Internet Appendix for "Measuring Intangible Capital with Market Prices" (Ewens, Peters and Wang (2020))

IA1 Acquisition accounting

The U.S. General Accepted Accounting Principles (GAAP) treatment for business acquisition has evolved significantly over time. This section constitutes a brief overview of the guidelines and principles provided by the FASB, and discusses their differential impact to the financial statements of the acquiring firm.

From 1970 until 2001, Accounting Principles Board (APB) Opinion No. 16 stated that "the purchase method and the pooling of interests method are both acceptable in accounting for business combinations, although not as alternatives for the same business combination." If the acquiring firm was in accordance with a list of specified conditions, it would account for the transaction as a pooling acquisition, otherwise it would use the purchase method.

In the purchase method, the acquirer restates all of the target's net assets to their fair value and records the difference between the fair value of the acquirer's consideration and the fair value of the target's net assets as goodwill. The acquirer's goodwill asset would then be subjected to annual impairment tests if the carrying value of goodwill related to the reporting unit is suspected to be less than its fair value.[65] In the pooling method, the acquirer must finance the purchase entirely with stock. The assets and liabilities of the target firm are combined with the acquirer at book value, essentially implying that fair market values of the acquirer's consideration and the target's net assets are ignored for accounting purposes. The target firm's retained earnings are aggregated together with the acquirer's retained earnings. Equity shares issued by the acquirer for the purchase are recorded based upon book value of the target's net assets. Because of this, no excess of acquisition cost over the target's book value of net assets exists, and thus no new goodwill is recorded to the acquirer. Studies that have examined the firm's use of purchase versus pooling methods have generally found that the larger the difference between the book value of the target's asset and the price paid by the acquirer, the more likely that the acquirer will opt for the pooling method (Robinson and Shane (1990); Ayers, Lefanowicz, and Robinson (2000)). This is because the purchase method would result in the target's net assets being marked to market and any goodwill added to the acquirer's balance sheet being depreciated and amortized over time, resulting in an additional expense against the firm's reported profits in the subsequent years. As discussed below, any acquisitions using the pooling method cannot be used in our analysis.

On December 15, 2001 FASB enacted FAS 141[66], which eliminated the use of pooling-of-

[65] Prior to 2001, goodwill was amortized using a straight-line depreciation method over a period not to exceed forty years.

[66] `https://www.fasb.org/summary/stsum141.shtml`

interest accounting in acquisitions.[67] At the same time, FAS 141 eliminated the amortization of purchased goodwill. Instead, goodwill would be considered an indefinite life asset, and amounts on the acquirer's books would be subject to "impairment" tests, which would be conducted when expectations for the reporting unit have been significantly reduced. At this time, the goodwill would be revalued and compared with its carrying book value, with any differences being expensed as a write-off for the acquiring firm.[68]

On December 15, 2007, FASB superseded FAS 141 with FAS 141R (now referred to as ASC 805 as of September 15, 2009).[69] ASC 805 stands as the current method of accounting for acquisitions. This method, known as the "acquisition method" is similar to the purchase method for acquisitions, with a few notable adjustments. (1) In FAS 141, there was no forced recognition of contingent assets or liabilities being acquired. Under FAS 141R, guidance for the recognition of contingent assets and liabilities depends on whether the contingencies are contractual, such as a warranty agreement, or non-contractual, such as the outcome of a lawsuit. Contractual contingencies are accounted for at fair value, while non-contractual contingencies are accounted for if the probability of realization of the contingent asset is greater than fifty percent. (2) In FAS 141, transaction costs such as legal fees, banking fees or other direct acquisition costs were included in the purchase price allocation, where as in FAS 141R they are recorded as expenses. (3) In FAS 141, in-process research and development (IPR&D) could be expensed immediately upon completion of the acquisition if the acquired IPR&D has no alternate use. In FAS 141R, IPR&D exists as an indefinite-lived intangible asset until the completion or abandonment of the associated R&D project.

