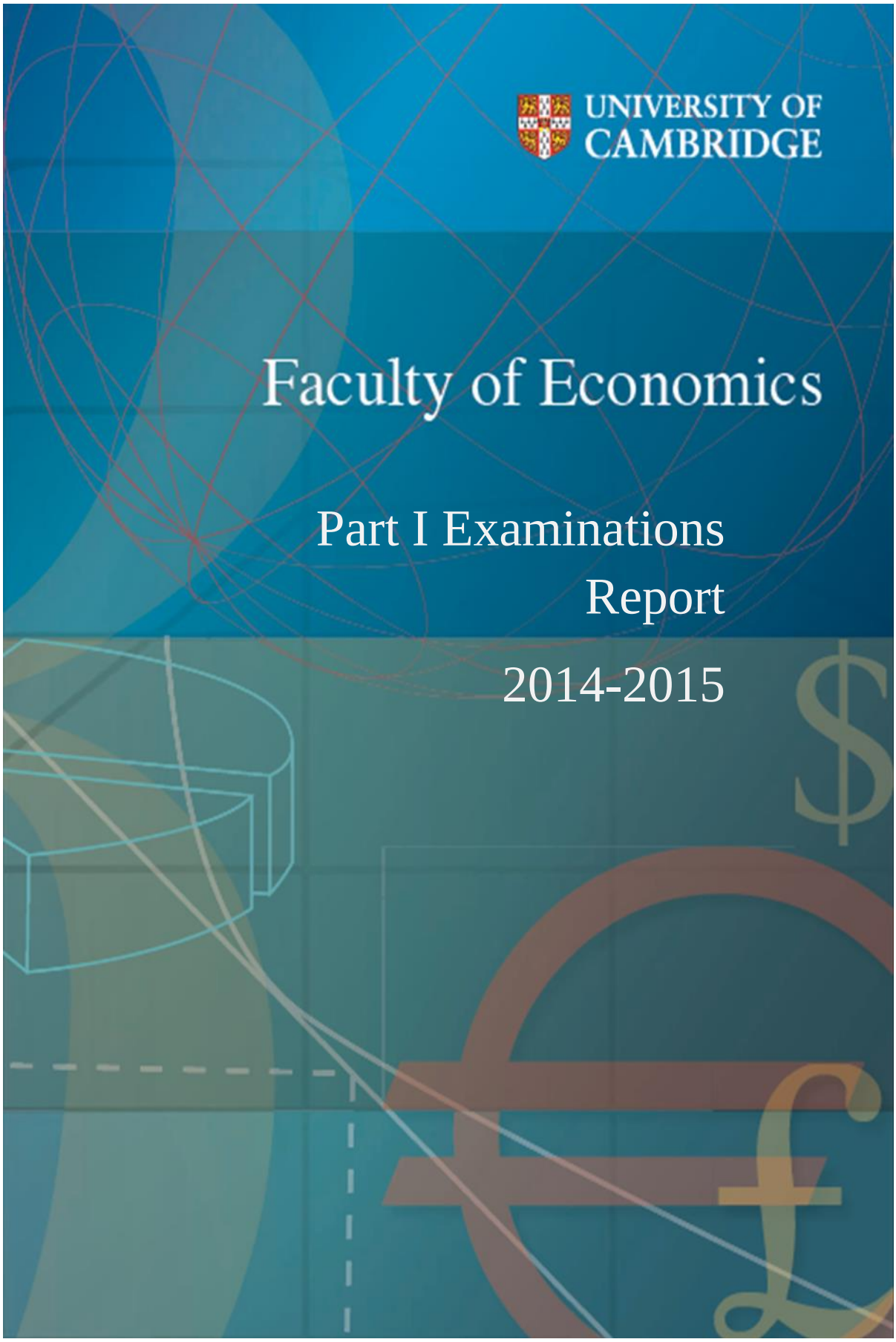
UNIVERSITY OF
CAMBRIDGE
Faculty of Economics
Part I Examinations
Report
2014-2015

CHAIRMAN'S REPORT

Part I of the Economics Tripos 2014-2015

Candidates were generally very well-prepared for the Part 1 examinations with few poor performances and with candidates answering the questions across all five papers to a generally high standard.

