

**ADVANCED DIPLOMA****GENERAL EXAMINATION - NOTE FORM ANSWERS****APRIL 2016****Question 1****[16.2 mins, 9 marks]****Q1.a.****(9 mins, 5 marks)****[Marking scheme: 1/3 mark for each good point]****All share**

High P/E buys low P/E for shares therefore eps enhancement.

Eps of new shares =  $\text{TXe} / \text{CA shares issued} = 50 / 100 = 0.5 - 50c$

$$\text{Ex-post eps} = \frac{(100 + 50)}{(250 + 100)} = \frac{150}{350} = 0.429$$

- weighted average of 0.40 and 0.50

Alternatively, low yielding share buys high yielding share (based on acquisition price) ie 5.0% vs 6.3%, therefore eps will increase. Known as "Bootstrapping" CA looks like high growth company, TX low growth, but post-acquisition combined entity may well show lower growth than CA.

**All debt**

Earnings yield of TX at 8.3% which easily exceeds the after tax cost of CA debt so eps enhancement

16m of interest buys net earnings of 34m (50 – 16) with no increase in shares.

In this example there is no increase in market cap. Value so there is no gain or loss to either set of shareholders

- the eps accretion is just maths.

Which is best alternative? - Neither, they just have different but equivalent risk-return profiles. Acquiring with debt gives the higher eps but the shares are more risky because of higher leverage. But some real gain from tax ?

**Q1.b****(7.2 mins, 4 marks)****[Marking scheme: 1/3 mark for each good point]**

Assume this is a zero-sum game as the numbers indicate.

CA has paid a premium of 200m. If TX is not worth that then “old” CA business value falls by 200

If TX is worth the premium via synergies or cost savings the combined market cap should be 2,800 but only if the market believes the story.

If the acquisition is thought to be strategically, financially or organisationally unsound the value may well fall below the 2600 – value destruction(?)

Value creation, lack of it, or value destruction – is the key to ex-post value..

**Question 2****[43.2 mins, 24 marks]****[Marking scheme: 0.4 mark for each correct calculation or good point]****Question 2.a.****(14.4 mins, 8 marks)**

NB Average calculations were also accepted.

2015 closing price market cap. = 2,693.5m, net debt = 100.9 EV = 2,794.4

		Average Comps.	
P/E 2015 = 25.9 (2693/104)	High by any standard	15.9	Calculations
EV/EBITDA = 16.06 (2794/174)	High	11.0	Must be
Equity Market/Book = 4.91(2694/549)	Very high	3.7	accurate for marks

This looks like the market expects ABC continuing as a high growth company. All valuation ratios are higher than the comparable sector companies **averaged** and there is only one value (PIB 5.6 Company R) with a higher value on any ratio?

In addition, the P/E is 30% above the FTSE 250 average figure and the market/book ratio is double the FTSE 100 figure.

ABC bigger EV than the 4 comparables therefore should be harder to beat their averages, so even better.

**Question 2.b.****(19.8 mins, 11 marks)****[Marking scheme: 0.4 mark for each good point or calculation]**

Share price (average calculations also acceptable).

- EV = 2794m
- Average 2014-15 debt = 125.6
- Pre-tax cost of debt =  $3.1/125.6 = 2.47\%$
- After tax @ calculated 22% = 1.93%  
 $K_e = 1.25 + (0.99 \times 4.19) = 5.4\%$  historical and prospective low risk-free rates, recent equity risk premium
- E/EV =  $2694/2794 = 96.4\%$ , GD/EV = 51% C/EV = 1.5%
- WACC =  $(0.96 \times 5.4\%) + (0.051 \times 1.9\%) - (0.015 \times 1.1\%) = \underline{5.26\%}$   
 (range 5% to 6%)  
 WACC virtually same as  $K_e$  – unlevered company

S.C.F. at 2015

Operating profit	138.5	
+ Amortisation	21.5	
Cash profit	160	
+ Depreciation	14	
- Maintenance Capex 120%?	(17)	
± Replacement W.C.	(1)	120% x depreciation
Tax on op. profit @ 22% <sup>19</sup>	(30)	NWA 106m x 1% inflation
	126	

2016 10% growth gives 138.6m

$$EV = \frac{SCF}{WACC - g} \quad 2,794 = \frac{138.6}{0.0526 - g}$$

$$\frac{SCF}{EV} = \frac{138.6}{2794} = 0.0496$$

$$g = WACC - \frac{SCF}{EV}$$

$$g = 0.0526 - 0.0496 = 0.003$$

= 0.3% expected growth (extra mark if between – 0.5 and + 0.5% growth)

For a historically high growth company the shares look under-valued.