[67]The FASB justified the elimination of the pooling method because "the purchase method, as modified by the board during deliberations, reflects the underlying economics of business combinations by requiring that the current values of the assets and liabilities exchanged be reported to investors. Without the information that the purchase method provides, investors are left in the dark as to the real cost of one company buying another and, as a result, are unable to track future returns on the investment." See `http://ww2.cfo.com/2001/01/fasb-reaffirms-plan-to-eliminate-pooling-updated-2/`

[68]For example, on April 25, 2014 Microsoft acquired the mobile hardware division of Nokia for $7.9 billion. In 2015, they announced a goodwill write-off of $7.5 billion related to the Nokia acquisition. In note 10 of the 10-K, they cite the following reason for the impairment: "Upon completion of the annual testing as of May 1, 2015, Phone Hardware goodwill was determined to be impaired. In the second half of fiscal year 2015, Phone Hardware did not meet its sales volume and revenue goals, and the mix of units sold had lower margins than planned. These results, along with changes in the competitive marketplace and an evaluation of business priorities, led to a shift in strategic direction and reduced future revenue and profitability expectations for the business. As a result of these changes in strategy and expectations, we have forecasted reductions in unit volume growth rates and lower future cash flows used to estimate the fair value of the Phone Hardware reporting unit, which resulted in the determination that an impairment adjustment was required." `https://www.sec.gov/Archives/edgar/data/789019/000119312515272806/d918813d10k.htm`

[69]`https://www.fasb.org/pdf/fas141r.pdf`

IA2 Figures and tables

Figure IA1: Example of Purchase Accounting

Acquiring firm (A) acquires target firm (T) in an acquisition which closes on March 31, 2018. Book value of T's net assets ex-acquisition is 55. In the due diligence process, T's net assets are marked to market to a value of 95 following ASC 805. Identifiable intangible assets of 35 are revealed on A's balance sheet post-acquisition date. A agrees to purchase T by issuing stock with a fair market value of 150. Goodwill of 55 is recorded to A's balance sheet to represent the additional value paid by the acquirer over and above the fair value of all of T's identifiable net assets.

Target (T's) Balance Sheet as of December 31, 2017 (Pre-Acquisition)

Assets		Liabilities & Equity	
Cash	10	Current Liabilities	15
Receivables	10	Long-Term Debt	30
Inventories	20	Capital Stock	10
PP&E, net	60	Retained Earnings	45
T's Total Assets	100	T's Total Liabilities & Equity	100

Acquiror (A's) Balance Sheet as of December 31, 2017 (Pre-Acquisition)

Assets		Liabilities & Equity	
Cash	80	Current Liabilities	120
Receivables	120	Long-Term Debt	230
Inventories	100	Capital Stock	500
PP&E, net	700	Retained Earnings	150
A's Total Assets	1000	A's Total Liabilities & Equity	1000

On March 30, 2018, Acquiror Purchases Target for Fair Value Consideration in exchange for 10 shares of common stock

Target's Fair Market Value of Net Assets as of March 31, 2018 (Acquisition Date)

Cash	10
Receivables	10
Inventories	15
PP&E Net	70
Tangible Assets	105
IPR&D	20
Patents	10
Trademarks	5
Intangible Assets	35
Total Assets	140
Current Liabilities	15
Long-Term Debt	30
Total Liabilities	45
FV of Net Assets	95

Note that the purchase method results in identifiable intangible assets (IIA) of 35, and goodwill (GW) of 55.

Acquiror's entry to record transaction using purchase method on March 31, 2018

Cash	10	
Receivables	10	
Inventories	15	
PP&E Net	70	
IPR&D	20	
Patents	10	
Trademarks	5	
Goodwill	55	
Current Liabilities		15
Long-Term Debt		30
Capital Stock		150

Value assigned to goodwill is the difference between the fair value consideration of the acquiring firm and the target's fair value of net assets.

