

# **Developments in measuring the burden placed on businesses responding to statistical surveys**

Ria Sanderson, Denise Williams, Megan Pope

ONS Methodology

# **Measuring Business Survey Burden Past, Present and Future**

Gary Brown

ONS Methodology

# Outline

---

- Context
- Past
- Present
- Future
- Methods
- Modelling
- Plans



# Context

---

- The UK Statistics Code of Practice (January 2009) requires UK producers to “Report annually the estimated costs of responding to statistical surveys...”

# Context

---

- The UK Statistics Code of Practice (January 2009) requires UK producers to “Report annually the estimated **annual** costs of responding to statistical surveys...”

# Context

---

- The UK Statistics Code of Practice (January 2009) requires UK producers to “Report annually the estimated **annual** costs of responding to statistical surveys...”
- The GSS uses the following definition

$$\text{Burden} = [n_s * \text{med}(t_s) + n_{\text{err}} * \text{med}(t_{\text{err}})] c_h + p_{\text{ext}} * n_s * \text{med}(c_{\text{ext}})$$

# Context

---

- The UK Statistics Code of Practice (January 2009) requires UK producers to “Report annually the estimated **annual** costs of responding to statistical surveys...”
- The GSS uses the following definition

$$\text{Burden} = [n_s * \text{med}(t_s) + n_{\text{err}} * \text{med}(t_{\text{err}})] c_h + p_{\text{ext}} * n_s * \text{med}(c_{\text{ext}})$$

- ONS reports these costs through the “On-Line List of Government Statistical Surveys (OLGSS)”

# Past

---

- Until 2012, ONS measured burden via triennial and quinquennial reviews, which considered “compliance” alongside all other quality issues



# Past

---

- Until 2012, ONS measured burden via triennial and quinquennial reviews, which considered “compliance” alongside all other quality issues
- In 2012, the in-depth tri- and quin- reviews were replaced by the Quality, Methods and Harmonisation Tool (QMHT), self-assessment by output managers based on previous reviews and knowledge of statistical changes

# Past

---

- Until 2012, ONS measured burden via triennial and quinquennial reviews, which considered “compliance” alongside all other quality issues
- In 2012, the in-depth tri- and quin- reviews were replaced by the Quality, Methods and Harmonisation Tool (QMHT), self-assessment by output managers based on previous reviews and knowledge of statistical changes
- In 2014, ONS established that QMHT was not meeting needs

# Present

---

- Late in 2014, ONS initiated a new process called “Regular Quality Reviews (RQR)”, reviewing quality issues with senior managers

# Present

---

- Late in 2014, ONS initiated a new process called “Regular Quality Reviews (RQR)”, reviewing quality issues with senior managers
- Business surveys required to gather up-to-date measures of compliance, in anticipation of changes due to administrative data and electronic data collection (EDC)

# Present

---

- Late in 2014, ONS initiated a new process called “Regular Quality Reviews (RQR)”, reviewing quality issues with senior managers
- Business surveys required to gather up-to-date measures of compliance, in anticipation of changes due to administrative data and electronic data collection (EDC)
- Traditional approach is an additional compliance survey, or additional questions on existing survey

# Future

---

- Short term – revise traditional process by addressing existing issues, making it more streamlined and hence more efficient

# Future

---

- Short term – revise traditional process by addressing existing issues, making it more streamlined and hence more efficient
- Medium term – modelling based on core of revised compliance surveys, if correlation issues can be resolved...

# Future

---

- Short term – revise traditional process by addressing existing issues, making it more streamlined and hence more efficient
- Medium term – modelling based on core of revised compliance surveys, if correlation issues can be resolved...
- Long term – EDC, which also has issues...