Of the 150 valid scripts; overall 35.9% attained a First (55 candidates); 47.1% an Upper Second (72 candidates); 13.7% a Lower Second (21 candidates) and 1.3% a Third (2 candidates). Three candidates were not classified. This distribution is broadly in line with the results of recent years.

Paper 1 mean: 66.2%, standard deviation: 7.8 and median: 68%.
Paper 2 mean: 67.9%, standard deviation: 6.9 and median: 68%.
Paper 3 maths mean: 68.3%, standard deviation: 8.2 and median: 68%.
Paper 3 stats mean: 58.3%, standard deviation: 15.2 and median: 59%.
Paper 3 overall mean: 63.3%, standard deviation: 10.6 and median: 63.5%.
Paper 4 mean: 65.3%, standard deviation: 4 and median: 65%.
Paper 5 mean: 63.8%, standard deviation: 6.3 and median: 64%.
All papers mean: 64.4%, standard deviation: 9.3 and median: 65.6%.

The paper setting process proceeded smoothly with all papers having been submitted on time and only minor adjustments being made in the paper setting meeting, with further changes advocated by the external examiner.

Candidates' marks for Paper 1 were scaled down.

No issues of plagiarism were identified.

There were some procedural concerns: one script was removed from the lecture theatre and three required transcription due to illegibility.

Under current rules candidates are permitted to request marks per question. The Board noted that given this rule we will need to record in the spreadsheets any adjustments so that there is consistency. Since the spreadsheets are write-protected this will require some reworking.

As Chair I must highly commend the internal examiners and the external examiner for their assiduous efforts and great application (many internal examiners having undertaken such duties on other parts of the Tripos and for the MPhil, thus their workload being high). They have all worked very hard and marked with great accuracy. I know all of the examiners wish to thank the administrators for their very hard work and great care, particularly Cherie Lee, Silvana Dean and Craig Peacock. Our particular thanks to the external examiner for his extremely effective work for this Exam Board, his commitment and astute judgment being immeasurably valuable. Finally I wish to endorse the external's considered and helpful suggestions in his accompanying report.

Nigel Knight

External Examiner
Cambridge Economics Tripos Part I

30th June 2015

External Examiners Report – Cambridge Economics Tripos Part I

1 I should like to commend the Faculty of Economics on the high standards of the examination paper and the answers. The questions are clearly very demanding; the majority students are clearly up to the demands. The standards are certainly comparable to e.g., the LSE and Oxford, where I have acted previously as external examiner.

2 I should like also to thank the Faculty for the excellent organization and administration of the process.

3 I found the processes for assessment, examination and the determination of awards to be sound and fair. There are therefore only a few issues arising from this year's papers and marks that I should like to comment on.

4 It would be good to see more obvious consistency across papers in the practice of first and second readers. Paper 4 is a good example of this done well, with comprehensive comments from both readers on the cover sheet for each script.

5 There were some specific issues with Paper 3. I would encourage greater co-ordination across the two parts of the paper (this is a general point for all "co-authored" papers), in particular ensuring that the length of the overall paper is appropriate. I strongly suspect that the length of the paper explains some of the difference in the mark distribution between the maths and statistics parts—in particular, the higher variance of the latter, where the scripts seem to indicate that a number of students were running very short of time on reaching the second part of the paper. Greater co-ordination will also help external examiners to assess the whole paper.

6 The use of adjustments to correct overall mark distributions that are out-of-line is standard and, in itself, unproblematic. I would encourage two practices:

a. The adjustment method should preferably be simple, definitely be clear, so that its effects can be checked easily.
b. Robustness checks could be carried out to see whether a particular adjustment on a particular paper affects an individual student's overall classification. (The adjustments to Paper 3 give rise to several examples of this.)

