Approaching Consolidation Questions - T Accounts, Columnar & CSOFP

Consolidated financial statements are a fundamental part of advanced financial reporting and typically are one area that many accounting students struggle with. The purpose of this series of articles is not to provide a comprehensive overview of the area of consolidated financial statements but rather to focus on how to approach consolidation questions and, in particular in this article, to discuss two of the most common approaches to consolidation questions, the columnar and T-account approaches, and to provide an example of how to prepare a consolidated statement of financial position (CSOFP) using both approaches.

Consolidation Approach – Key Tests

There are three main things to consider when deciding what approach is most suited to you;

1. Is it **efficient**? (Can you get it done in the time allocated?)
   - Speed Test
   - One pass mentality (i.e. do adjustments once and finish with them)
2. Is it **well structured?** (Can someone read your solution and follow your logic?)
   - Neatness
   - Cross referencing financial statements to workings
3. Can it **link all the relevant financial statements** (Can you track the impact on CSPLOCI & CSOCE as you go?)
   - Labelling system – will discuss in subsequent articles relating to CSPLOCI & CSOCE

While there are many variations of approaches to consolidation questions, many are typically hybrids of two main ones – T accounts and columnar – which will be the focus of this article.

T Accounts

The traditional method of preparing consolidated financial statements. T accounts are opened for all (or at least most of the major) line items and all journal entries are recorded systematically after each adjustment. This approach can be slow to set up but it is comprehensive in terms of capturing all relevant adjustments. It also provides good practice of consolidation related journal entries, a common issue with students and frequent exam topic at CAP2 & FAE.

Columnar

More popular method now for preparing consolidated financial statements. No T accounts used. Adjustment columns are used to account for the relevant adjustments in each line item in the CSOFP (and CSPLOCI) and then the relevant parent, subsidiary and adjustment columns are added across to get the group figure. Typically, a **separate working is completed for key line items** such as goodwill, retained earnings and NCI. The rest of the line items are completed by adding across the parent, subsidiary and adjustment columns in the CSOFP. This approach is fast to set up but there is a danger with students attempting to "learn off" formulae for various key line items (e.g. retained

earnings) without fully understanding what is going on. It can lead to students being weak on consolidation related journal entries.

Note – Consolidation in Practice
In practice, MS Excel will typically be used and there may be a separate adjustment column for each adjustment. This is not really feasible in an exam setting but the key point is that for the working world, knowledge of journal entries for the common consolidation adjustments is essential. This is especially important in the context of CAP2 & FAE where they are regularly examined.

In summary, the T account and columnar approaches really just differ in how you aggregate all the adjustments to prepare the consolidated financial statements. How a student actually makes the common consolidation adjustments should be similar regardless of what approach is used (e.g. there is only one way to adjust for a fair value adjustment – it can however be presented differently depending on which approach is used). Furthermore, as you will see from the following series of articles, the main differences in both approaches will be seen in the preparation of the CSOFP. For the preparation of the CSPLOCI and CSOCE the approaches are very similar with limited, if any, differences.

T Account vs. Columnar – Key Line Items Compared

The following section provides a comparison of the T account and columnar approaches across some of the key areas in any consolidation question (and typically where the most marks will be awarded);

- Goodwill
- Non-Controlling Interest (NCI)
- Retained Earnings
- Associate/JV
- Other Line Items

Goodwill

A goodwill calculation is pretty much a guaranteed element of any consolidation question. There are a number of key elements (or issues) to watch out for with any goodwill calculation;

- Determining retained earnings at the acquisition date (may be given or may need to calculate – NB mid-year acquisition)
- How is the NCI measured? Method 1 (Partial) or 2 (Full) under IFRS3?
- What consideration was paid and in what form? Has this been accounted for?
- Is there any fair value adjustment required at the acquisition date?

Columnar Approach

The columnar approach typically splits the goodwill calculation into three columns – parent, NCI and total (some students just use the total column with no split between parent and NCI). This will typically be one of the first workings completed by students in an exam question.