Goodwill = 150 - 95 = 55

Acquiror (A's) Balance Sheet as of April 1, 2018 (Post-Acquisition)

Assets		Liabilities & Equity	
Cash	90	Current Liabilities	135
Receivables	130	Long-Term Debt	260
Inventories	115	Capital Stock	650
PP&E, net	770	Retained Earnings	150
IPR&D	*20*		
Patents	*10*		
Trademarks	*5*		
Goodwill	*55*		
A's Total Assets	1195	A's Total Liabilities & Equity	1195

Figure IA2: Example of Pooling Accounting

Acquiring firm (A) acquires target firm (T) in an acquisition which closes on March 31, 2018. Book value of T's net assets ex-acquisition is 55. A agrees to purchase T by issuing shares of common stock. Contrary to the purchase method, fair market values of both A's net assets and T's common stock offering are ignored for accounting purposes. No goodwill or intangible assets are identified and brought to A's balance sheet. A's post-acquisition balance sheet represents only the net assets of T at book value.

Target (T's) Balance Sheet as of December 31, 2017 (Pre-Acquisition)

Assets		Liabilities & Equity	
Cash	10	Current Liabilities	15
Receivables	10	Long-Term Debt	30
Inventories	20	T's Capital Stock	10
PP&E, net	60	Retained Earnings	45
T's Total Assets	100	T's Total Liabilities & Equity	100

Acquiror (A's) Balance Sheet as of December 31, 2017 (Pre-Acquisition)

Assets		Liabilities & Equity	
Cash	80	Current Liabilities	120
Receivables	120	Long-Term Debt	230
Inventories	100	Capital Stock	500
PP&E, net	700	Retained Earnings	150
A's Total Assets	1000	A's Total Liabilities & Equity	1000

On March 30, 2018, Acquiror Purchases Target's Net Assets in exchange for 10 shares of A's common stock

Target's Book Value of Net Assets as of March 31, 2018 (Acquisition Date)

Cash	10
Receivables	10
Inventories	20
PP&E Net	60
T's Total Assets	100
Current Liabilities	15
Long-Term Debt	30
T's Total Liabilities	45
Net Assets	55

Note that in the pooling method, no mark-to-market occurs at the time of acquisition.

No goodwill is recognized, and intangible assets are not identified in the pooling method.

Acquiror's Entry to record transaction using pooling method on March 31, 2018

	Debit	Credit
Cash	10	
Receivables	10	
Inventories	20	
PP&E Net	60	
Current Liabilities		15
Long-Term Debt		30
A's Capital Stock		10
Retained Earnings		45

Acquiror (A's) Balance Sheet as of April 1, 2018 (Post Acquisition)

Assets		Liabilities & Equity	
Cash	90	Current Liabilities	135
Receivables	130	Long-Term Debt	260
Inventories	120	Capital Stock	510
PP&E, net	760	Retained Earnings	195
A's Total Assets	1100	A's Total Liabilities & Equity	1100

Note that in the pooling method, the balance sheet of acquiror and target are simply combined at book values.

Figure IA3: Example of goodwill accounting and negative goodwill

A credits-and-debits analysis of goodwill and negative goodwill.

Standard Case: **Goodwill** contains synergies, mark-to-market of assets is too conservative, or overpayment.

Fair Value of Assets of Acquirer (+A)	100		
Fair Value of Liabilities of Acquirer (-L)		50	
Cash (-A)		130	
*Goodwill (+A)	80		← (Goodwill to balance)

*Goodwill asset impaired over subsequent years, until is depleted.

Amortization of Goodwill (-E)	XX	
Goodwill (-A)		XX

Rare Case: Negative goodwill. May arise due to bargain purchase of target (e.g., distressed fire-sale), too conservative in mark-to-market of liabilities (or off-balance sheet liabilities exist),

Fair Value of Assets of Acquirer (+A)	100		
Fair Value of Liabilities of Acquirer (-L)		50	
Cash (-A)		30	
**Neg Goodwill-plug (-A)		20	← (Neg goodwill to balance)

**Immediate write-off of negative goodwill as extraordinary gain.

**Neg Goodwill-plug (-A)	20		
Extraordinary Gain		20	← (Recorded to I/S as one-time gain)

Figure IA4: Percentage of acquisition deal size for intangible assets: post-goodwill adjustment

The figure reports the average percentage of an acquisition deal size (i.e., enterprise value of the deal) attributed to goodwill after synergy or over-payment adjustment and its sum with IIA. The adjustment detailed in Section 3.2 uses the market reaction to the acquisition announcement for both the target and acquirer. The sample is the subset of acquisitions (see Section 3) associated with deals that have non-zero goodwill or intangible assets acquired.