7 It would be best practice to see more evidence that checks have been made on whether there is excessive unevenness in the marks across optional questions. (The issue is to ensure that students are not disadvantaged solely through their choice of optional questions.)

8 I suggest that the regulation for cases in which scripts have been taken from the examination hall be re-considered. The current practice, followed in the Examiners' meeting, appears to be at variance with how this issue is dealt with at some other institutions in the UK.

Professor Robin Mason
University of Exeter Business School

Paper 1
Microeconomics
151 Scripts

Overall, students did very well on this paper, as reflected in the results. Over two-fifths achieved a First, more than a third a 2.1, with the vast majority of the remainder earning a 2.2. These were unusually high marks, but the examiners are pleased that these were deserved.

Brief comments on the questions:

Section A was largely well done. Most students did question A1 well. On question A2, some answers incorrectly tried to identify the substitution effect in terms of the change in quantity demanded of one good when the price of the other good changed. More worryingly, some answers confused inferior goods with Giffen goods. Both questions A3 and A4 were done well. On question A5, the better answers recognised the exceptional cases of corner solutions and discrete inputs. On question A6, most candidates got the right final answer but many included a lot of unnecessary algebra and some were confused about the conceptual distinction between competitive equilibrium and Pareto-efficiency. It was only necessary to note (i) that the MRS is equal to the equilibrium price ratio; (ii) the agents therefore both have the same MRS; (iii) market-clearing implies that the total consumed of *x* is 3 and of *y* is 2. The answer then follows very easily.

Section B

Question B7, an essay question on game theory and experiments, was done by a very small number of candidates, perhaps because there was no similar essay in the supervision assignments. Those who did the question were well informed.

Question B8, on repeated games, was also attempted by relatively few students, but answers were mostly good. Some confused Bertrand and Cournot. Relatively few checked that behaviour off the equilibrium path is Nash.

Question B9 was done well, with the best answers doing a good job of providing intuition and explanation where necessary.

Question B10, on the provision of a public good, was generally well done. In part (d) relatively few looked for the mixed strategy equilibrium.

Questions B11 and B12 were both popular choices, perhaps because they were relatively straightforward questions. The key on question 12 was that the isoquants were linear, and most answers recognised this early on.

We would like to emphasize to students that it is important that: (i) they write answers clearly and legibly; and (ii) they read the question carefully before answering. Especially in multi-part questions that combine problem-solving with explanations, it is important not to omit the latter.

At the top end of the scale, the highest marks were earned by students who combined technical skill with an ability to explain the intuition behind the problem solving. The best scripts were a genuine pleasure to mark.

Dr Sanjay Jain
Prof. Robert Evans

Paper 2
Macroeconomics
151 Scripts

The exam had the standard format of six section A (short) questions and six section B (long) questions. Two students withdrew from the exam. All but two students answered the required number of questions and none answered more questions than required. Students are reminded that they do *not* get rewarded for answering more questions than necessary. Students are also reminded that they should read the questions *very carefully* before starting to write their answer. The large majority of the students reached a class of II.1 or I for this paper, and no students failed the exam. The average mark was approximately 67% and the median approximately 68%, with a standard deviation of approximately 7. The distribution of number of answers for each of the long questions was as follows:

B7	**B8**	**B9**	**B10**	**B11**	**B12**
6	38	4	148	104	2

We note that very few students chose essay questions (B7, B9 and B12), and all students did at least one of the problem questions (B8, B10 and B11). Our comments on each of the questions follow:

A1: This was an easy question that almost everyone answered correctly.

A2: Most students gave satisfactory answers to this question. The first part proved more challenging, since many students failed to answer the question in the context of the medium/long run. While it is true that the short run impact on UK unemployment of the new law can be negative, in the medium/long run the natural rate will unambiguously decline (as labour mobility improves). Students did not realise that although British people may find it more difficult to find jobs in the short run (after a potential influx of immigrants), they will also have more freedom to move to other European countries.