As can be seen below, the fair value of net assets of the subsidiary is calculated on a total basis first and the allocated to the parent and NCI according to their ownership %. If the NCI is valued using method 1 (i.e. at its share of the fair value of net assets) then it will have no goodwill attached to it. However, if the NCI is measured at its fair value under IFRS3 there will be some goodwill attributed to the NCI. The result of this calculation is then fed into the relevant adjustment column in the CSOFP.

Goodwill - Columnar		Parent	NCI	Total
		€'000	€'000	€'000
Investment/Fair Value		X	X	X
Net Assets at Acquisition				
Ord. Share Capital	X			
Retained Earnings	X			
Other Reserve Accounts	X			
Fair Value Adjustment	X			
Fair Value of NA at Acq	X	(X)	(X)	(X)
		X%	X%	100%
Goodwill/(GFBP)		X/(X)	X/(X)	X/(X)

T Account Approach

The T account approach can be a bit longer to set up but will likely save you time and reduce the likelihood of missing elements of the question in the longer run. With this approach students typically open some of the key T accounts (e.g. Goodwill*, Ordinary Share Capital, Retained Earnings, NCI, PPE**, and any other reserve account that may be relevant for the initial acquisition accounting under IFRS3) and populate the relevant balances that they will have from the SOFPs in the question (i.e. parent and sub).

* Some students prefer to open a Cost of Control T account and a goodwill T account – the former providing the balance for the latter but both are not required and can be merged into one.

** Required if there is a fair value adjustment on acquisition.

Students can show the relevant journal entries to remove the subsidiary's pre-acquisition reserves to the goodwill/NCI account also if they wish but often, given the level of practice students will have with goodwill calculations, they leave this step out as it should be obvious from the T accounts. Typically, you would show the relevant journal entries to account for any fair value adjustment for PPE and/or and fair value top up for the NCI if it is measured at fair value.

The basic premise of this approach is that you bring the relevant items (i.e. ordinary share capital, any pre-acquisition reserves) from their respective individual T accounts to either the cost of control/goodwill account (in relation to the parent's %) or the NCI account (in relation to the NCI's %).

Goodwill/Cost of Control

Dr		Cr	
Investment	X	Ord Share Cap	X
NCI Goodwill	X	Retained E.	X
		Other Res.	X
		FV Adj.	X
		Goodwill	**X**
	X		X

NCI

Dr		Cr	
		Ord. Share Cap.	X
		Ret E.	X
		Other Res.	X
		FV Adj.	X
		Goodwill	X
	X		X

Ordinary Share Capital

Dr		Cr	
CoC	X	Parent	X
NCI	X	Sub	X
	X		X

PPE

Dr		Cr	
Parent	X		
Sub	X		
FV Adj.	X		
	X		X

Retained Earnings

Dr		Cr	
CoC	X	Parent	X
NCI	X	Sub	X
	X		X

Other Reserve Accounts

Dr		Cr	
CoC	X	Parent	X
NCI	X	Sub	X
	X		X

Calculation of goodwill + value of NCI at acquisition

- Removal of Ordinary Share Capital & Pre-Acq Reserves of Sub to cost of control & NCI
- Bring investment in sub line item to goodwill/cost of control account (Investment T account not shown)
- DR Ord Share Cap, DR Ret E, DR Other Reserves, CR NCI, CR Goodwill/CoC, CR Investment in Subsidiary

Accounting for Fair Value adjustment on acquisition

- DR PPE, CR CoC/Goodwill, CR NCI

Recognising goodwill attributable to NCI (only if measured at Fair Value)

- DR Goodwill, CR NCI

Both approaches will provide you with the same overall answer – the columnar method will typically calculate the overall fair value of net assets of the Sub first and then allocate this based on the ownership split (parent & NCI). The T account method allocates each of the line items individually based on the ownership split. The benefit of the columnar approach is **speed**, in that once you have the approach practiced the goodwill calculation can be done relatively quickly. The benefit of the T account approach is that you make a **one sweep approach** to the adjustments (i.e. you make all adjustments in relevant line items once as you go) and there is no going back over the adjustments at the end to capture the impact on each line item from your goodwill working (e.g. share capital, share premium, PPE, goodwill etc.).