# Methods

| Method  | Pros  | Cons   |
|---|---|--|
| <b>PAST</b> <ul style="list-style-type: none"> <li>Run a small compliance survey</li> </ul>   | <ul style="list-style-type: none"> <li>Allows all required information to be collected</li> </ul>           | <ul style="list-style-type: none"> <li>Costs – questionnaires and survey processing expensive</li> <li>Burden – constitutes additional burden on respondents</li> </ul>  |
| <b>PRESENT</b> <ul style="list-style-type: none"> <li>Collect time on main survey questionnaire</li> </ul>  | <ul style="list-style-type: none"> <li>No additional burden placed on respondents</li> </ul>                | <ul style="list-style-type: none"> <li>Requirements – no information on external costs</li> <li>Consistency – a voluntary question on a mandatory survey</li> </ul>  |
| <b>FUTURE</b> <ul style="list-style-type: none"> <li>Collect information from EDC</li> </ul>  | <ul style="list-style-type: none"> <li>Times do not need to be collected via survey</li> </ul>              | <ul style="list-style-type: none"> <li>Costs – survey processing expense</li> <li>Requirements/Burden – still need questions on costs</li> </ul>   |
| <b>Looking BACK to plan the FUTURE?</b> <ul style="list-style-type: none"> <li>Run a small compliance survey, then model for other surveys</li> </ul> | <ul style="list-style-type: none"> <li>Information does not need to be collected for all surveys</li> </ul> | <ul style="list-style-type: none"> <li>Costs/Burden – still requires some compliance surveys</li> <li>Requirements/Consistency – need to identify ‘similar’ surveys &amp; variables correlated with completion time</li> </ul> |

# Methods

| Method   | Pros  | Cons   |
|--|---|--|
| <b>PAST</b> <ul style="list-style-type: none"> <li>Run a small compliance survey</li> </ul>  | <ul style="list-style-type: none"> <li>Allows all required information to be collected</li> </ul>           | <ul style="list-style-type: none"> <li>Costs – questionnaires and survey processing expensive</li> <li>Burden – constitutes additional burden on respondents</li> </ul>  |
| <b>PRESENT</b> <ul style="list-style-type: none"> <li>Collect time on main survey questionnaire</li> </ul>   | <ul style="list-style-type: none"> <li>No additional burden placed on respondents</li> </ul>                | <ul style="list-style-type: none"> <li>Requirements – no information on external costs</li> <li>Consistency – a voluntary question on a mandatory survey</li> </ul>  |
| <b>FUTURE</b> <ul style="list-style-type: none"> <li>Collect information from EDC</li> </ul>   | <ul style="list-style-type: none"> <li>Times do not need to be collected via survey</li> </ul>              | <ul style="list-style-type: none"> <li>Costs – survey processing expense</li> <li>Requirements/Burden – still need questions on costs</li> </ul>   |
| Looking <b>BACK</b> to plan <b>the FUTURE?</b> <ul style="list-style-type: none"> <li>Run a small compliance survey, then model for other surveys</li> </ul> | <ul style="list-style-type: none"> <li>Information does not need to be collected for all surveys</li> </ul> | <ul style="list-style-type: none"> <li>Costs/Burden – still requires some compliance surveys</li> <li>Requirements/Consistency – need to identify ‘similar’ surveys &amp; variables correlated with completion time</li> </ul> |

