United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued March 19, 2010 Decided June 18, 2010

No. 09-1202

AEP TEXAS NORTH COMPANY,
PETITIONER

v.

SURFACE TRANSPORTATION BOARD AND UNITED STATES OF AMERICA,
RESPONDENTS

BNSF RAILWAY COMPANY,
INTERVENOR

On Petition for Review of an Order
of the Surface Transportation Board

William L. Slover argued the cause for petitioner. With him on the briefs were *Kelvin J. Dowd*, *Robert D. Rosenberg*, and *Andrew B. Kolesar III.*

James A. Read, Attorney, Surface Transportation Board, argued the cause for respondents. With him on the brief were *Robert B. Nicholson* and *John P. Fonte*, Attorneys, U.S. Department of Justice, *Ellen D. Hanson*, General Counsel, Surface Transportation Board, *Craig M. Keats*, Deputy General Counsel, and *Thomas J. Stilling*, Attorney.

Samuel M. Sipe Jr., *Anthony J. LaRocca*, and *Richard E. Weicher* were on the brief for intervenor BNSF Railway Company in support of respondent. *Kathryn J. Gainey* entered an appearance.

Before: SENTELLE, *Chief Judge*, HENDERSON and BROWN, *Circuit Judges*.

Opinion for the Court filed by *Chief Judge* SENTELLE.

SENTELLE, *Chief Judge*: AEP Texas (AEPT), an electric utility company, uses railroads owned by BNSF Railway Company (BNSF) to transport coal from mines in Wyoming to an electric generating station in Texas. BNSF exerts market dominance over the route used for this coal transportation, which renders the rates charged subject to review by the Surface Transportation Board (the Board). Under this authority, the Board has set a reasonable maximum rate for the transportation service since 1996. *See W. Tex. Util. Co. v. Burlington N. R.R. Co.*, 1 S.T.B. 638 (1996). In calculating a reasonable maximum rate, the Board considers, among other variables, the cost of equity capital, approximating a reasonable rate of return for railroad investors. AEPT petitioned the Board for a change in methodology in the calculation of the cost of equity capital. While the Board entered some changes, it denied a portion of the petition requesting a recomputation of that variable for the years 1998–2005. AEPT now petitions for review of that decision of the Board. We deny the petition with respect to the Board's decision not to recalculate that variable with respect to the years 1998–2004. However, as to the 2005 calculation, we hold that the Board failed adequately to explain its decision. We therefore vacate the Board's decision with respect to the 2005 calculation and remand for further consideration.

I. Background

AEPT is an electric utility generating and transmitting electricity to consumers in central and west Texas. To ship coal from Wyoming mines to its electric generating station near Vernon, Texas, AEPT uses railways owned by BNSF. Because there is "an absence of effective competition from other rail carriers or modes of transportation for the transportation" of coal on that route, BNSF is said to exert "market dominance" over AEPT's shipments. *See* 49 U.S.C. § 10707(a). Therefore, the rates BNSF charges on that route are subject to review by the Surface Transportation Board under § 10707(b), (c).

If the Board determines a railroad has market dominance, it can establish a reasonable maximum rate the railroad may charge for the transportation. § 10707(c). The Board calculates the reasonable maximum rate using a "constrained market pricing" methodology set forth in the *Coal Rate Guidelines*, 1 I.C.C.2d 520 (1985). To evaluate the rate for a specific route under this methodology, the Board posits a hypothetical railroad serving a subset of a real railroad's network. The hypothetical railroad, called a Stand Alone Railroad (SARR), operates the route used by the relevant shipper and is presumed to operate at optimal efficiency. The Board calculates the Stand Alone Cost for the SARR, which represents the cost of running the hypothetical railroad and includes a reasonable rate of return on investment. The return on investment is the rate of return "that shareholders require to compensate them for the use of their capital." *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital*, STB Ex Parte No. 664, 2008 WL 162591, at *1 (Jan. 17, 2008) ("*Methodology to be Employed—2008*"). This rate of return is referred to as the "cost of equity capital," or the "cost of equity." The SARR's Stand Alone Cost determines the maximum rate the railroad may charge all the shippers using the routes in the SARR. *See BNSF*

Ry. Co. v. STB, 526 F.3d 770, 777 (D.C. Cir. 2008). This method ensures that no shipper subsidizes another; "though some bear a higher share of fixed costs than others, they still pay no more than what they would for a facility designed to serve only them." *Burlington N. R.R. Co. v. ICC*, 985 F.2d 589, 596 (D.C. Cir. 1993).