A3: This was a straightforward question that most students addressed correctly. Some students claimed that the money multiplier can be less than one (through some mathematically wrong derivations), while they should have used their common sense and intuition to see that this is not possible (bank notes and coins cannot physically disappear, unless banks burn them or destroy them).

A4: The majority of students answered this question well, able to explain what the Keynes effect was and why it depended on the existence of an LM curve. Inevitably a minority had not revised the topic. Their answers were often constructed around a generic description of the Keynesian expenditure multiplier.

A5: Answers to this question were good on the whole, particularly to part (a). Some students struggled to see a link between tax increases and total saving in part (b): a good answer could have argued that consumption was a function of disposable income, and thus could be expected to fall with tax increases. Some answers suggested that an increase in taxes could be accompanied by an increase in government expenditure, but this seemed a bit circuitous. Weaker students neglected the question's focus on long-run analysis, and attempted to answer using the Mundell-Fleming model.

A6: Many students struggled with part (a) of this question, on unemployment benefit. This made it a good discriminator. Good answers were able to explain that unemployment benefit payments operated as an automatic stabiliser, and could be analysed in the same manner as a linear income tax. A cut in benefits would raise the sensitivity of disposable income to output, raising the multiplier. Part (b) was answered well by those candidates (a majority) who were comfortable with the IS-MP approach to short-run analysis. Those that stuck to IS-LM struggled.

B7: Only a handful of students answered this question and many of them did not really understand what the question was asking. The question was about the prediction of the classical model of smaller differences in income across countries than we observe for a sensible capital share of 1/3, and the fact the role of 'adjusting' TFP to account for this. However, half of the students that did this question described and talked about the Solow growth model and its predictions.

B8: This was a straightforward extension of the Solow growth model with a government. Most students that attempted the question did a good job for parts (a)-(c). Students attempted the more complicated part (d) but not many of them realised that there are potentially two forces at play: on one hand, since the tax revenue raised is put into production, some loss of capital will be restored in the long run; on the other hand, depending on the exact production function, taxation may reduce private investment.

B9: Few students answered this question, but generally did a good job in addressing the main points of the question.

B10: This question attracted answers from almost all candidates, and generally was answered very well. Few students struggled with the numerical questions in part (a). The best discriminator in part (b) proved to be the discussion (sub-part (i)): most candidates identified the general point that feedback between the domestic real interest rate and the fiscal deficit could be capturing a 'risk premium'. The strongest answers went further, pointing to the current account deficit identified in part (a) of the question, and arguing from this that a fiscal deficit could reflect an attempt by the government to sustain high employment in the face of an overvalued currency. In this case the premium could additionally reflect the ultimate risk of currency devaluation.

B11: This was a popular question. A few students 'imposed' $r = 0$ as the zero lower bound condition, instead of $i = 0$. Most mistakes and problems arose from the fact that students didn't realise that the AD curve has a kink at $Y = 400$, which makes it vertical below zero inflation. Part (c) of the question was answered satisfactorily but some students, but was a good discriminator.

B12: This question attracted only two answers, perhaps reflecting conservative revision strategies: the material had not previously been examined. Both answers were weak, with little focus on the precise empirical question asked – opting instead for vague discussions of UK economic policy since the early 1990s, and textbook descriptions of the AS-AD model.

Summary: Overall we believe that this was a successful exam. The various changes in the curriculum were incorporated nicely in the exam questions and students rose to the new challenges with no major problems. We noted that some students did not do well because they chose not to study some parts of the material and couldn't answer some of the compulsory, section A questions. We emphasise that this is not a good exam strategy.

Dr Chryssi Giannitsarou
Dr Charles Brendon

Paper 3
Quantitative Methods in Economics - Statistics
151 Scripts

Varied standard. Some excellent scripts but some showed very poor and sketchy understanding of the topics.

Q1 Main mistake was assuming independence in (a). Simply writing $0.4^n \rightarrow 0$ is not really enough detail to count as a proof of part (d).