For 1% growth

$$\frac{SCF}{WACC - g \text{ (infl)}} = \frac{138.6}{0.0526 - 0.01 \text{ (in perp.)}} = 3,254m$$

Zero growth = 2,635m  
 2% growth = 4,252m

**Question 2.c.****(9.0 mins, 5 marks)****[Marking scheme: 1/3 mark for each good point or calculation]**

For 3 years (2012 – 15)

- i) Using period start and finish prices CAGR in share price =  $\sqrt[3]{7.12/3.73} - 1 = 17.54\%$   
 Average dividend yield = 2.04%. Total 19.59% p.a. (without re-investment)

2012-2015 Dividend yield =  $36.7/376.9/4.05 = 2.40\% \rightarrow 2.09\%, 1.99\%, 1.68\%$ , average 2.04%

Alternative quick yield calculation

average divi	=	40.9m
average shares	=	377.65
average dps	=	10.83p
average price	=	5.445
average yield	=	1.989%

- ii) More accurately, with re-investment of dividends

9.74 x 7.12 / 4.05	=	17.12
+ 10.43 x 7.12 / 5.00	=	14.85
+ 11.17 x 7.12 / 5.61	=	14.18
+ 11.97	=	11.97
		<u><u>58.12 pence</u></u>

$$\sqrt[3]{(7.12 + 0.58) / 3.73} - 1 = 19.9\% \text{ p.a.}$$

Compared with FTSE 250 return of (  $\sqrt[3]{164.8} = 10.5\%$  ) - excellent  
 Compared with required return on equity of 5.26% - excellent!

Dividend yield at 2.04% is well below FTSE 100 average of 3.4% and even below average of 2.6% for FTSE 250.

Return is mainly from capital growth in share price.

Key driver is continuing growth in sales, profits and eps, given no significant share issues.

**Question 3 (14.4 mins, 8 marks)****[Marking scheme: ½ mark for each good point]**

- Cost management during growth (and acquisitions) as margins reducing slightly
- Continuing the 7% growth in sales including via acquisitions
- Debt management and servicing not a problem – just an opportunity to leverage
- Stocks + debtors – creditors % sales is increasing – needs to be controlled – payables up less than stocks and receivables
- Cost of carrying surplus cash is gradually reducing
- Plenty of cash generated for w.c., capex at 119% of depreciation, tax, dividends and interest
- Internal cash flow always positive (45% op. profits)
  - used historically for acquisitions so need to keep looking for acquisitions with growth opportunities
- Re-financing maturing debt plus net additions to debt for new acquisitions
- Monitoring and managing three divisions
- Tax rate OK
- Keep an eye on P&L dividend cover at c 2.3 (cash cover fine) – even though low dividend yield to shareholder it is important to be able to sustain existing dividend policy.

**Question 4****[23.4 mins, 13 marks]****[Marking scheme: ¼ mark for each good point]**

Any subordinated debt or preferred equity instrument with a claim on assets senior to ordinary shares but subordinated to senior debt.

**Q4.a.****(9.0 mins, 5 marks)**

Almost any financing instrument that is neither senior conventional debt nor ordinary share capital – great variety

Quasi-equity, quasi-debt, with elements of both equity and debt

eg closer to debt – a PIK loan with part of the return accruing until re-financing

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- Looks like equity to senior lenders, looks like debt to ordinary shareholders  
eg Closer to equity - preference shares – minimal dividends, no guaranteed capital gain upside.
- Function in corporate finance - bridges the “mezzanine gap” between senior debt at normal levels and often minimal genuine equity. Typically used in leveraged buy-out/acquisition structures, when more debt is required beyond normal lending limits and more ordinary share capital is too expensive or not available
- Relatively expensive compared with conventional debt because of higher risk
- Often has the tax benefits of debt
- Cash payments of interest/dividends and repayment of capital can be structured to match available corporate cash flows not vice versa, eg “bullets”
- Subordinated as to security, servicing and repayment tenor
- Possible conversion rights
- Can be tailored to a particular situation
- Attractiveness to lenders and investors – high return for higher risks, especially when interest rates are low, as recently

May involve an equity option enabling control/ownership of the company if things go badly wrong

In private equity deals the involvement with new management aims to deliver good returns by turning the company round and thereby justifying and rewarding the higher level of risk.