The Board annually recalculates the industry-wide cost of capital. This cost of capital is used in various regulatory capacities, including calculating reasonable maximum rates for railroads with market dominance. The published cost of capital includes both the cost of equity capital and the cost of debt capital. Because the interest rates on borrowed money are easily observable, the cost of debt capital rarely becomes the subject of debate. The cost of equity capital, however, is not directly observable, which forces the Board "to rely on complex finance models to estimate that component of the cost of capital." *Methodology to be Employed—2008*, 2008 WL 162591, at *1.

Since 1996, the Board has used the Stand Alone Cost method to set the rates BNSF may charge AEPT[1] for use of the Wyoming to Texas railways. *W. Tex. Util. Co. v. Burlington N. R.R. Co.*, 1 S.T.B. 638 (1996), *aff'd sub nom. Burlington N. R.R. Co. v. STB*, 114 F.3d 206, 209 (1997). As dictated by the *Coal Rate Guidelines*, the Board determines the Stand Alone Cost for the route AEPT uses by calculating, among other things, the cost of capital for the relevant SARR, called the Texas & Northern Railroad (TNR). However, because SARRs are hypothetical, the Board rarely has enough data to estimate an individualized cost of capital for a specific SARR each year. Therefore, for most of its Stand Alone Cost determinations,

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[1]At the time, the complaining shipper was actually AEPT's predecessor, West Texas Utilities Company. For convenience, however, we refer to the company as AEPT for all time periods.

including the ones at issue in this case, the Board uses the estimated cost of capital it publishes each year for the whole railroad industry.

Obviously, the calculation of the industry-wide cost of equity capital is a significant factor in the determination of reasonable rates, as the cost of equity is a large component of the overall cost of a railroad. *See Railroad Cost of Capital—2008*, STB Ex Parte No. 558 (Sub No. 12), 2009 WL 3052742, at *10 (Sept. 25, 2009). But the cost of equity also has recursive implications. The Board averages each year's cost of equity into an historical cost of capital. The average historical cost then affects the Board's forecast of growth, which in turn affects the cost of equity in future years.

Because the methodology employed to estimate the cost of equity can substantially affect the rates a railroad can charge, and because the cost of equity is difficult to estimate, the Board's choice of methodology has provoked controversy for over a decade. During the Board's 1997 proceedings for calculating industry-wide cost of capital, a trade association of coal shippers called the Western Coal Traffic League (WCTL) argued that the Board's methodology for calculating the cost of equity capital overestimated actual costs. *See Railroad Cost of Capital—1997*, 3 S.T.B. 176, 177 n.1 (July 9, 1998). However, WCTL did not present any alternative calculations of its own. Therefore, the Board decided to retain its existing methodology. That methodology was a single-stage discounted cash flow (DCF) model, which the Board had been using since its first annual cost of capital calculation in 1981. Under the DCF method, the cost of equity is calculated as the discount rate that makes the present value of the expected returns on a stock, including dividends and price appreciation, equal to the current market value of the stock. *See, e.g.*, *Railroad Cost of Capital—1987*, 4 I.C.C.2d 621, 625, 626 (1988); *Railroad Cost*

of Capital—2004, STB Ex Parte No. 558 (Sub No. 8), 2005 WL 1534327 (June 21, 2005). In short, the DCF model computes the cost of equity through a relatively straightforward manipulation of stock predictions.