Q2 The required integration stumped some. Some forgot the limits of integration (or put in 'x' itself as a limit) and got into a mess.

Q3 Care should have been taken stating assumptions. N large says the distribution of the mean is approximately normal (CLT) and furthermore that the required critical values from t-distributions ca be approximated by normal critical values

Q4 Done quite well though some forgot to distinguish estimates of coefficients from the coefficients themselves.

Q5 Not the popular choice but overall done quite well. Having written down power as Prob(Reject H_0| H_1 true) some had difficulty calculating the required probabilities.

Q6 Carelessness about whether these were standard deviations or variances and even sample sizes led to calculation errors. In (d) many saw heteroscedasticity and either did not discuss the impact or thought it led to biases in the estimated coefficient.

Dr Donald Roberson

Quantitative Methods in Economics – Exam

The exam took the same format as in recent years, with Section A consisting of four short and compulsory questions, and Section B consisting of two longer questions, with the candidates answering only 1.

This was the first year I had taught the full maths course. It went fairly smoothly, with the students seeming on top throughout. The exam performances bore this perception out. The questions were certainly no easier than in previous years, and somewhat longer. But the students did well, with the marks achieved averaging 68%. The results obtained across questions was fairly even, with slightly worse performances on questions centered on material (integration) covered before coming to Cambridge.

Dr Tony Lawson

Paper 4
Political and Sociological Aspects of Economics
150 Scripts

Candidates predominantly chose questions from the 'Governing Britain since 1945' and the 'Analysis of Economic Development' sections of the Paper. Generally, questions were answered well; the best answers were those where candidates clarified and explicated the notions relevant to the questions with great precision. 150 candidates sat this exam.

1. Disappointingly, this question was only attempted by 20 candidates, in effect producing less than one-fifth of the responses that the two questions on labour economics did last year. Those who did appeared to be less well-prepared than they were for the other seven questions on the exam paper: the average mark was 63.3%, the lowest of the eight questions. Good answers discussed the declining effectiveness of trade unions, rising inequality, political factors and fears of social dumping as a result of the expansion of the European Union as reasons why governments were becoming more interested in statutory minimum wages. They also identified a broad range of reasons why minimum wages may only have a limited impact, such as profitability constraints on firms, why theoretically they can increase unemployment and problems with enforcement. The best answers examined the academic literature related to the question set and assessed the comparative importance of each factor in their answers.

2. 136 candidates attempted this question, making it by far the most popular on the exam paper. Most candidates identified the impact of the Second World War, the leftwards shift in the median voter, the influence of the civil service and the works of academics such as William Beveridge and John Maynard Keynes. Good answers assessed whether each contributing factor could be described as "political" or not. The best challenged the idea of consensus in theory and practice, citing examples and the literature in support of their answers. The average mark was 64.6%.

3. 117 candidates answered this question. Many candidates argued that there was no such thing as Conservative beliefs, and that by following the median voter, Margaret Thatcher did not follow a different path to her predecessors (except as regards to her adversarial/presidential style). The best answers either challenged the extent to which the Thatcher government's policies really were a break from the past, or compared her policies and style to different types of beliefs and policies pursued by previous Conservative prime ministers. The average mark was 65.2%.

4. 97 candidates answered this question—fewer than for the other two Governing Britain options on the paper. Most candidates could assess to what extent the policies and ideas followed by Tony Blair's government were similar to those pursued by the Conservative party between 1979 and 1997. Good candidates assessed to what extent New Labour followed policies that could be regarded as free market (free economy) or authoritarian (strong state) in a similar way to Thatcher, and whether they were forced by electoral circumstances to do this or not. Poor answers either confused the two terms, ignored the second one, or ignored the part of the question which asked whether any consensus was voluntary or not. The average mark was 64.4%, the quality of responses being marginally worse than for the other two Governing Britain questions.