Leverages the returns to ordinary shares.

#### Q4.b.

(14.4 mins, 8 marks)

[Marking scheme: 1/3 mark for each good point]

From April 2015 Exam	% Total	EBITDAx	Cost	Maturity
Senior sec'd. bank loans (3 tranches)	59%	6.5x	LIBOR± 3-9	8-10yrs
Secured PIK facility	14%	1.5 x	LIBOR + 9.5	15yrs
Unsecured junior debt	7%	0.8 x	8%	10-12yrs
Preference shares	19%	2.2 x	8%	never
Share capital	<u>1%</u>	<u>0.6 x</u>	20%-0%	never

EV 11.7 x

ie 20% “equity”, 80% debt

Risk and return both increase progressively from senior secured debt to ordinary equity, with progressive subordination, also reduced security (from “good” to zero) and increasing maturities (from 5 years to “never”).

Generic structure might have just 4 elements: senior, secured debt/junior unsecured debt, preference shares/ordinary shares.

Explanation and details of chosen structure.

### **Question 5**

**[14.4 mins, 8 marks]**

#### **Q5.a.**

**(9 mins, 5 marks)**

**[Marking scheme: for a pass, (a) identification of a majority of the comparability features, credible surrogates and differentiation of “too much debt” and “too high interest rate;” (b) two credible points explained.]**

### **BACKGROUND**

#### **The issue**

International companies may try to minimise profits in high tax countries by overburdening subsidiaries with:

- more debt than could be sustained by a comparable stand-alone business
- at a level of interest exceeding that which a comparable business would attract

This deprives the country where the subsidiary is based on tax returns.

#### **The remedy**

- arm's length pricing of subsidiary debt by the parent
- as a backstop, a cap on interest paid by the subsidiary based on either a fixed percentage of the subsidiary's EBITDA or a percentage equivalent to the parent group's worldwide net interest/EBITDA.

#### **Assumptions**

Whether or not the company has been using intra-group debt to move profits into lower tax domains, assume that it is now obeying the arm's length principle.

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## **Comparable**

Is there a company in each country similar to the local subsidiary and with similar debt?

## **Debt Features**

- Same country
- Same sector
- Same credit risk
- Secured borrower
- Same term
- Same amount
- Cross border

The parent is a borrower as it is already funding its subsidiaries intra group so it knows the credit margin it is paying on its facilities.

The parent, as the lender to its subsidiaries, is secured as it owns the assets.

The parent should be capable of assessing the credit risk of each of its subsidiaries and of surrogate companies in the same or similar sectors.

However, for third party validation, the parent should hire a corporate credit consultant to validate the credit risk assessment of each of its subsidiaries and also of the benchmark surrogates identified in each country (some may be rated).

If surrogate borrowers cannot be found, then if there is a bond market with issuers from a similar sector, these could be used instead.

The parent is cross-border lending, so a sovereign risk premium, if appropriate, should be factored in.

The data provided by this exercise should enable the company to calibrate credit margins for subsidiaries across the range of countries where it currently operates. This analysis should establish whether rates charged are too high.

This data and analysis should also enable a judgement about whether amount of debt provided is too high.

As well as managing tax, companies may also wish to minimise equity risk by substituting debt for equity in the subsidiary capital structure. If so, then it may be worthwhile accepting a penalty for apparently thin capitalisation if the monetary and reputational cost is less than the benefit of the reduction in equity sovereign risk.

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**Q5.b.****(5.4 mins, 3 marks)**

Using worldwide net interest/EBITDA as a percentage cap may disadvantage the UK parent company since interest rates on debt are likely to be higher in less developed countries where arm's length comparables are more difficult to establish.