In 2005, WCTL again complained about the DCF method in the industry-wide proceedings, and proposed that the Board use a capital asset pricing model (CAPM) instead. *See Railroad Cost of Capital—2005*, 2006 WL 2692729, at *4 (Sept. 15, 2006). Under CAPM, the cost of equity is equal to the risk-free rate of return (for example, the rate of return one could expect from a 20-year Treasury bond) plus a premium associated with a particular investment. That premium is derived through an ordinary least-squares regression calculation that takes into account the overall rate of return on the stock market, systematic and non-diversifiable risk, and the historical rate of return for a class of stocks (here, railroad stocks). *Methodology to be Employed—2008*, 2008 WL 162591, at *6–8.

Citing a sparse record, the Board decided not to change its cost of capital methodology for 2005. *See Railroad Cost of Capital—2005* at *5–6. It did, however, start a separate rulemaking proceeding to determine, among other things, whether switching from DCF to a new method was warranted. *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital*, 2006 WL 2692727 (Sept. 15, 2006) ("*Methodology to be Employed—2006*"). After a notice and comment period in which various interested parties including WCTL, BNSF, and AEPT participated, the Board adopted CAPM for calculating cost of equity capital for 2006 and 2007. *Methodology to be Employed—2008*, 2008 WL 162591, at *1; *see also AEP Tex. N. Co. v. BNSF Ry. Co.*, STB No. 41191 (Sub No. 1), 2007 WL 2680223 (Sept. 7, 2007), at *4 ("AEP Texas and BNSF were among the interested parties that filed" comments). For its 2008 calculation, the Board decided to

calculate the cost of equity by using both CAPM and an updated DCF model and averaging the outputs of the two methods. *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, 2009 WL 197991, at *1 (Jan. 23, 2009).

While the Board proceeded with its rulemaking, WCTL filed a petition to this court arguing the Board's use of the DCF model for its 2005 calculation was arbitrary and capricious under the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). Just before oral argument, the Board released its decision to use CAPM for 2006, and in oral argument counsel for the Board conceded that the DCF methodology was flawed. However, the Board also argued that, because of its recent decision to change the methodology for future years, the proper way to resolve the issue of whether to use CAPM for prior years' calculations would be through administrative proceedings reopening past years' decisions. The administrative proceedings could either address the industry-wide proceedings in 2005 and prior years, or deal with individual rate cases. If there was enough evidence to establish that using DCF in prior years was material error, the Board would retroactively adjust the calculations. This court therefore denied the petition before it, stating that the 2005 cost of capital decision was "now ripe for review pursuant to a petition to reopen under 49 U.S.C. § 722(c)." *W. Coal Traffic League v. STB*, 264 F. App'x 7, 8–9 (D.C. Cir. 2008). That provision allows any interested person to petition to reopen an STB decision where there is "material error, new evidence, or substantially changed circumstances." 49 U.S.C. § 722(c). However, neither WCTL nor any other party petitioned to reopen the 2005 industry-wide cost of capital decision.

While WCTL was challenging the industry-wide cost of capital calculations, AEPT was engaged for several years in its own rate case before the Board, challenging the reasonableness

of the rates set by the Board for the TNR railroad. AEPT argued, among other things, that the DCF-derived cost of equity calculations were flawed, and particularly disputed the 2005 figure once the Board published it. *See AEP Tex. N. Co. v. BNSF Ry. Co.*, STB Docket No. 41191, 2007 WL 2680223, at *86 (Sept. 7, 2007). In 2006, the Board held the proceeding in abeyance while it resolved the industry-wide rulemaking. *Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub No. 1), 2006 WL 513502, at *2 (Feb. 27, 2006). In 2007, the Board decided, *inter alia*, that the DCF-derived cost of equity estimates were reasonable. *AEP Tex. N. Co. v. BNSF Ry. Co.*, STB Docket No. 41191, 2007 WL 2680223, at *19–20 (Sept. 7, 2007).