Non-Controlling Interest

When the parent does not acquire 100% of the ordinary share capital of the subsidiary a non-controlling interest (NCI) will arise in consolidated financial statements. This will be shown as a single line item in the CSOFP in the equity section.

The key elements for the NCI are as follows;

- Initial valuation on acquisition (share of all pre-acquisition reserves & goodwill, where relevant – this valuation will be determined already from your goodwill working)
- Post-acquisition earnings (can work out from financial statements given in question but may require adjustments based on notes to accounts – e.g. unrealised profit, subsequent depreciation of fair value adjustment etc.)
- Impairment of goodwill (where relevant – only if NCI measured at fair value)

Columnar Approach

The columnar method typically keeps the NCI calculation as a separate working (i.e. not as part of the three columns (parent, sub & adjustment) on the face of the CSOFP) due to the number of adjustments usually required. The starting point for the NCI will be the value of the NCI at acquisition (which should already be known from your goodwill working).

Added (or subtracted) to this will be a variety of consolidation adjustments depending on the question (e.g. unrealised profit, FV adjustment for depreciation, impairment of goodwill, post-acquisition earnings). These are typically done as separate workings in an appendix as you work down through the notes provided in the question and goods students will cross reference these workings when incorporating them into the larger NCI working (e.g. W1, W2 ,W3).

You will need to have some "system" to remember which adjustments affect each of the key line items (e.g. NCI, retained earnings etc.) – typically students use some form of labels as they go through each adjustment working to remind them where it impacts.

Non Controlling Interest	**€'000**	**€'000**	
Measurement at Acquisition		X	← **From Goodwill Calc**
Goodwill Impairment (if relevant) (W2)		(X)	
Sub Post-Acq Profits			
Retained Earnings at Reporting Date	X		← **From Sub's SOFP**
Retained Earnings at Acquisition	(X)		← **From Goodwill Calc**
	X		
Unrealised Profit (W3)	(X)		
Fair value adjustment - depreciation (W4)	(X)		
[Other adjustments to Sub's Profits] (W5)	X/(X)		
	X		
NCI's Share [x%]		X	
Non Controlling Interest		**X**	

Note: It is also acceptable to calculate the NCI's share of post-acqusition earnings seperately and then make the relevant consolidation adjustments (e.g. unrealised profit) individually in the NCI working by just multiplying them by the NCI ownership %.

T Account Approach

The T account approach follows on from your initial goodwill calculation (you will have the NCI T account already set up and the initial value of the NCI at acquisition already accounted for). You then enter the relevant adjustments for any events post-acquisition (e.g. consolidation adjustments, impairment of goodwill, post-acquisition earnings). These are typically shown as journal entries in an appendix and then cross referenced into the T accounts as J1, J2, J3 etc.

NCI

Impairment G'will* (J2)	X	Ord. Share Cap.	X
URP Adj (J3)	X	Ret E.	X
Deprec Adj (J4)	X	Other Res.	X
		FV Adj.	X
		Goodwill	X
		Post Acq Reserves (J5)	X
SOFP	**X**		
	X		X

Balance brought to the CSOFP

Already set up from goodwill working previously

These common adjustments are typically made as journal entries in an appendix and cross referenced in (e.g. J1, J2 etc). When making the journal entry you should allocated the relevant portion of the adjustment to the NCI & Parent based on ownership split.

E.g. for Subsequent depreciation adjustment in Sub's accounts
CR PPE X (100%)
DR Ret E X(80%, say)
DR NCI X (20%)

Calculated from Subsidiary's closing retained earnings balance in SOFP given in question and retained earnings at date of acquisition calculated in goodwill working. Use NCI ownership %.

Retained Earnings

Group retained earnings will be one of the most detailed workings in any consolidated financial statements question. While on the face of it, it is simply a matter of adding the parent's retained earnings to the post acquisition earnings of each of its subsidiaries, there can be a number of different adjustments and complications that are required consideration when preparing the CSOFP.