Additionally, many large corporates are holding substantial cash balances, so worldwide net interest/EBITDA will be even lower still than country-specific EBITDA.

So in such countries it is worthwhile to try to establish a comparable if at all possible.

Footnote: Payment of tax by international companies has moved further into the spotlight of public opinion following the agreement between the UK tax authorities and Google that the latter would pay only £130m for its UK activities in the preceding 10 years. The former UK Chancellor Lord Lawson has opined that the current tax regime is incapable of dealing with complex global corporate activities and should be replaced by a tax on sales in each country of operation.

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**Question 6****[36.0 mins, 20 marks]**

**[Marking scheme: for a pass, (a) four credible points on P/L and on B/S; (b) three credible points linked to shareholder return; (c) framework for differentiating four fx regimes and linking to responses].**

**GENERAL COMMENTS**

Business models of individual companies which operate internationally differ widely. Here are three basic types:

- Type 1: Subsidiaries are stand-alone. They manufacture, resource and sell domestically.
- Type 2: Parent manufactures/resources all products at home base, exports to subsidiaries which sell domestically.
- Type 3: Subsidiary manufactures/resources all products locally and exports all output to parent.

Variants on these three include subsidiaries which sell regionally as well as domestically, resource regionally or internationally as well as domestically and trade intragroup.

Further variants include subsidiaries which are 100% owned, majority owned, in minority owned joint ventures or in some other form of third party association.

Yet further variants include operations in developed, emerging or centrally planned economies, with implications for risk and hedging opportunities.

And so on . . . . your France-based company is Type 2.

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**Q6.a.****(9.0 mins, 5 marks)**

Impact on P/L			Impact on B/S		
@ Subsidiary level			@ Subsidiary level		
Euro value	Rises	Falls	Euro value	Rises	Falls
•Costs	+	-	•Parent equity invest.	o	o
•Sales (Assume no price change)	o	o	•Fx debt (Assume all intragroup & parent risk)	o	o
•Profits	-	+	•Retained Earnings [Equivalent change in assets]	-	+
•Div (Assume P/O ratio same)	-	+			
@ Group level			@ Group level		
•Consol. sales	-	+	•Equity invest	-	+
•Consol. profits	- -	+ +	•Intragroup debt (Assume parent risk)	-	+
•Div	- -	+ +	•Retained Earnings [Equivalent change in assets]	- -	+ +

Note: if assumptions are relaxed, then other factors come into play, eg if no local competition, then a local price rise may be possible to compensate for EUR equivalent sales fall.

**Q6.b.****(9.0 mins, 5 marks)**

The impact on the Group's potential performance is on:

- Sales revenue
- Earnings per share
- Return on equity
- Return on capital

Trends in sales revenue signal growth.

Trends in eps signal sustainable profitability.

Trends in return on capital signal efficiency of use of financial resources.

Trends in return on equity signal capital structure efficiency.

In combination, these trends determine investor future expectation and influence share price.

**Q6.c.****(18.0 mins, 10 marks)**

Following a string of acquisitions, management of fx is fragmented.

Overseas operating companies are focused on marketing, sales and service. All are 100% owned.

Up to half of total sales is overseas in economies where managing fx risk is not straightforward and may require business model related solutions.

So to provide visibility and oversight, avoid distracting local management and include business model considerations, the company is centralising fx management.

**General comments**

Using derivatives to hedge fx has two main benefits for ongoing business:

- reduces volatility where the longer term relationship between the two currencies is relatively stable (mean reversion)
- provides time to adjust the business model where the longer term relationship is trending in one direction, eg alter cost structure, alter price, alter product mix

**Policy**

All subsidiaries to be invoiced in their local currency.

In return for relieving subsidiaries of fx risk, comprehensive and up-to-date sales forecasts to be a top level subsidiary priority and ultimately the responsibility of the commercial director.

Management of transaction, translation and strategic fx risk managed and executed centrally.

Natural hedges and offsets, eg subsidiary dividends and intragroup debt service, to be planned in. Visibility and timeliness of reporting to be also a top level subsidiary priority and ultimately the responsibility of the finance director.