In 2008, AEPT petitioned for reconsideration pursuant to 49 U.S.C. § 722(c) on various issues. The Board reopened the case only with respect to the cost of equity. *AEP Tex. N. Co. v. BNSF Ry. Co.*, STB Docket No. 41191, 2008 WL 2216062, at *7–9 (May 27, 2008). In the reopened case, AEPT argued that the rates for the years 2000 to 2005 should be recalculated using CAPM. AEPT also requested that the Board either recalculate, using CAPM, the historical cost of capital figures used to forecast growth, or discard altogether the 1998 to 2005 numbers in the historical average. *See Opening Fourth Supplemental Evidence of Complainant AEP Texas North Company in Response to the Board's Decision on Reconsideration* 15, 31 tbl.4 (Aug. 8, 2008) ("*Opening Fourth Supp. Evid.*"); *AEP Tex. N. Co. v. BNSF Ry. Co.*, STB Docket No. 41191, at 11 (May 15, 2009) ("*2009 Decision*").

In May 2009, the Board denied AEPT's petition for reconsideration, rejecting the use of CAPM for any of the years from 2000 to 2005. *2009 Decision* at 4, 10. The Board also declined to change or excise the 1998 to 2005 DCF calculations in its historical cost of capital average. *Id.* at 11. In its decision,

the Board concluded that "it would be poor public policy to depart from the previously published figures" for two reasons, *id.* at 8. First, the railroad industry and its investors relied on the published figures. Changing the calculations retroactively would undermine those expectations as well as erode confidence in future cost of capital calculations. *Id.* Second, the Board concluded that the DCF calculations were reasonable. Even though CAPM is now the industry norm, the DCF method produced numbers "easily within the range produced by [] other finance models" in every year but 2005. *Id.* at 10 (citing *id.* at Chart 1). And as for the 2005 number, "the figure does not vary significantly more than other models that produce the highest or lowest estimate in a given year." *Id.*

AEPT petitions this court under the Administrative Procedure Act.

II. Standard of Review

AEPT brings its petition under 5 U.S.C. § 706(2)(A), which requires courts to set aside an agency decision if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." This standard requires a "rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) ("*State Farm*") (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). This court must vacate the Board's denial of AEPT's petition if the Board made "a clear error of judgment" or if it "entirely failed to consider an important aspect of the problem." *Id.* (quotation marks omitted). However, because the Board acts "at the zenith of its powers" when it sets rail rates, *Burlington N. R.R. Co. v. STB*, 114 F.3d 206, 210 (D.C. Cir. 1997) (quoting *Am. Trucking Ass'ns v. United States*, 627 F.2d 1313, 1320 (D.C. Cir. 1980)) (internal quotation mark omitted), we

recognize that the Board is "entitled to particular deference." *Id.* As long as the Board "has rationally set forth the grounds on which it acted, . . . this court may not substitute its judgment for that of the agency." *BNSF Ry. Co. v. STB*, 453 F.3d 473, 480 (D.C. Cir. 2006) (quoting *McCarty Farms v. STB*, 158 F.3d 1294, 1301 (D.C. Cir. 1998)).

In addition, the history of the cost of equity methodology debate presents a concern about what standard the Board was required to apply in its decisionmaking process. Because AEPT requests that the Board recalculate past years' rates with the methodology adopted in the industry-wide proceedings in 2006 and 2007, both the Board and AEPT discuss the issue in terms of retroactive application of a new rule. *See 2009 Decision* at 7. In its decision denying AEPT's petition, the Board therefore analyzed AEPT's petition using a balancing test similar to one created by this court to evaluate whether a change in methodology can be given retroactive effect. Citing *Williams Natural Gas Co. v. FERC*, 3 F.3d 1544 (D.C. Cir. 1993), the Board decided to "conduct the kind of balancing test described by the court in *Williams Natural Gas*." *2009 Decision* at 8. However, the Board did not apply the actual analysis outlined by that case, which was a five factor test originally set forth in *Retail, Wholesale & Department Store Union v. NLRB*, 466 F.2d 380, 390 (D.C. Cir. 1972). *See Williams Natural Gas*, 3 F.3d at 1553–54. Instead, the Board created its own two factor analysis, weighing "the degree of reliance by the railroad industry on our prior findings, and whether the prior findings appear to be within the bounds of reasonable predictions for the industry's cost of equity." *2009 Decision* at 8.