5. Although the European Integration question was a very interesting and important one —on a vital section of the paper, no candidate chose to answer this question. Regarding the question itself, the single market is a necessary condition for monetary union, but sustainable EMU also requires the following: Optimal Currency Area adjustment mechanisms of price & wage flexibility and capital & labour mobility, a banking union, a fiscal/transfer union. Also candidates should have discussed Eichengreen's distinction between the economic and political necessity of EMU. Candidates should

have explained the incomplete architecture of EMU in the context of the geo-political circumstances in the aftermath of the fall of the Berlin wall. Candidates should have referenced the Delors report, the Commission's "One Market, One Money" and the Maastricht Treaty. Candidates should have contrasted the Maastricht convergence criteria with Gordon Browns "five economic tests", emphasising performance/convergence in real as opposed to nominal variables.

6. 102 candidates chose to answer this question. The average mark was 65.6%. The best answers outlined the Ray model of human capital and growth or another endogenous growth model; an algebraic derivation of the model was essential for a high scoring answer. The important point is the correlation between investments in physical and human capital and growth. The best candidates discussed the empirical evidence which indicates that investment in primary schooling has the highest returns, but that Lucas etc. argue that investment in on-the-job training is more important. The best candidates also discussed the literature on quantity and quality of schooling, specifically studies by Duflo, Bedi and Edwards, and the issues concerning teacher truancy in papers by Kremer etc. The finest answers provided a succinct yet highly detailed synopsis of the original research studies.

7. 74 candidates chose to answer this question. The average mark was 64.9%. The best answers discussed the debate in the literature about the definition of social capital, though it can be thought of as norms and networks organised on the basis of communities. The best answers also discussed trust data, membership data and their associated problems. Such answers also cited Putnam's work and evidence from the Knack and Keefer study and others that social capital – in addition to physical, natural and human capital – causes growth. The finest answers provided a succinct yet highly detailed synopsis of the original research studies.

8. 54 candidates chose to answer this question. The average mark was 66.7%. The best answers defined income inequality as a disparity of income distribution and presented two definitions, such as Lorenz Curves and Gini Coefficients. They also discussed Kuznets' Inverted-U hypothesis. A geometric representation of these models being a prerequisite for a high scoring answer. The best answers pointed out that inequality affects savings on the level of income, *viz.* it is lower at low incomes, higher for the middle classes; represented by an 'S'-shape. The best answers used current evidence on the Kuznets hypothesis in studies by Ahlulawia, Deninger and Squire which show that structural characteristics may matter more than an automatic relationship between income and income inequality. The finest answers provided a succinct yet highly detailed synopsis of the original research studies.

Mr Nigel Knight
Mr Charles Read

Paper 5
British Economic History
151

151 candidates took this paper and the examiners felt the standard was generally quite good overall. 23.84% were awarded first class marks and 56.95% II.1s. Candidates provided some well thought out responses to some of the questions. Many of the answers showed the candidates were well prepared and had deep discussion into the readings with supervisors. As in previous years we thank the supervisors for engaging the candidates in the material and making the scripts that much more interesting.

Question	1	2	3	4	5	6	7	8	9	10
Average mark	66.4	64.9	64.8	64.5	64.2	64.7	61.2	62.7	63.0	61.2
Standard deviation	7.8	9.8	7.6	9.5	6.1	8.5	10.2	7.9	5.8	9.7
No. candidates attempting	38	10	8	42	142	109	68	106	64	17

The most popular questions were on the question of too much capital going abroad in the late Victorian period, educational failures in the late Victorian, and unemployment during the interwar period. Question 5 (Victorian capital exports and industry finance) was by far the most popular question. Those candidates who received lower-second-class marks were those who presented a supervision based 'capital exports' essay without a clear discussion of the specific hypotheses in the question. Good answers related the issue of capital exports to evidence on the finance of British Industry. Most answers on the failings of British education in the late Victorian period discussed the scientific gaps that existed with specific examples at the elementary, secondary and tertiary levels. Good responses were quite detailed here and contrasted the British system with that of Germany. Excellent answers were provided by some candidates using Broadberry's evidence on labour productivity. These scripts often contrasted the manufacturing sector with the service sector. Virtually none of the answers discussed human capital more generally or used Broadberry's evidence on human capital to compare Britain with the USA and Germany. Only the best answers included some case studies of industries where there was failure to implement technology and explained specifically how education might have played a role. Question 8 (unemployment) was generally well answered. Most students were able to focus on the 1930s and discuss both parts to the question. The division of the question into two parts is there to help students focus on the relevant issues. Weaker students tended to blend both parts into an unfocused essay.