Parties to hedging decisions to be the group treasurer, finance director, commercial director – the latter in particular for situations potentially involving changes to the business model.

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Fx risk management to take into account the type of fx regime in which each subsidiary operates:

<b>FX Regimes</b>	<b>Transaction</b>	<b>Translation</b>	<b>Strategic</b>
<ul style="list-style-type: none"> <li>• 25% of sales</li> <li>• Flat growth</li> <li>• Freely traded markets</li> </ul>	<ul style="list-style-type: none"> <li>• 100% contracted with forwards</li> <li>• 6m review</li> </ul>	<ul style="list-style-type: none"> <li>• No hedge (subject to debt covenants)</li> <li>• 6m review</li> </ul>	
<ul style="list-style-type: none"> <li>• 30% of sales</li> <li>• Medium growth</li> <li>• Actively managed by Govt.</li> </ul>	<ul style="list-style-type: none"> <li>• 100% contracted with forwards &amp; options</li> <li>• 3m review</li> </ul>	<ul style="list-style-type: none"> <li>• No hedge (subject to debt covenants)</li> <li>• 3m review</li> </ul>	
<ul style="list-style-type: none"> <li>• 10% of sales</li> <li>• High growth</li> <li>• Pegged to USD</li> </ul>	<ul style="list-style-type: none"> <li>• Continuous review forward rates against out-turn – if consistently more expensive, no hedge</li> <li>• 3m review</li> </ul>	<ul style="list-style-type: none"> <li>• No hedge</li> <li>• If significant, continuous review and incorporate in product pricing if necessary</li> <li>• Or consider cross-currency IRS</li> </ul>	<ul style="list-style-type: none"> <li>• Keep business model under review eg if considering pricing change</li> </ul>
<ul style="list-style-type: none"> <li>• 15% of sales</li> <li>• Volatile</li> <li>• Central bank control fx hedging</li> </ul>	<ul style="list-style-type: none"> <li>• Hedge under CB rules</li> <li>• 3m review</li> </ul>	<ul style="list-style-type: none"> <li>• No hedge</li> <li>• 3m review</li> </ul>	<ul style="list-style-type: none"> <li>• 3m review of business model</li> </ul>

As this is a new policy in a fragmented group, the review milestones are close together.

It will take time for treasury, finance and commercial to scope what is happening and to understand the dynamics.

Particularly important is the communication links between treasury and the businesses so that they understand:

- (i) the importance of accurate sales forecasts
- (ii) the need to review the business model when there is no other way to manage fx risk
- (iii) the need to understand how the business may unwittingly create fx risk, eg:

- using surplus local currency cash to pay an unplanned dividend when the currency is not freely tradeable and moves the wrong way before it can be exchanged
- lagging a planned payment by using the cash available for it to fund a local unexpected shortfall.

**Question 7****[18.0 mins, 10 marks]**

**[Marking scheme: to pass, about ten credible points identifying and explaining the changes in what banks can now offer corporates].**

**Regulatory Background**

The new banking regulations which are being progressively introduced up to 2019 and beyond are intended to ensure that the banking services essential for the functioning of the economy will not be threatened by bank failure, possibly requiring recourse to the taxpayer.

To this end, all banks must have Recovery & Resolution Plans (R&RP) agreed with the Regulator. If a bank looks like getting into trouble, the Regulator triggers the R&RP. The Recovery (repair) Plan or the Resolution (break up) Plan kicks into action without disruption to essential banking services or recourse to the taxpayer.

Moving back a stage, the UK-specific Ring-fencing Regulation, in process of implementation, requires UK banks to ring-fence in a UK subsidiary basic retail and some corporate lending and deposit-taking, at arm's length from the other potentially more risky banking activities. For universal banks this means ring-fencing the basic commercial bank at arm's length from the investment bank.

Moving back further still, the regulations for managing bank capital, funding, liquidity and interest rate risk have been radically tightened:

- much, much more capital required of which the great majority must be equity
- much less dependence of wholesale (ie non-customer deposit) funding
- much less maturity transformation for term facilities
- much more prescription about the quality and amount of on-balance sheet assets held for liquidity purposes
- much tighter regulation of interest risk management

Banks, particularly those with legacy issues (loan impairment, conduct fines) are finding it difficult to discover a business model which their balance sheet will support while yielding an adequate return for shareholders.