In its petition to this court, AEPT argues the Board misapplied the retroactivity analysis. AEPT quotes *Consolidated Edison Co. v. FERC*, 315 F.3d 316 (D.C. Cir. 2003), to posit that the Board should have looked not at

industry's reliance on the DCF model and the reasonableness of said methodology, but only at whether "the parties before the agency are given notice and an opportunity to offer evidence bearing on the new standard, and the affected parties have not detrimentally relied on the established legal regime." *Id.* at 323. (internal citation omitted). But in trying to cabin the Board's analysis within that case's framework, AEPT overestimates the similarity between this case and *Consolidated Edison*. *Consolidated Edison* addressed whether any legal principle mandates retroactive application to pending cases of a new policy statement not given the force of law. 315 F.3d at 319. In *Williams Natural Gas*, we considered whether "a rule announced in an agency *adjudication* may be given retroactive effect." 3 F.3d at 1553 (emphasis added). In this case, the Board created a new rule through a full notice and comment legislative rulemaking under 5 U.S.C. § 553. As neither *Consolidated Edison* nor *Williams Natural Gas* is on point, the Board was certainly not bound to employ the factors outlined in either of the cases.

It is also worth noting that AEPT does not request a truly retroactive application of the new rule. The promulgated rule establishing CAPM for the 2006 and 2007 industry-wide proceedings did not disturb the industry-wide calculations for prior years, and in this case the Board did not reopen those industry-wide calculations. Rather, the Board revisited whether, in light of "material error, new evidence, or substantially changed circumstances," 49 U.S.C. § 722(c), the Board should recalculate the maximum rate BNSF was allowed to charge AEPT from 2000 to 2005. AEPT's petition did not request a retroactive application of the new rule, but rather argued that the new rule revealed that using the old method was a mistake.

In sum, this court must simply determine whether the Board's evaluation withstands the arbitrary and capricious

standard outlined by 5 U.S.C. § 706(2)(A). Because this court's precedents on retroactivity do not dictate the Board's approach, the use of "the kind of balancing test described by the court in *Williams Natural Gas*," *2009 Decision* at 8, neither forecloses nor guarantees that the Board's decision satisfies those requirements.

III. Analysis

AEPT argues the Board's decision must be overturned because it is inconsistent with the Board's prior representations to this court about how the Board would reassess the DCF-derived cost of equity estimates. While incompatibility of an agency's action with the agency's prior representations to this court might be evidence of arbitrary and capricious decisionmaking, the Board did not act inconsistently in this instance. Before this court in *Western Coal Traffic League v. STB*, 264 F. App'x 7 (D.C. Cir. 2008), the Board did represent that the use of the DCF methodology in the industry-wide determination for 2005 did not establish that AEPT necessarily would have to submit to the DCF-derived number. In its brief to this court in that case, the Board explained that AEPT could seek reopening of its then-pending rate case under 49 U.S.C. § 722(c) if AEPT believed the Board's final rule switching to CAPM materially affected the outcome of AEPT's rate case. And at oral argument, the Board conceded that CAPM was a better method, but urged the court to allow the Board to address the issue first through § 722(c) proceedings. When AEPT filed its petition for reconsideration, the Board did exactly what it said it would: address the issue. The Board simply arrived at a result AEPT did not like. But a promise to allow AEPT to avail itself of the reconsideration process is not the same as a promise to change the prior years' rates. The Board has not acted inconsistently with its prior representations to this court.

Therefore, any evidence of arbitrary and capricious decisionmaking must come from the 2009 Decision itself. As described above, the Board divided its analysis into two major sections: reliance by the industry on the previously-published figures and the reasonableness of the DCF-derived cost of equity estimates. On the first factor, reliance, the Board concluded that "there has been significant investment-backed reliance by the railroad industry on our prior cost-of-capital findings." *2009 Decision* at 8. AEPT argues this was an improper conclusion because the decision looks at reliance by industry investors in general, not by BNSF in particular. In addition, AEPT points out that the Board's conclusion seemingly contradicts prior decisions by the Board that say CAPM "dominates the private sector" and is the "industry norm." *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital*, STB Ex Parte No. 664, 2007 WL 2363415, at *4, *5 (Aug. 20, 2007) ("*Methodology to be Employed—2007*"). How, argues AEPT, could the industry have relied on the DCF numbers when the industry was using CAPM? Finally, AEPT argues that even if investors did rely on the Board's use of DCF, there is no evidence such reliance was reasonable. At least by 2005, BNSF and other railroads knew the DCF methodology was being seriously challenged by WCTL in the industry-wide proceedings and by AEPT in its individual rate case.