# Back to the Future (Modelling)

---



# Back to the Future (Modelling)

---



# Modelling

---



- Pilot



# Modelling

---



- Pilot
- Vehicle



# Modelling

---



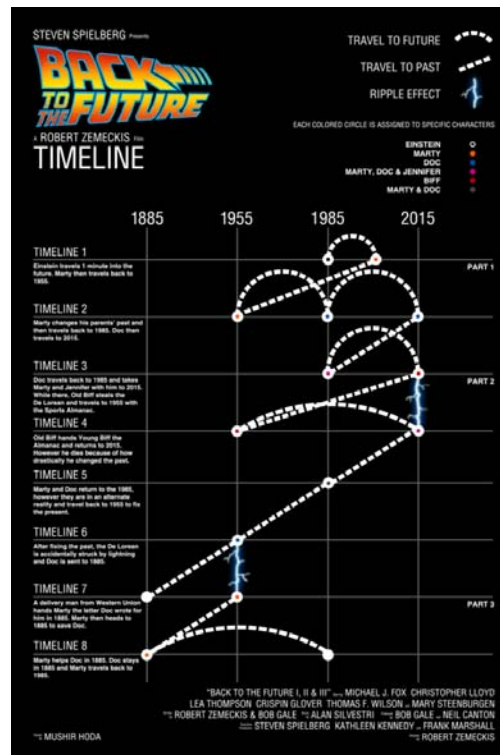
- Pilot
- Vehicle
- Test run



# Modelling



- Pilot
- Vehicle
- Test run
- Plans





# Modelling

---

- Pilot



# Modelling

---

- Pilot
  - Primary aim to revise traditional process

# Modelling

---

- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling

# Modelling

---

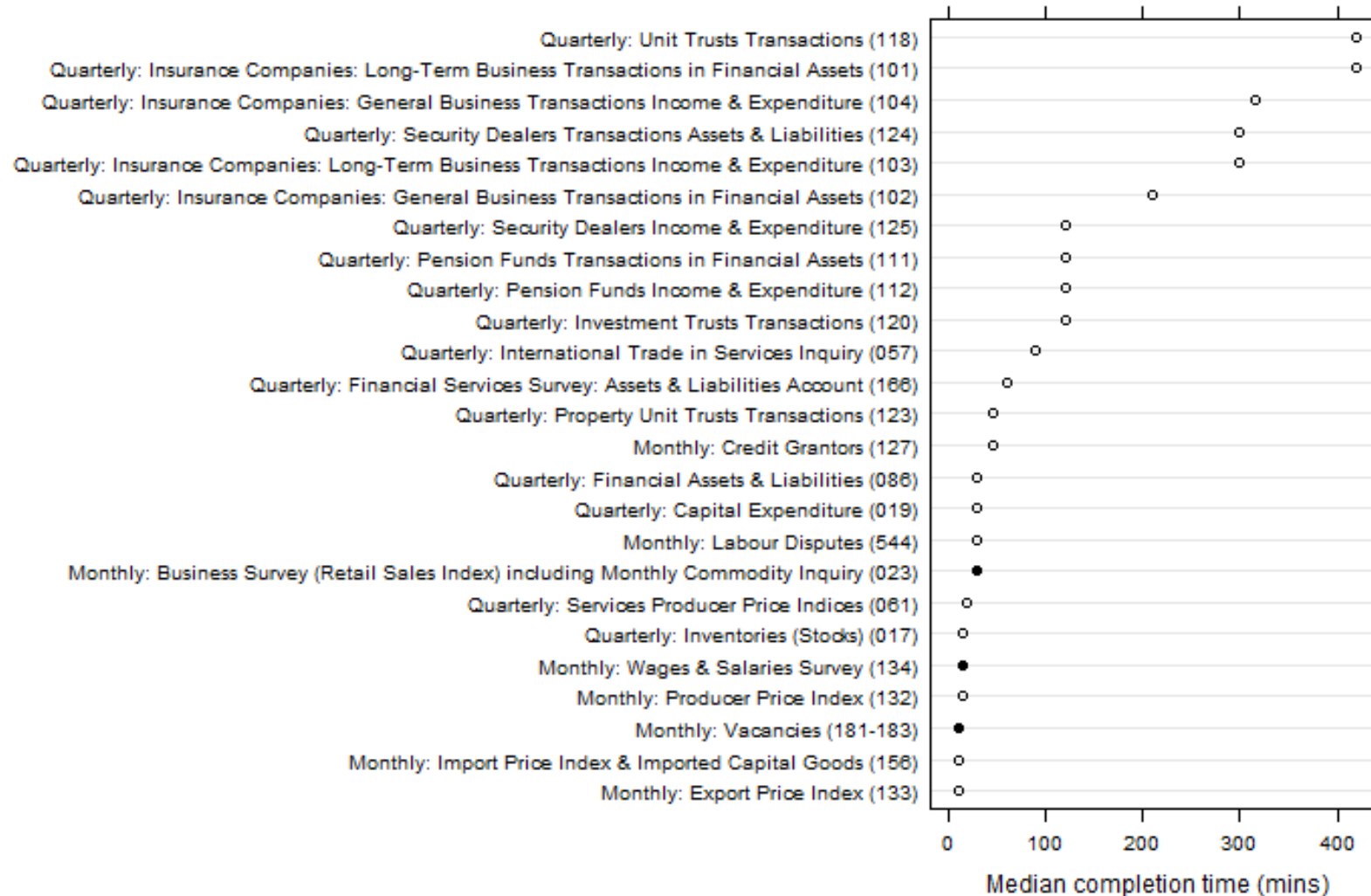
- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle

# Modelling

---

- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle
  - Identified 3 similar (monthly economic) surveys, and ran representative compliance survey of each

# Modelling



# Modelling

---

- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle
  - Identified 3 similar (monthly economic) surveys, and ran representative compliance survey of each
  - Managed process centrally

# Modelling

---

| <b>October –<br/>December 2014</b> | <b>Monthly<br/>Business Survey<br/>(Retail Sales<br/>Index)</b> | <b>Monthly Wages<br/>and Salaries<br/>Survey</b> | <b>Vacancies<br/>Survey</b> |
|------------------------------------|---|--|-----------------------------|
| Main survey<br>sample size         | 4,959   | 9,295  | 6,030                       |
| Review survey<br>sample size       | 501   | 773  | 600                         |
| Review sample<br>response rate     | 41%   | 71%  | 47%                         |



# Modelling

---

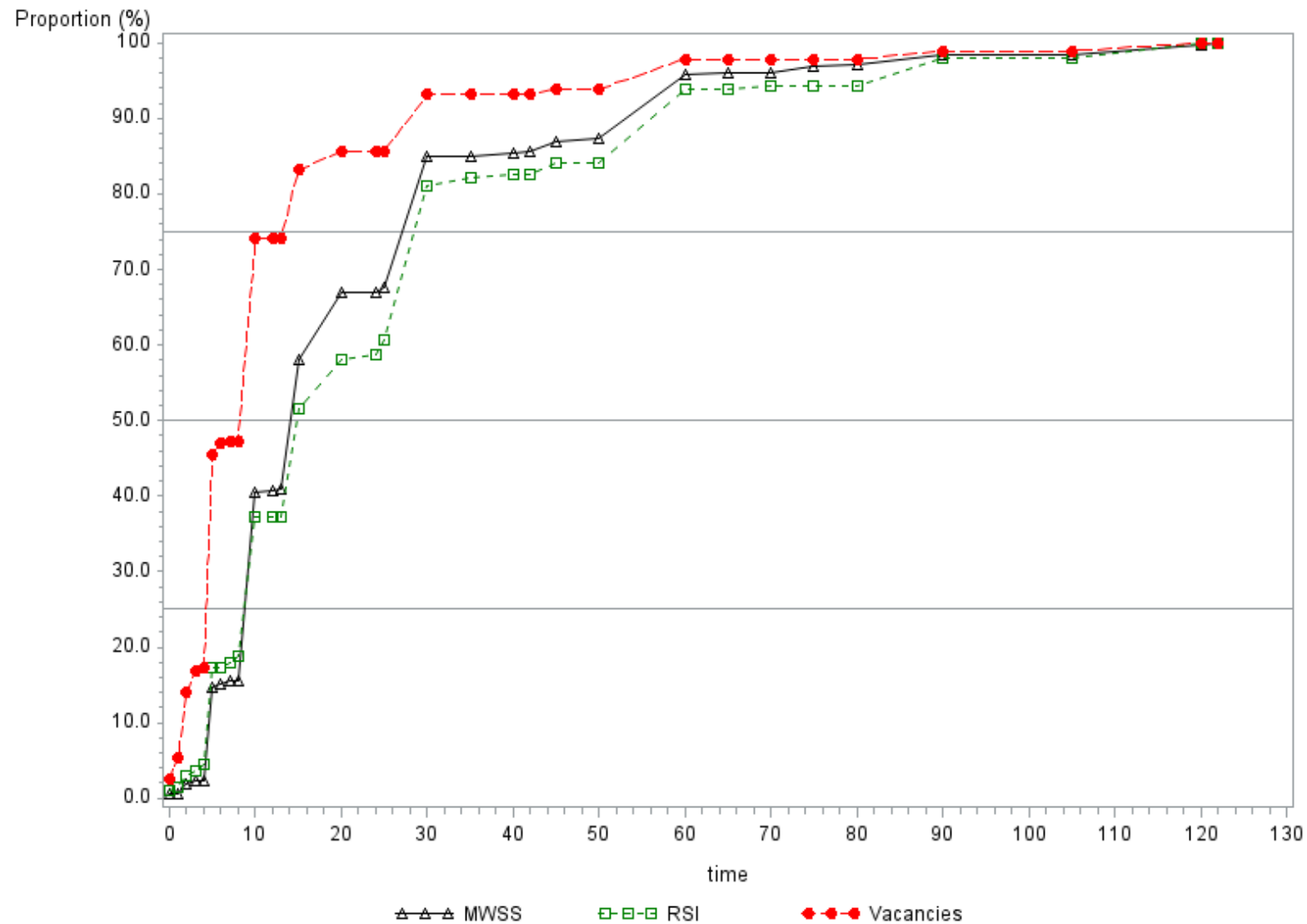
- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle
  - Identified 3 similar (monthly economic) surveys, and ran representative compliance survey of each
  - Managed process centrally
- Test run