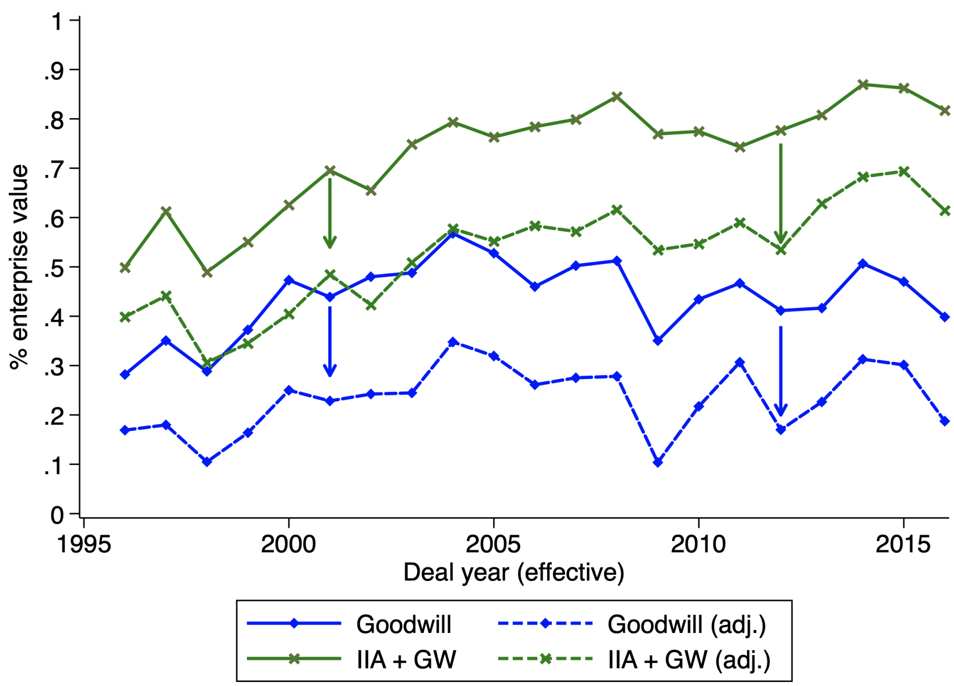

Figure IA5: Estimated year fixed effects and S&P 500 index

The figure reports the exponentiated year fixed effects ρ_t from the non-linear least squares estimation of equation (11):

$$\log(1 + P^I_{it}) = \log(\rho_t) + \log(I_{it} + \sum_{k=1}^{10}(1-\delta_G)^k \text{R\&D}_{i,t-k} + \sum_{k=1}^{10}(1-0.2)^k \gamma \text{SG\&A}_{i,t-k} + 1)$$

along with de-meaned, de-trended levels of the S&P 500 index at the end of the 2nd quarter of each year (dashed line). The year fixed effects are estimated in logs and constrained such that they average zero over all years.