AEPT's complaint that the Board looked to the industry rather than BNSF does not undermine the Board's analysis, especially because AEPT did not present any information to the Board to suggest that BNSF, a large and prominent carrier, operates differently from the industry as a whole. The Board did not make BNSF-specific conclusions, but it did extrapolate from what it knew about investors generally to the case at hand. *2009 Decision* at 8. Noting that BNSF itself makes significant capital investments—over $9 billion between 2004 and 2007—the Board pointed out that "[r]ailroads and investors . . . make

investment decisions based in part on" the published cost of capital figures. *Id*. "If we change that figure retroactively here, we not only undermine settled expectations but we erode investor confidence in future cost-of-capital findings." *Id.* (emphasis in original). Because investors might not invest sufficiently in railroads if they have no confidence in the stability of the Board's cost of capital figures, the Board decided to "set aside our cost-of-capital findings only if the prior published findings are shown to clearly fall outside a reasonable range." *Id.* at 9. It was reasonable for the Board to use its general understanding about railroad investors in making its decision in this case concerning two specific parties.

Nor does the Board's conclusion that railroads and investors relied on the DCF-derived numbers conflict with the Board's published acknowledgment that CAPM has become the industry standard. Railroads like BNSF could rely on the Board's use of DCF to model cost of equity even if they used CAPM internally. A simple hypothetical illustrates this point: If investors concluded, using CAPM, that it would cost $1 million to run a railroad, including the cost of equity, but knew the Board would allow rates charging up to $1.5 million because of the DCF calculation, of course they would rely on the Board's published figures in deciding whether to invest in the railroad—and decide that it was a very good deal indeed. The fact that one method is the industry standard does not mean the industry cannot rely on the Board's use of a different method.

AEPT's final argument about the Board's analysis of BNSF's reliance is more persuasive. The Board's discussion of reliance makes no distinction between reliance in one year versus any other. But the circumstances surrounding the 2005 cost of capital determination are different from other years. In its 2005 cost of capital determination retaining DCF-derived figures, the Board explained it was instituting a separate

proceeding to review the cost of equity methodology. *Railroad Cost of Capital—2005* at *5. Meanwhile, WCTL petitioned this court for review of the 2005 calculation, and during oral argument the Board itself represented it might be appropriate to reconsider at least the 2005 figures. *WCTL v. STB*, No. 07-1064, Oral Argument Tr. at 10, 15. AEPT brought evidence of all of these circumstances before the Board in the 49 U.S.C. § 722(c) proceeding. *See Opening Fourth Supp. Evid.* at 7–8. But in the 2009 Decision, the Board completely failed to address the unique circumstances of the 2005 cost of capital determination. The Board did not consider whether railroads and investors actually or reasonably could have relied on the permanence of the 2005 cost of capital determination when it was undermined by shippers in litigation and even by the Board itself. By relying only on generalized conclusions about how industry players rely on cost of capital determinations, the Board "entirely failed to consider an important aspect of the problem," making its assessment of reliance for the year 2005 arbitrary and capricious. *State Farm*, 463 U.S. at 43.