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## Corporate Implications

The implications for corporates are:

- Need for a change in behaviour and in expectations about what banks can provide.
  - Banking capacity has shrunk due to capital losses and reduction in financial market activity.
  - Borrowing costs have increased and will increase more as Basel III capital and liquidity regulations are progressively implemented.
  - Availability and cost of non-funds based services, eg derivatives, guarantees, are also adversely affected because of the greatly increased regulatory focus on off-balance-sheet activities which involve collateral provision, now calculated under protracted stress conditions.
  - Banks are having to adjust product-market scope to fit with available capital and funding.
  - Geographic spread is adjusting similarly as international banks refocus scarce resources on the most attractive markets, often their own domestic market. Regulatory tightening of bank intra-group exposure limits adds to this trend.
  - In the UK Vickers ring-fencing is accelerating the above processes.
  - A lot of the regulatory change is designed to ensure that governments/taxpayers do not foot the bill for future bank failures. In short, government support for banks can no longer be assumed. CRAs are picking up on this and it may have a long term negative impact on bank ratings (and counterparty risk for corporates).
  - There have been winners and losers in banking over the last several years. Banks are now more differentiated. Choice of provider requires more attention to scope, capacity and sustainability than hitherto, which may mean more relationship banks rather than less in the medium term.
  - Pricing has become a much more complex process for banks as they seek to refine transfer pricing processes (always a minefield of conflicting objectives) to cope with the protracted and highly dynamic changes to capital, liquidity and risk management regulation and continuing very low interest rates.
  - In some sectors where banks have been major providers of debt there has been a headlong shift to capital markets and private placements.
  - Some individual insurance companies which have increased private placement activity are now providing drawdown periods, maturity tranches
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and interest hedging which would previously have been the domain of commercial banking syndicates.

Your company which is global has three core banks which are all universal. Those which are UK-based will be restructuring in preparation for ring-fencing. Those which have been heavily affected in balance sheet terms by the financial crisis at the least will be rationalising overseas activities and in some cases consolidating domestically by reducing overseas operations. It is a paradox that while larger corporates are becoming more global and seeking global economies by integrating the management of resources, global banks are contracting and by force of tighter local regulation in each country where they operate, must now treat their subsidiary in each country on a stand-alone basis as regards its financial structure, independent of the parent.

Briefly:

- Loans: more expensive, less availability
- Depos: no appetite for short-term depos, MMFs possibly non-feasible
- Derivatives: may go to exchange
- Ring-fence (if UK) may impact "relationship"
- Resolution of bank could impact deposit counterparty risk
- Off B/S bank facilities attracting more capital and liquidity cover by bank
- Bank stress test scenarios dictating capital and liquidity costs
- etc etc.

#### Question 8

[14.4 mins, 8 marks]

**[Marking scheme: to pass, four of the more important risks with credible mitigants].**

*This Question is about Bitcoin (BC) as one means of payment at "point of sale" (POS), in the same way that stores in tourist cities often offer a choice of currency – EUR, USD, GBP, JPY. Currently (2016) it is used sometimes in e-commerce.*

Risks and mitigation/questions to be answered are listed below:

- Overall exposure
    - limit on BC as % sales
    - limit on BC as % FX sales
  - Regulation
    - review regulations
    - check with existing payments processors
  - Money laundering
    - red-flag large purchases
    - checks on customer, limit to certain cards
    - checks on staff
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- Counterparty
  - who is the counterparty?
  - probability of failure?
- Convertibility
  - how is price established?
  - volatility?
- Settlement
  - what is settlement procedure?
  - settlement risk
  - liquidity

To enable use of Bitcoin at POS existing systems would be used ideally for accounting, control and monitoring.

Real-time, same-day settlement in conventional currency, if feasible, would mitigate most of the risks mentioned.

References:

- "Innovations in payment technologies and the emergence of digital currencies", Bank of England Quarterly Bulletin, 2014, Q3
  - "Peer Pressure", The Treasurer, April 2014, pp 40-41
  - "Cryptic Currencies: Cracking the Code", Treasury Today, February 2015, pp 12-15
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