Some of the other popular question were on the late Victorian and interwar periods. Question 7 asked student to comment on the idea of failure in late Victorian Britain from 1873-1896. This question was sufficiently well done by most but there was a lack of coverage on the topic found in most responses. Few discussed the general comparative patterns of growth and decline using the concepts of a `Climacteric' vs. `Kondratieff' swings. Many discussed the core debate on Victorian

failure between Aldcroft and McCloskey but few went beyond this. Some of the best answers used empirical evidence by Broadberry on manufacturing labour productivity comparisons to support their argument. The best answers also discussed Crafts views on institutions. All of the essays were missing a discussion on the debate over timing and the issue of whether the problems lay in the late Victorian or the Edwardian period. Another popular question was question 9 on the General Tariff. Students had a good understanding of the literature on the General Tariff. Most were able to focus on two mechanisms drawing on evidence from effective protection rates, import substitution, macroeconomic effects. Weaker students simply reported on differences in the literature without much attempt at reconciling with the evidence. In general students need to be able to focus on evidence and not simply report on different views.

A smaller number of candidates attempted the questions on the industrial revolution. Question 1 on the agricultural revolution was a standard question and a moderate number of candidates attempted this question. Most provided a brief discussion of agricultural inventions, although this there was not enough detail here. Some discussed enclosure and the onset of capitalist farming. Most debated the idea of capital and labour release playing a role in the Industrial Revolution. The best answers also provided some discussion of demand driven industrialisation resulting from the increasing productivity in the agricultural sector and the increased desire to consume industrial goods over food. Question 4 on standards-of-living during the industrial revolution also received a moderate number of responses. Most answers to this question discussed the evidence from Lindert and Williamson in contrast to Feinstein. Better answers also included the more recent evidence from Clark and Allen. The best answers here could have discussed other evidence on real wages by Horrell and Humphries or Hunt and Botham. Most candidates chose to discuss anthropometric evidence in addition to the real wage evidence. A few also discussed consumption. In some cases more detail could have been put into the alternative evidence and candidates may have struggled to cover the entire topic.

Question 2 on the concept of an industrious revolution was generally well done although there was slightly more variance in the quality of responses. This was mainly due to the fact that some candidates provided much greater coverage of the topic. Most answers defined the industrious revolution and provided evidence on the increase in the hours worked. Better answers also discussed if this was driven by greater consumerism. Most used evidence from Allen and Weisdorf to make this point but a few also used evidence by Muldrew. The best answers discussed some of the evidence from Clark and Van der Werf, whilst none of the candidates discussed the evidence by Horrell, Humphries and Sneath. Question 3 received the smallest number of responses likely owing to the fact that it covered new material added to the paper. Candidates who attempted this question typically did a good job although there was some variance due to the small number of respondents. Most answers discussed the sugar trade in the British West Indies and the cost/benefit analysis on colonies. The best answers gave a detailed discussion on the Navigation Acts and Britain's relationship with the 13 Colonies. The very best answers also commented on India and China.

Question 10 (path-dependence and the 1920s) was answered only by 17 candidates and displayed a bimodal distribution. Most students did not really display much evidence that they had researched the concept of path-dependence; most had the vague idea that "history matters", using a few general points from lectures to draft their response. Student responses are strengthened by reading, taking notes and thinking about an issue- lecture-dependence resulted in some weak answers.

Dr Nicholas Zammit
Dr Solomos Solomou

End of Reports