

Actuarial Society of South Africa

EXAMINATION

May 2017

Subject A302 — Communications

EXAMINERS' REPORT

This subject report has been written with the aim of helping candidates. This report summarises the main points that the examiners were looking for and some common problems encountered.

Candidates were asked to draft the following:

- An email to a friend
- A fact sheet for a client

QUESTION 1 – Email

The candidates were expected to explain the relationship between supply and demand for employment and conclude whether the introduction of a minimum wage affected the number of people employed in an occupation.

Almost all candidates got all the marks available for plotting the graphs of the supply and demand formulae. Very few candidates however were able to explain what the graphs represented. In particular there was very little appreciation of the marginal nature of the supply and demand model, even though this was given in the question. Many candidates interpreted the wage as the average wage or the wage that all those employed in the occupation earned. The supply of employment was more readily understood than the demand for employment by employers.

Application of the supply and demand formulae to different wages levels was not dealt with as well as would be expected. This application of the formulae was necessary to conclude that the effect on employment of the introduction of a minimum wage is dependent on the level of the minimum wage relative to the equilibrium wage.

It continues to amaze the examiners that candidates seem to be unable to do simple calculations correctly.

Common mistakes were:

- Candidates don't use all the information provided to them in the question. The examiners try to only give information that is relevant to answering the question. Candidates should check to see they have used all the information given.
- Candidates fail to identify all the instructions in the question and often miss opportunities for easy marks.
- Numerous candidates concluded based on wrong calculations that a minimum wage had no effect on employment at all.

It seems that candidates may not have allocated their time between the two questions well, with too much time spent on question 1 leaving insufficient time for question 2 to be answered sufficiently well.

QUESTION 2 – Fact Sheet

The question required candidates to draft a personalised fact sheet for a client to meet legal requirements and communicate the salient details of a loan. The basic details of the loan were required as well as some information to allow the client to appreciate the benefits of early repayment as well as the risk of an increase in interest rates.

While the candidates had to present factual information to the client in a succinct and clear way, there was an expectation that clients would be encouraged to repay a loan as soon as possible.

The basic loan information was generally well covered, but the risk associated with an increase in interest rates and the benefit of early repayment was less well covered.

Where errors in calculations were made, these were penalised at the point the error was made. Where the incorrect result was then used in a subsequent calculation, the original error was not penalised again.

Common mistakes

- A surprising number of candidates used the interest rate provided as an annual effective interest rate rather than as an annual interest rate compounded monthly as the question stated. This is a basic actuarial concept and makes the examiners wonder why students have managed to progress to this level of the exams without being able to make this differentiation.
- Many candidates were not able to apply a change in interest rate mid-way through the term of the loan.
- Only a few candidates provided a good enough explanation of how the interest rate and consequently loan repayments could change during the term of loan.

Many candidates would benefit from applying a basic reasonability check on their calculation results.

May 2017 – Sample Answer – Question 1

From: alex@yahoo.com

Sent: 31 March 2017

To: Anele@gmail.com

Subject: Minimum wages don't always reduce employment

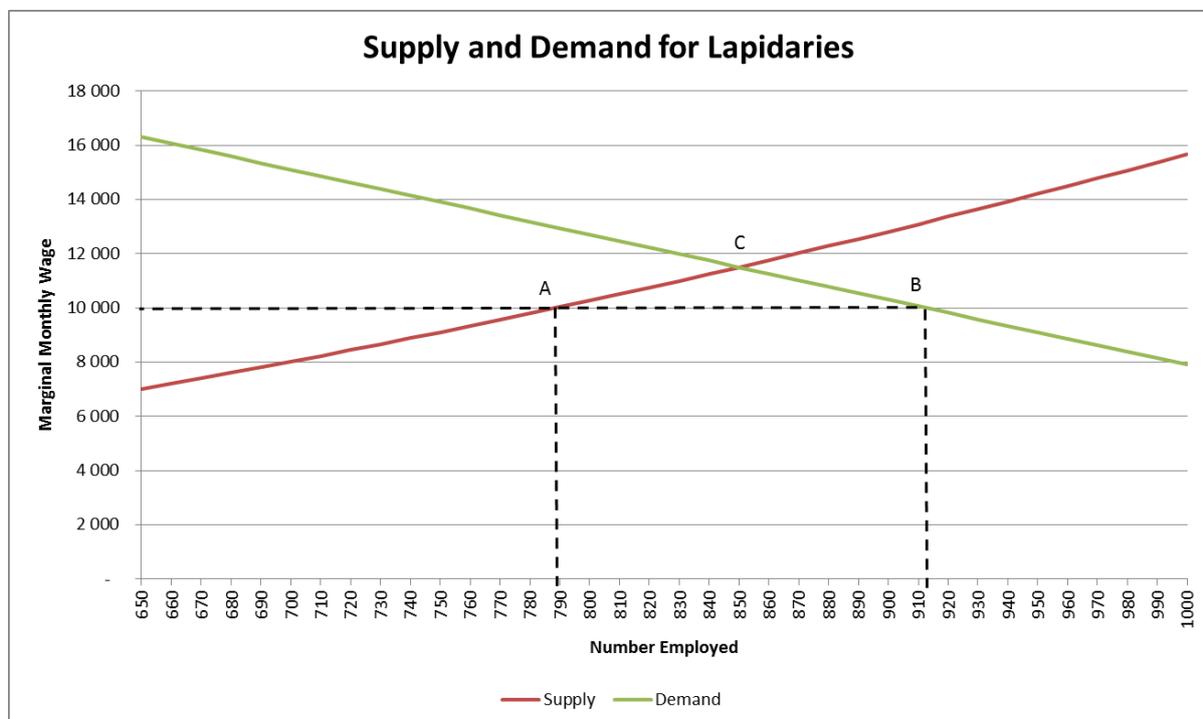
Hi Anele

Our heated debate the other day on minimum wages and employment got me thinking. I decided to write you this email to illustrate the economics of the supply and demand for employment and that minimum wages don't always reduce employment.