Only the **post-acquisition retained earnings** from the subsidiary should be shown in the consolidated retained earnings line item – any pre-acquisition retained earnings (i.e. retained earnings at the date of acquisition) should be removed and brought to either the goodwill calculation or attributed towards the initial valuation of the NCI at acquisition, as shown previously.

The table below shows how the subsidiary's retained earnings at the date of consolidation are allocated.

	Pre-acquisition profits	**Post-acquisition profits**
Group shareholding (x %)	Goodwill Calculation	Consolidated retained earnings
NCI shareholding (100-x%)	Non-Controlling Interest	Non-Controlling Interest

While post-acquisition profits will be relatively easy to determine at face value from the subsidiary's financial statements provided in the question, there will likely be a number of adjustments required based on the notes to the question (e.g. unrealised profit, FV adjustment for depreciation, impairment of goodwill). These will have to be tracked and adjustments made to the consolidated retained earnings account (and the NCI where appropriate).

Columnar Approach

The columnar approach for retained earnings is similar to the NCI. It is usually done as a separate working (i.e. not as part of the three columns on the face of the SOFP) due to the number of adjustments required. The starting point for the retained earnings line item will be the parent's retained earnings at the reporting date (taken from the SOFP in the question).

Added (or subtracted) to this will be a variety of consolidation adjustments specific to the parent depending on the question (e.g. profits from associate/JV, goodwill impairment, any gain from bargain purchase). These are typically done as separate workings in an appendix as you work down through the notes provided in the question and goods students will cross reference these workings when incorporating them into the bigger retained earnings working (e.g. W1, W2 ,W3). The workings for the post-acquisition profits of the subsidiary are the exact same as those for the NCI, the only difference being that the final result is multiplied by the parent's shareholding %. Thus you will have then allocated all the post-acquisition profits of the subsidiary (after the relevant adjustments) to either the parent (via group retained earnings) or to the NCI.

Consolidated Retained Earnings	€'000	€'000
Parent's Retained Earnings		X
Post Acq Profit from Assoc/JV (W6)		X
Goodwill Impairment (W2)		(X)
Gain From Baragin Purchase (W1)		X
Unrealised Profit (P Seller) (W2)		(X)
[Other Parent only adjustments]		X/(X)
Sub Post-Acq Profits		
Retained Earnings at Reporting Date	X	
Retained Earnings at Acquisition	(X)	
	X	
Unrealised Profit (S Seller) (W3)	(X)	
Fair value adjustment - depreciation (W4)	(X)	
[Other adjustments to Sub's Profits] (W5)	X/(X)	
	X	
Group's Share [x%]		X
Consolidated Retained Earnings @ Y/E		**X**

<u>T Account Approach</u>

The retained earnings T account will have already been set up from the goodwill calculation initially. It will include the parent and subsidiary retained earnings balances from their respective SOFPs and also entries to remove any pre-acquisition retained earnings to either the cost of control account or NCI account.

Unlike the columnar approach, where you add on the group's share of the sub's post-acquisition profits, in the T account approach you subtract the NCI's share and put it into the NCI T account. This is because you have already brought in 100% of the sub's post acquisition reserves into the retained earnings account by bringing in the balance of the retained earnings account from the sub's SOFP. You have removed the pre-acquisition reserves, leaving you with 100% of the post-acquisition reserves in the T account. You then must remove the NCI's share of these post acquisition reserves and credit it to the NCI account. You can see the below J5 debit entry links with the J5 credit entry made in the NCI T account.

	Dr	Cr
DR Retained Earnings	X	
CR NCI		X

Retained Earnings

CoC - Pre Acq	X	Parent	X
NCI - Pre Acq	X	Sub	X
NCI - Post Acq (J5)	X	Associate Post Acq (J6)	X
URP (J2)	X	GFBP (J1)	X
Add. Deprec. (J3)	X		
Goodwill Impair. Sub (J4)	X		
Unreal. Profit P->Ass/JV (J8)	X		
Goodwill Impair. Ass./JV (J7)	X		
SOFP	**X**		
	X		X

Balance brought to the CSOFP

Already set up from goodwill working previously – this adjustment leaves a net position of the Parent's retained earnings plus 100% of the subsidiary's post-acquisition retained earnings.