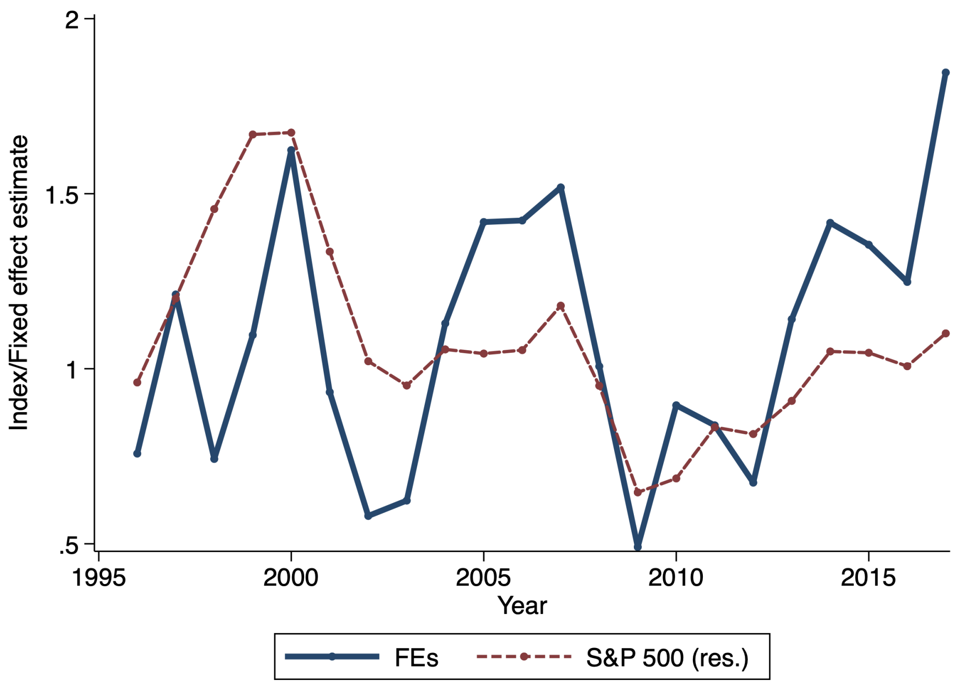

Table IA1: Eisfeldt and Papanikolau (2013), Table IA.I: Using the Ewens, Peters and Wang (2020) organizational stocks

The table repeats the analysis of Table IA.I in Eisfeldt and Papanikolaou (2013)'s Internet Appendix. The table reports the statistics of various firm observables in an unconditional annual sort using our new measure of organizational stocks.

Ewens, Peters and Wang

	Lo	2	3	4	Hi
	mean	mean	mean	mean	mean
Organization capital to book assets	0.04	0.09	0.18	0.31	0.81
Market capitalization (log)	6.48	6.60	6.36	5.85	5.10
Tobin's Q	1.13	1.32	1.36	1.34	1.66
Tobin's Q (scaled by PPE)	4.72	8.10	8.83	7.67	7.62
Total Q (Ewens, Peters and Wang (2018)	3.05	2.39	2.27	1.67	1.08
Total Q (Peters and Taylor (2017)	2.96	2.30	2.14	1.62	1.11
Sales to book assets (%)	68.56	84.76	104.96	122.20	144.70
Earnings to book assets (%)	7.22	7.80	7.94	6.35	-0.49
Advertising expenditures to book assets	1.09	1.60	2.52	3.68	6.37
Investment to capital (organization, %)	192.75	149.35	132.14	114.02	85.50
Investment to capital (physical, %)	17.83	15.79	15.32	14.66	14.46
Physical capital to book assets	64.80	61.33	50.47	41.14	42.62
Debt to book assets	33.38	29.18	25.21	20.83	16.54
Capital to labor (log)	4.83	4.58	4.21	3.96	3.74
Firm Solow Residual	-37.31	-9.16	8.78	19.60	14.09

	Lo	2	3	4	Hi
	mean	mean	mean	mean	mean
Executive compensation to book assets (%)	0.17	0.28	0.37	0.47	0.65
CEO turnover	0.18	0.16	0.18	0.18	0.20

Table IA2: OLS Results from an Investment-q Relation: By industry

Results are from OLS panel regressions of investment on lagged Tobin's q and firm and year fixed effects. A unit of observation is a firm-year for public firms from 1996–2016. We follow the Peters and Taylor (2017) method to construct both a new total capital that incorporates intangibles and a modified investment rate for $SG\&A$. Each column uses a different investment measure noted in the top rows