The Board's second consideration, the reasonableness of the DCF calculations, also included flaws, especially with respect to the 2005 figure. The Board began its analysis by addressing generally the arguments AEPT made in the reopened case about the superiority of CAPM over DCF. AEPT's evidence broadly stated that CAPM is more accurate than DCF, that in the *Methodology to be Employed—2008* decision the Board itself had concluded that DCF overstated the cost of equity, and that applying CAPM would be consistent with the Board's decision to use CAPM in future years. *Opening Fourth Supp. Evid.* at 15-21. The Board responded by acknowledging that "CAPM is a more modern and better accepted method for estimating the cost of equity than the single-stage DCF model." *2009 Decision* at 9. However, the Board explained, old calculations are not invalidated just because methods improve—the Board's switch

in 2006 to CAPM for the cost of equity calculation did not invalidate the use of DCF in prior years, just as the Board's decision to use a blended CAPM/DCF approach in 2008 did not invalidate the use of CAPM alone in 2006 and 2007. *Id.* AEPT argues that the Board did not consider changed circumstances or new evidence as it should have under 49 U.S.C. § 722(c), but these statements by the Board in its decision are evidence of the Board's consideration. The fact that the Board did not agree that the changed circumstances warranted changing prior years' calculations does not by itself mean the Board acted arbitrarily or capriciously or failed to consider seriously AEPT's evidence.

However, the rest of the Board's analysis of reasonableness stands on less solid ground. In its discussion, the Board relied heavily on a chart it created comparing the cost of equity estimates for the years 1994 to 2007 derived by five different methodologies: the Board's calculations (a DCF model through 2005, then CAPM in 2006 and 2007); CAPM; and three commercially produced methodologies published by Ibbotson/Morningstar, including a single-stage DCF model, a multi-stage DCF model, and a model called "3-Factor Fama-French." *2009 Decision* at 9 n.25, 10 & Chart 1. The chart reveals the fluctuating estimates produced by each methodology, and demonstrates the large variation possible in outcomes. In some years all five methodologies produce similar costs of equity, while in other years they vary greatly, but no method consistently produces either the highest or lowest estimates. Each methodology sometimes produced estimates on the higher end of that year's range, and sometimes produced estimates on the lower end of that year's range.

Referencing the chart, the Board concluded "that various reasonable and commercially available financial models produce a range of estimates for the cost of equity. . . . Simply because one estimate is the highest or lowest in a given year does not

mean that it is invalid or even the least accurate." *Id.* at 10. Certainly this is true, but it only establishes that one cannot determine if the Board's figures were invalid just by comparing them to the four other models' figures. It is problematic, then, that the Board apparently decided that such a comparison was all that was necessary to conclude its estimates were reasonable:

> The chart also reveals that the Board's prior determinations provide a reasonable estimate of the cost of equity for the hypothetical SARR posited in this case. For every year except 2005, the Board's estimate falls easily within the range produced by the other finance models. . . . Yet even then [in 2005], the figure does not vary significantly more than other models that produce the highest or lowest estimate in a given year. Thus, we do not regard the increase as sufficiently large to justify setting aside the industry's expectation that we would use that finding as the target rate of return for that year.

Id.

The Board's analysis contains serious flaws. First, the record before the Board included no information about any of the four methods the Board used as comparisons to its own published cost of equity figures. Instead, it appears that the Board chose to use the Ibbotson/Morningstar models of its own accord, saying that though "the Morningstar cost-of-equity estimates were not submitted by either party in this proceeding, we take official notice of these publicly available cost-of-equity estimates for the railroad industry." *Id.* at 9 n.25. But by choosing to use estimates not in the record, the Board foreclosed any opportunity for AEPT to refute the validity or usefulness of those models, or to offer counterexamples of other methodologies. In addition, the Board never explained why those methods were chosen or how they work, or even whether

they are a representative sample of the types of methodologies used by the railroad industry or its investors. And the Board never explained why in some years the Morningstar single-stage DCF model and the Board's single-stage DCF model produce such different cost of equity figures.

Most problematic, however, is the Board's use of the chart to justify its 2005 calculation. The block quote above represents the entirety of the Board's analysis about that year. The Board concluded that the 2005 calculation "does not vary significantly more than other models," but gives no information about how it arrived at this conclusion. As far as can be ascertained from the decision, the Board's analysis consisted of nothing more than an estimation measured by a cursory glance at the graph. Even in its briefing to this court, the Board employed a perfunctory analysis, largely resting its argument about reasonableness on the assertion that "a review of the chart shows visually [that] the Board's 2005 DCF figure is not out of line" with the estimates produced by the other methodologies. Resp. Br. at 40.