Adjustment to allocate NCI its share of subsidiary's post-acquisition retained earnings – link to corresponding credit entry in NCI T account

These common adjustments are typically made as journal entries in an appendix and cross referenced in (e.g. J1, J2 etc). When making the journal entry you should allocated the relevant portion of the adjustment to the NCI & Parent based on ownership split, where relevant (e.g. goodwill impairment may only impact parent if NCI not measured at fair value). Similar adjustments made in NCI account, just using NCI ownership % instead (Link J2,3,4 in NCI T account)

E.g. for Subsequent depreciation adjustment in Sub's accounts

CR PPE		X (100%)
DR Ret E	X(80%, say)	
DR NCI	X (20%)	

Parent specific adjustments – no impact on NCI. Link associate entries (J6-J8) to corresponding entries in associate T account below.

Associate/Joint Venture (JV)

The associate and JV, although different investment types, are both accounted for using the same method in consolidated financial statements – the equity method as per IAS28. This is not full consolidation and only one line item for each will appear in the CSPLOCI & CSOFP.

The key elements for the associate/JV are as follows;

- Initial valuation on acquisition – you need to check if there is goodwill or a gain from bargain purchase on acquisition. If there is goodwill (also known as a premium), it is not shown separately (unlike a subsidiary), and no further adjustments are required. If there is a gain from bargain purchase, you must make the relevant adjustment to bring the investment in associate line item up to its true value.

DR Assoc./JV	X	
CR Retained Earnings		X

- Post-acquisition earnings (Can work out from financial statements given in question – note any adjustments required below)
- Consolidation adjustments – e.g. unrealised profit (NB need to multiply by group's share unlike a subsidiary), dividends (DR Bank, CR Assoc./JV), intercompany balances not removed; and
- Impairment of goodwill (where relevant).

Columnar Approach

The columnar approach for associate/JV has two alternative methods. Method 1 begins with the cost of the investment made, adjusts for any gain from bargain purchase and then any post-acquisition earnings including relevant adjustments. Method 2 starts with the SOFP position for the associate/JV (essentially cutting out the need to adjust for any gain from bargain purchase or post-acquisition retained earnings) and then makes the required adjustments for any goodwill or consolidation adjustments required.

Associate/Joint Venture	**Method 1**	
	€'000	**€'000**
Cost		X
Gain from bargain purchase		X
Less Impairment		(X)
Post-Acq Profits		
Retained Earnings at Reporting Date	X	
Retained Earnings at Acquisition	(X)	
Post Acq Retained Earnings	X	
X Group's Share [x%]		X
Unrealised Profit Adj [x%]		(X)
Associate/JV SOFP Balance		**X**

	Method 2	
	€'000	**€'000**
Ordinary Share Capital	X	
Share Premium	X	
Retained Earnings	X	
Net Assets	X	
X Group's Share [x%]		X
Premium on acqusition not written off		X
Unrealised Profit Adj [x%]		(X)
Associate/JV SOFP Balance		**X**

T Account Approach

The associate/JV T account is naturally closely aligned to the other T accounts already completed (and these will most likely be completed simultaneously as adjustments are made rather than in a sequence such as this article). You can link J6, J7 & J8 below to corresponding entries in the retained earnings T account.

Associate/JV			
Investment/Cost	X	G'will Impairment (J7)	X
GFBP	X	Unreal. Profit P->Ass/JV (J8)	X
Post Acq Earnings (J6)	X	Dividend (J9)	X
		SOFP	**X**
	X		X

Balance brought to the CSOFP

Other Line Items

These include;

- Trade Receivables/ Trade Payables
- Inventories
- Bank and Cash
- PPE
- Taxation
- etc.