$$I_{it} = \beta Q_{it} + \mu_i + \eta_t + \varepsilon_{it}$$

"Total Q (PT)" is the Q_{it} from Peters and Taylor (2017) that uses the BEA-HH depreciation rates. The row "Total Q (EPW)" presents an alternative total Q that uses the depreciation and investment fractions from Table 3 to calculate total intangible stock. Because our main parameters in Table 3 are estimated by industry, each panel here is an industry sub-sample. The "Within-R2" are the within-firm and -year R^2. Standard errors clustered at the firm-year reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	R&D		SG&A		CAPX		CAPX+R&D+SG&A	
	Consumer							
Total Q (PT)	0.0016***		0.0075***		0.0079***		0.017***	
	(0.00034)		(0.00078)		(0.00093)		(0.0014)	
Total Q (EPW)		0.0018***		0.0071***		0.0083***		0.017***
		(0.00035)		(0.00071)		(0.00088)		(0.0012)
Observations	29435	29435	29442	29442	29462	29462	29435	29435
R^2	0.57	0.58	0.64	0.63	0.38	0.37	0.50	0.49
Within-R^2	0.047	0.048	0.13	0.16	0.077	0.084	0.16	0.18
	Manufacturing							
Total Q (PT)	0.0026***		0.0057***		0.0059***		0.014***	
	(0.00055)		(0.00077)		(0.0011)		(0.0018)	
Total Q (EPW)		0.0029***		0.0052***		0.0059***		0.014***
		(0.00057)		(0.00070)		(0.0010)		(0.0016)
Observations	18467	18467	18469	18469	18476	18476	18467	18467
R^2	0.56	0.62	0.59	0.57	0.30	0.29	0.43	0.44
Within-R^2	0.057	0.058	0.11	0.11	0.050	0.053	0.13	0.13
	High Tech							
Total Q (PT)	0.0046***		0.0060***		0.0071***		0.018***	
	(0.00035)		(0.00037)		(0.00052)		(0.0010)	
Total Q (EPW)		0.0050***		0.0069***		0.0071***		0.019***
		(0.00039)		(0.00044)		(0.00051)		(0.0011)
Observations	28783	28783	28784	28784	28795	28795	28783	28783
R^2	0.61	0.62	0.53	0.51	0.42	0.42	0.56	0.55
Within-R^2	0.12	0.13	0.17	0.15	0.17	0.16	0.29	0.27
	Healthcare							
Total Q (PT)	0.0060***		0.0060***		0.0048***		0.017***	
	(0.00070)		(0.00049)		(0.00070)		(0.0014)	
Total Q (EPW)		0.0072***		0.0057***		0.0042***		0.017***
		(0.00074)		(0.00069)		(0.00066)		(0.0015)
Observations	13519	13519	13519	13519	13524	13524	13519	13519
R^2	0.54	0.61	0.56	0.48	0.28	0.26	0.47	0.44
Within-R^2	0.066	0.077	0.14	0.078	0.077	0.068	0.18	0.16
Year / Firm FE	Y	Y	Y	Y	Y	Y	Y	Y

IA3 Real-world purchase price allocation examples

Matrix Pharmaceutical, February 20, 2002

Note 4 – Acquisition of Matrix Pharmaceutical, Inc.

On February 20, 2002, Chiron acquired Matrix Pharmaceutical, Inc. a company that was developing tezacitabine, a drug to treat cancer. As of March 31, 2002, Chiron acquired substantially all of the outstanding shares of common stock of Matrix Pharmaceutical at $2.21 per share, which, including estimated acquisition costs, resulted in a total preliminary purchase price of approximately $67.1 million. Matrix Pharmaceutical is part of Chiron's biopharmaceuticals segment. Tezacitabine expanded Chiron's portfolio of cancer therapeutics.

Chiron accounted for the acquisition as an asset purchase and included Matrix Pharmaceutical's operating results, including the seven business days in February 2002, in its consolidated operating results beginning on March 1, 2002. The components and allocation of the preliminary purchase price, based on their fair values, consisted of the following (in thousands):

Consideration and acquisition costs:		
Cash paid for common stock	$	49,986
Cash paid for options on common stock		1,971
Common stock tendered, not yet paid		8,751
Options on common stock, not yet paid		260
Acquisition costs paid as of March 31, 2002		3,323
Acquisition costs not yet paid as of March 31, 2002		2,796
Total purchase price	$	67,087
Allocation of preliminary purchase price:		
Cash and cash equivalents	$	17,337
Assets held for sale		2,300
Deferred tax asset		10,000
Other assets		1,469
Write-off of purchased in-process technologies		54,781
Accounts payable		(2,898)
Accrued liabilities		(15,902)
Total purchase price	$	67,087

Electronic Data Services, August 26, 2008

On August 26, 2008, HP completed its acquisition of EDS, a leading global technology services company, delivering a broad portfolio of information technology, applications and business process outsourcing services to clients in the manufacturing, financial services, healthcare, communications, energy, transportation, and consumer and retail industries and to governments around the world. The acquisition of EDS will strengthen HP's service offerings for information technology outsourcing, including data center services, workplace services, networking services and managed security; business process outsourcing, including health claims, financial processing, CRM and HR outsourcing; and applications, including development, modernization and management.