Employers only want to hire a new employee if their business revenue increases by more than the cost of the new employee. The higher the cost of employment, the lower the demand for employees will be. This is called the demand for employment.

Lapidaries may choose to be employed or remain unemployed depending on how much salary is on offer. The higher the salary on offer the more people are willing to be employed in an occupation. This is called the supply for employment.

The graph below shows the relationship between this supply and demand for a Lapidary.



The way to read this graph is that at a monthly wage of R10 000 employers are willing to increase employment from 912 to 913 – point B on the graph. This is where the demand line meets the R10 000 monthly wage line. At a monthly salary on offer of R10 000 789 Lapidaries would be willing to work – point A on the graph.

Employers are profit driven and will increase wages to attract more employees while the cost of each employee is less than the revenue that they can earn. Employers will reduce employment until the highest paid employee is profitable. This market force together with the choice of employees to be employed in the occupation drives the employment market to move towards point C on the graph.

Point C on the graph is where the demand line and the supply line meet each other. This is where the monthly wage the employers are willing to pay to hire one more employee is equal to the monthly wage needed to attract one more employee to employment. The market is said to be in equilibrium. In this example it's at a R11 500 monthly wage and 850 Lapidaries would be employed.

Based on this model we can expect 85% of Lapidaries to be employed and 15% unemployed or employed in other occupations.

If the minimum wage were increased from R7 000 to R9 000 then there would be no change in the number of Lapidaries that want to work and employers would still be happy to employ the current number. This is because at 850 employees the revenue earned in respect of each employee is still greater than the cost of each employee.

However, if the minimum wage were increased to R13 000, then although the number of Lapidaries that want to work would increase from 850 to 907, employers would reduce their employment from 850 to 788 because the cost of those 68 employees would be higher than the revenue that the employers can earn from their work.

The increase in the minimum wage to R9 000 would have no effect on employment, but an increase to R13 000 would increase unemployment from 15% to 21.2%. Therefore a minimum wage doesn't always reduce employment.

This supply and demand model is a very simplified view of the employment situation and there are many influences on wages and employment. The model makes an assumption that the employer can't increase the prices of their products if employment costs go up which is often not true.

While the model may not be perfect it gives us a very high level view of what could be expected to happen with a change in the minimum wage.

See you at Bernie's at the weekend.

Regards

Alex

[598 Words]

May 2017 – Sample Answer – Question 2

Loan Agreement Fact Sheet

Thank you for considering us for your loan. This fact sheet provides all the information that you may need to make informed decisions about your loan.

Borrower:		Credit Provider:	
Name	Mr D Trump	Name	DLR Credit Inc.
Tel	555 1276	Tel	666 2795
Email	donaltd@trumpcorp.com	Email	info@dlr.com
Physical address	#1 Trump Towers	Physical address	7 Avenida Bucareli

Details of your loan

Amount Borrowed	\$10 000
Loan Term	4 Years
Loan Start Date	1 March 2017
Date Repayment Ends	28 February 2021
Interest Rate	The interest rate at the start of the loan is 9% per annum. Interest is charged monthly on the last day of the month at 0.75% on the outstanding amount owed at the start of the month. The interest rate may go up or down. The interest rate will change by the same amount of the change in the prime interest rate quoted by XYZ bank. We will notify you when the interest rate changes.
Repayments	The minimum monthly repayment at the start of the loan is \$248.85 payable on the last day of each month. The first repayment is due on 31 March 2017. The last repayment is due on 28 February 2021
Total Interest paid	If the interest rate remains unchanged for the term of the loan then your total repayments will be \$11 944.80 of which loan amount repaid is <u>\$10 000.00</u> the interest you will have paid is <u>\$ 1 944.80</u>
Other Charges	A once off administration charge of \$50 is due on 1 st March 2017. You can repay this loan early by regular additional monthly repayments or a once off repayment. There is no additional charge for early repayment.
Monthly Statement	We will provide you with a monthly statement showing you the amount that you still owe at the end of each month as well as interest and other charges for the month.
Non Payment	Non-payment of your monthly repayments will result in DLR Credit taking ownership of your assets to repay the loan. We may also list your name with a credit bureau which means that you won't be able to borrow money from any credit provider in the future.

Variations in your loan terms

You may pay more than the minimum monthly repayment. If you choose to increase your monthly repayment from \$248.85 to \$278.45 from the start of the loan, the loan will be paid off six months earlier and you will save \$249.90 in interest.

Your loan's interest rate can change which will increase or decrease the minimum monthly repayment and interest that you will pay. If the prime interest rate increases by 3% then your loan interest rate will increase from 9% to 12% per annum.

If this increase occurred on 1 March 2019, then your minimum monthly repayment amount will increase from \$248.85 to \$256.42 which will then be payable from 31 March 2019 until the end of the loan term or until interest rates change again. In this case you will pay \$181.68 additional interest over the term of the loan.

Contact us

DLR Credit subscribes to the principles of the responsible use of credit and wants to ensure that you fully understand the terms of your loan.

Please call us on 0811252123 if anything is unclear in this fact sheet

[546 words]