Columnar

All other line items are typically accounted for by adding across the parent and subsidiary balances along with any adjustments noted in the adjustment column in the CSOFP as outlined below. Note that you may need to deal with each of the intra group adjustments separately in smaller workings to determine the impact on each line item and then put in the relevant amounts in the adjustment column before adding across.

Statement of Financial Position as at 31 December 2016

	Parent	Sub	Adj		Group
	€'000	€'000	€'000	€'000	€'000
Current Assets					
Inventories	X	X	X		X
Trade Receivables	X	X	X		X
Bank	X	X	(X)	X	X
	X	X			X

T Account

It is entirely student preference whether you wish to prepare each of these T accounts or, alternatively, to just make the adjustments on the face of the CSOFP (as shown below) as there will typically be only a small number of adjustments in each line item and it can save valuable time. The example solution provided below will prepare T accounts for all relevant line items for tutorial purposes but students should hopefully begin to see that there is no need for all such accounts, especially when there is only 1 or even no adjustments required for the line item (other than adding the relevant parent and subsidiary balances together from their respective SOFPs provided in the question).

The benefit of the T account approach is the requirement to make two adjustments every time you deal with an issue/adjustment so even if you do decide not to prepare a T account for one line item you should get into the discipline of making a note of the adjustment required to the line item on

the CSOFP so you do not forget later in the question (or perhaps have a template CSOFP set up that you can note it as you go).

Statement of Financial Position as at 31 December 2013

Assets		
NCA		
PPE	X	
Goodwill	X	
Investment in JV	X	X
CA		
Inventories (P + S + 100 (J2))	X	
Receivables (P + S - 400 (J3))	X	

Summary/Conclusion

The purpose of this article was to provide students with an overview of the two main approaches to preparing consolidated financial statements using the key line items for illustration. The focus here was on the CSOFP. It is advisable for students to choose one particular method for preparing consolidated financial statements and to practice this under exam conditions to ensure you are comfortable with it.

However, it is also important for students to be able to interpret other ways of approaching consolidation questions particularly when many solutions to questions may not be presented using the method you are used to. Students should avoid “learning off” rules/approaches to consolidation questions without understanding the core principles behind the preparation of consolidated financial statements and the accounting for the core types of investments (i.e. subsidiary, associate, joint arrangement & simple investment).

While the columnar method has gained in popularity in recent years, no single approach has absolute advantage and there are pros and cons to both methods, which are summarised below. Regardless of the approach taken, students must be comfortable in preparing journal entries as part of any consolidation question as this is an increasingly popular area in financial reporting exams. Furthermore, students should ensure that whatever method they decide to use for consolidation financial statements meets the below three criteria;

1. Is it efficient? (Can you get it done in the time allocated?)
2. Is it well structured? (Can someone read you solution from cold and follow your logic?)
3. Can it link all the relevant financial statements (Can you track the impact on SPLOCI & SOCE as you go?)

T Account	Columnar
Pros • Makes you focus on journal entries – key area of focus on exams + consolidation in practice • Limited ability to forget adjustments given double entry nature	**Pros** • Quicker set up time to get going • Less time consuming that setting up several T accounts
Cons • Slower set up time • Can be difficult to keep neat under exam pressure • Can take more time to get used to the approach and various required journal entries	**Cons** • Tendency to “learn off” formula for key line items and not understand core principles • Can lead to limited knowledge of journal entries for consolidation issues • Can be easier to forget corresponding entries (e.g. FV adjustment in goodwill calculation but not put into PPE)

Example Question & Solution – Both Approaches

The accompanying example question (Sept 2016 CAP2 FR IA) includes an overview of the T account and columnar approaches. This only focuses on the CSOFP and with limited consolidation adjustments which allows students to focus on the basic steps in each of the two approaches and provides a basis to compare each. Included are suggested solutions using both approaches as well as some guidance regarding the steps to follow when preparing the CSOFP using either approach. Further screencasts are also available using both approaches on www.doubleexit.ie (See CAP2 FR IA section).