The total preliminary estimated purchase price for EDS was approximately \$13.0 billion and was comprised of:

Acquisition of approximately 507 million shares of outstanding common stock of EDS at \$25 per share in cash	\$12,670
Estimated fair value of outstanding stock options and restricted stock units assumed	328
Estimated direct transaction costs	34
Total preliminary estimated purchase price	\$13,032

In connection with the acquisition, HP assumed options to purchase approximately 8 million shares of HP's common stock at a weighted-average exercise price of approximately \$50 per share. HP also assumed approximately 11 million restricted stock units with a weighted-average grant date fair value of \$45. [...]

Direct transaction costs include investment banking, legal and accounting fees and other external costs directly related to the acquisition.

The purchase price allocations as of the date of the acquisition in the table below reflect various preliminary estimates and analyses, including preliminary work performed by third-party valuation specialists, and are subject to change during the purchase price allocation period (generally one year from the acquisition date) as valuations are finalized.

In millions	
Cash and short-term investments	$ 3,034
Accounts receivable	2,549
Property, plant and equipment	3,203
Other tangible assets	3,126
Notes payable and debt	(3,298)
Pension liability (Note 15)	(2,243)
Restructuring liability (Note 8)	(1,515)
Net deferred tax liabilities	(1,427)
Other liabilities assumed	(5,370)
Total net tangible liabilities	$ (1,941)
Amortizable intangible assets:	
Customer contracts and related relationships	3,199
Developed technology and trade name	1,349
Goodwill	10,395
IPR&D	30
Total preliminary estimated purchase price	$13,032

J. Jill, May 3, 2006

4. ACQUISITION OF J. JILL

On May 3, 2006, the Company acquired J. Jill, a multi-channel specialty retailer of women's apparel. J. Jill markets its products through retail stores, catalogs, and online. As of May 3, 2006, J. Jill operated 205 stores in the United States. J. Jill circulated approximately 56 million catalogs during 2005. The Company believes that the acquisition of J. Jill will provide the Company with a long-term growth vehicle and an opportunity to maximize the cost synergies of J. Jill and Talbots similar business models, particularly in back office functions. Both J. Jill and Talbots serve the 35 plus customer population; J. Jill focusing on apparel for a sophisticated casual lifestyle, with artistically inspired styles, providing a counterpoint to Talbots offering of updated modern classics.

Talbots acquired all of the outstanding shares of J. Jill for $24.05 per share for total consideration of $518,320 in cash. The Company used the proceeds from its $400,000 loan facility (see Note 9), as well as cash on hand to fund the acquisition. The Company also incurred acquisition-related fees and expenses of $5,967. The acquisition has been accounted for as a purchase in accordance with Statement of Financial Accounting Standards ("SFAS") No. 141, *Business Combinations* ("SFAS No. 141"), and accordingly, the results of operations of J. Jill have been included in the accompanying condensed consolidated statements of operations for the thirteen and twenty-six weeks ended July 29, 2006 from the date of the acquisition. In accordance with SFAS No. 141, the total purchase price has been preliminarily allocated to the tangible and intangible assets and liabilities acquired based on management's estimates of current fair values and may change as appraisals are finalized and as additional information becomes available. The resulting goodwill and other intangible assets will be accounted for under SFAS No. 142, *Goodwill and Other Intangible Assets* ("SFAS No. 142"). The following table summarizes the preliminary estimated fair values of the assets acquired and liabilities assumed, at the date of the acquisition, for an aggregate purchase price of $524,287, including acquisition costs.