# Modelling

---

- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle
  - Identified 3 similar (monthly economic) surveys, and ran representative compliance survey of each
  - Managed process centrally
- Test run
  - Poor correlations between survey variables & completion times due to discrete nature (5/10 mins)

# Modelling



# Modelling

---

- Pilot
  - Primary aim to revise traditional process
  - Secondary aim to investigate modelling
- Vehicle
  - Identified 3 similar (monthly economic) surveys, and ran representative compliance survey of each
  - Managed process centrally
- Test run
  - Poor correlations between survey variables & completion times due to discrete nature (5/10 mins)
  - Regression modelling unsuccessful ( $R^2$  0.16-0.19)

# Plans

---

- Successful pilot
  - modelling proved not a viable option
  - revised process worked effectively

# Plans

---

- Successful pilot
  - modelling proved not a viable option
  - revised process worked effectively
- Revised process will be used in the coming months to provide updated measurements of respondent burden

# Plans

---

- Successful pilot
  - modelling proved not a viable option
  - revised process worked effectively
- Revised process will be used in the coming months to provide updated measurements of respondent burden
- Burden measurements will be benchmark for future developments, quantifying the savings accrued through the use of EDC methods & the greater use of administrative data

# Plans

---

- Successful pilot
  - modelling proved not a viable option
  - revised process worked effectively
- Revised process will be used in the coming months to provide updated measurements of respondent burden
- Burden measurements will be benchmark for future developments, quantifying the savings accrued through the use of EDC methods & the greater use of administrative/**BIG?** data



# Questions

---



- Happy to answer questions now, or via email: [ria.sanderson@ons.gov.uk](mailto:ria.sanderson@ons.gov.uk)

# Questions

---



- Happy to answer questions now, or via email:  
[ria.sanderson@ons.gov.uk](mailto:ria.sanderson@ons.gov.uk)  
or [Gary.Brown@ons.gov.uk](mailto:Gary.Brown@ons.gov.uk)