Before this court, AEPT attempted to discredit the Board's 2005 figure by deriving the arithmetic mean, standard deviation, and 90% confidence interval of the five figures included in the Board's graph, and showing that the Board's figure falls outside the confidence interval. The Board counters with the fact that the 2005 CAPM calculation in its graph also falls outside the confidence interval—although we note that the CAPM figure the Board criticizes must stem from a different CAPM model than the one actually employed by the Board in 2006 and 2007, as the Board's published figures for 2006–2007 differ from the data captioned as "CAPM" for those years. The Board also claims that other statistical tests better suited to small sample sizes indicate that the Board's 2005 figure was not outside a reasonable range.

We will not attempt to decide the merits of the methodologies. To paraphrase this court's admonishment to parties in a slightly different context, we do not sit as a panel of statisticians, but as a panel of generalist judges. *See City of LA v. U.S. Dep't of Transp.*, 165 F.3d 972, 977 (D.C. Cir. 1999) ("[W]e do not sit as a panel of referees on a professional economics journal . . . ."). We do note, however, that these arguments encapsulate exactly the kind of analysis in which the Board should have engaged before concluding that its 2005 calculation did "not vary significantly more" than other methods in other years. We recognize the difficulty of determining whether a model produces estimates so inaccurate as to be invalid, especially for a value as elusive as the cost of equity. But that does not mean the Board was free to choose methods for comparison without opportunity for comment by the parties and without any apparent rigor in its analysis. The Board's particularly cursory analysis of the 2005 cost of equity estimates constitutes arbitrary and capricious decisionmaking.

This leaves one final issue: whether the Board acted arbitrarily or capriciously when it decided not to recalculate its historical cost of equity average used to forecast growth. The Board declined to restate the past years' cost of equity estimates using CAPM or to use only the published 2006 and 2007 estimates in its historical average. Instead, the Board elected to maintain its normal practice of using the average of the historical cost of capital figures starting with the construction start date of the SARR. *2009 Decision* at 11. In so deciding, the Board cited two reasons. First, because the Board concluded there was "no basis to restate the 2005 estimate" to readjust BNSF's actual rates for those years, the Board saw no reason to restate the estimates for the purpose of forecasting. *Id.* Second, averaging all historical figures reduces the impact that any one year's aberrant estimate would have on the overall forecast. Using the DCF-derived estimates in the forecasts rather than

using only the 2006 and 2007 numbers decreases the chance that the forecast will be skewed if the 2006 and 2007 calculations produced flawed estimates.

These are reasonable justifications by themselves, and we hold that the Board's decision is valid insofar as it declines to throw out all years' estimates except those for 2006 and 2007. We also hold the Board's decision to be adequate with respect to the years prior to 2005. But the Board also explicitly depended on its prior conclusions about the industry's reliance on and the reasonableness of the 2005 estimate. Because those conclusions were arbitrary and capricious, the Board must reassess its use of the 2005 DCF-derived figure for historical averaging. If on remand the Board is swayed by AEPT's evidence with regard to the 2005 estimate for use in calculating that year's maximum rate, we see no reason why the Board would not also be swayed to adjust the 2005 estimate it uses in the cost of equity forecasts for the TNR.

IV. Conclusion

In its introduction to its analysis of the continued validity of the DCF-derived costs of equity, the Board explained that "the exact cost of equity in a given year remains an essentially unknowable number and any method we adopt will produce only an estimate." *2009 Decision* at 7. We recognize that truth, but even an imperfect estimate must be justified to satisfy 5 U.S.C. § 706(2)(A). We hold that, with respect to all years but 2005, the Board met that standard because the decision exhibits a "rational connection between the facts found and the choice made." *State Farm*, 463 U.S. at 43 (quotation omitted). However, the Board failed to address the concerns raised regarding the 2005 cost of equity. Because this constitutes a failure "to consider an important aspect of the problem," *id.*, we vacate the decision and remand to the Board to reassess its

decisionmaking for the 2005 cost of equity estimate.

So ordered.