	As of May 3, 2006
Cash	$ 30,445
Other current assets	109,842
Property and equipment	154,553
Goodwill	221,171
Trademarks	80,000
Other intangible assets	93,152
Current liabilities	(55,266)
Deferred income taxes	(98,224)
Other long-term liabilities	(11,386)
Total	$ 524,287

As part of the purchase price allocation, all intangible assets were preliminarily identified and valued. Of the total purchase price, $80,000 was assigned to trademarks, and $93,152 was assigned to other intangible assets, which consist of customer relationships of $77,700, non-compete agreements of $4,500, and favorable leasehold interests of $10,952. Management is in the process of finalizing the valuation of the acquired J. Jill intangibles. The amortization of the intangible assets that are subject to amortization is expected to be recognized over a weighted average life of approximately 11 years.

The acquired trademarks have been assigned an indefinite life and will not be amortized. Trademarks will be reviewed for impairment or for indicators of a limited useful life on an annual basis or when events indicate that the asset may be impaired.

The amount assigned to customer relationships, $77,700, is being amortized using a method that reflects the pattern in which the economic benefits of the intangible asset are expected to be consumed over a weighted average life of approximately twelve years. The amount assigned to non-compete agreements, $4,500, is being amortized on a straight-line basis over the period that the agreements are enforceable, approximately twenty months. The amount assigned to favorable leasehold interests, $10,952, is being amortized on a straight-line basis over the remaining lease period, or a weighted average of approximately eight years.

The excess of the purchase price over the fair value of tangible and identifiable intangible net assets was allocated to goodwill, which is non-deductible for tax purposes and preliminarily is estimated to be $221,171. In accordance with SFAS No. 142, this amount will not be amortized. Goodwill will be reviewed for impairment on an annual basis or when events indicate that the asset may be impaired.

R.R. Donnelley & Sons acquires Edgar Online, May 3, 2006[70]

On August 14, 2012, the Company acquired EDGAR Online, a leading provider of disclosure management services, financial data and enterprise risk analytics software and solutions. The acquisition of EDGAR Online will expand and enhance the range of services that the Company offers to its customers. The purchase price for EDGAR Online was $71.5 million, including debt assumed of $1.4 million and net of cash acquired of $2.1 million. Immediately following the acquisition, the Company repaid the $1.4 million of debt assumed. EDGAR Online's operations are included in the U.S. Print and Related Services segment.

[...]

The XPO and EDGAR Online acquisitions were recorded by allocating the cost of the acquisitions to the assets acquired, including intangible assets, based on their estimated fair values at the acquisition date. The excess of the cost of the acquisitions and the fair value of the contingent consideration over the net amounts assigned to the fair value of the assets acquired was recorded as goodwill. The preliminary tax deductible goodwill related to these acquisitions was $12.3 million. [...] Based on the current valuations, the purchase price allocations for these acquisitions were as follows:

[70] https://www.sec.gov/Archives/edgar/data/29669/000119312512446613/d416826d10q.htm

Accounts receivable	$ 15.4
Prepaid expenses and other current assets	0.8
Property, plant and equipment	2.2
Amortizable other intangible assets	24.2
Other noncurrent assets	14.0
Goodwill	44.4
Accounts payable and accrued liabilities	(16.3)
Other noncurrent liabilities	(0.1)
Deferred taxes-net	10.4
Total purchase price-net of cash acquired	95.0
Less: debt assumed	1.4
Less: fair value of contingent consideration	3.5
Net cash paid	$ 90.1

The fair values of technology, amortizable intangible assets, contingent consideration and goodwill associated with the acquisitions of XPO and EDGAR Online were determined to be Level 3 under the fair value hierarchy. The following table presents the fair value, valuation techniques and related unobservable inputs for these Level 3 measurements:

	Fair Value	Valuation Technique	Unobservable Input	Range
Customer relationships	$ 20.2	Excess earnings, with and without method	Discount rate Attrition rate	16.0% - 17.5% 7.0% - 20.0%
Technology	13.4	Excess earnings, relief-from-royalty method, cost approach	Discount rate Obsolescence factor Royalty rate (after-tax)	16.0% - 17.0% 10.0% - 20.0% 4.5%
Trade names	3.1	Relief-from-royalty method	Discount rate Royalty rate (after-tax)	15.5% - 17.5% 0.5% - 1.2%
Non-compete agreements	0.9	With and without method	Discount rate	17.5%
Contingent consideration	3.5	Probability weighted discounted future cash flows	Discount rate	4.5%