational Name changes
Full Trading Name and any previous Trading Names
Dates for any Trading Name changes
Current address (ie, principal place of business) and any previous addresses
Dates for any address changes
Telephone Number and any previous Telephone Numbers
Dates for any Telephone Number changes
Mobile Number and any previous Mobile Numbers
Dates for any Mobile Number changes
Email Address and any previous Email Addresses
Dates for any Email Address changes
Fax Number and any previous Fax Numbers
Dates for any Fax Number changes
Web Address and any previous Web Addresses
Dates for any Web Address changes
Legal Entity Status (eg, partnership, sole proprietor, company, public corporation, local authority, other)
Incorporation Number (if company)
Incorporation Date (if company)
Effective Date of Registration
Date of insolvency (if insolvent)
Date of deregistration (if deregistered)
Date of transfer of going concern
Current Trade Classification SIC Code
40 character (maximum) Trade Classification SIC Code description

Annex B

Variables used by credit reference agencies in existing credit scoring processes

Data on limited companies

- Length of time in business
- The nature of business conducted (some sectors are higher risk than others and more prone to business failure)
- Ownership – if there is a parent company or part of a group, the strength and financial standing of that group
- The background of the directors – do they have other directorships or have they been connected with failed businesses
- The size and financial strength. This data is usually taken from the accounts filed at Companies House. For large companies where full accounts are filed (balance sheet, profit and loss account, cash flow statement and notes to the accounts) the more accurate the score will be. For small companies that just file an abbreviated balance sheet it will be necessary to model the size of that business based on its industry sector, assets and employee number if this is known. These models are complex.
- Mortgages and charges – this is where a lender has security over the assets of a business. Should an organisation fail the lender has first call on the assets of the business. Mortgages and charges can have the effect of lowering a credit score.
- Negative data – this is mainly County Court judgements (CCJs). The value and number of CCJs will dictate the impact. For example, a small CCJ against a large quoted limited company will have no impact on the score whereas a large CCJ against a small company could be significant.
- Insolvency data – a winding up petition, meeting of creditors or the appointment of an administrator will result in the score going to zero.
- Value added data such as trade payment data which is often the most predictive information available and demonstrates a business's ability to pay creditors. Macro-economic data is also used by some CRAs. For example, this is especially relevant for highly geared companies should interest rates rise.
- Behavioural data is also used and is often predictive of problems in a business. Either individually or in combination these can impact a credit score. Examples of such data are:
 - Late filing of accounts at Companies House
 - Resignation of director(s)
 - Change of ownership
 - Change of auditors
 - Change of registered office
 - Sudden high volume of credit enquiries

Data on sole traders and partnerships

- Length of time in business

- Address and other contact information
- The nature of business conducted and trade sector
- Ownership
- Number of employees
- Negative data such as CCJs
- Value added data (normally trade payment information)