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Case study: Texas's SH130 Segments 5 and 6

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Introduction:

On March 1st 2018, SH130 Concession Company LLC, after 2 years of ownership restructuring, filed lawsuit against its original owners, Ferrovial and Zachry for quality defects, fraud and breach of fiduciary duty (Reinhardt, 2018). Accordingly, the defendants had used their shareholders' power to force SH130 managers to disburse a total of US\$ 329 million to Central Texas Highway Constructors (CTHC), a Ferrovial-Zachry's affiliate company in charge of designing and building the road, despite their awareness of quality defects (SH130 et al, 2018). While the dispute is ongoing, it offers great insights into one of the most notorious PPP road projects in the US.

1. Project background

a. The beginning of SH130 PPP project:

Following the Comprehensive Development Agreement with Texas Department of Transport (TxDOT) in March 2005, Cintra, a subsidiary of Ferrovial, and Zachry, a subsidiary of Zachry American Infrastructure (ZAI), submitted an unsolicited proposal to design, build, finance, operate and maintain a 41-mile new highway, segments 5 & 6 of Texas's SH 130. The project aimed to relieve congestion on I-35 and thus became the first privately developed toll facility in Texas (Reinhardt, 2008). The proposal was a big surprise for everyone because the segments had been estimated to be commercially unfeasible (Bolaños et al, 2018). Yet, the private sector was willing to commit a total of US\$ 1.3 billion to build the facility while taking on revenue risk of the greenfield asset.

To deliver the plan, Cintra and Zachry established SH130 Concession Company, a special purpose vehicle (SPV), to enter the Facility Concession Agreement (FCA) with TxDOT on March 22nd 2007 (TIFIA, 2012). Under the arrangement, TxDOT received an upfront concession fee of US\$25 million and the provision of the 41-mile new road. In return, the authority granted the SPV the right to toll for 50 years after service commencement date. On the same day of the FCA being signed, the SPV also entered a design & construct (D&C) contract with a joint venture of Ferrovial's and Zachry's subsidiary, Ferrovial Agroman US (FAUS) and ZII respectively, for a fixed price of US\$924,219,214 (SH130 et al, 2018). Two months later, the two firms jointly formed an affiliate company named CTHC, to take on the responsibilities and deliver the D&C contract, of which performance was guaranteed by FAUS and ZII.

After major risks (i.e design and construction) were reallocated to different parties other than the SPV, the project reached financial close in March 2008 with a total transaction value of US\$ 1,326.9 million (TIFIA, 2012). As equity sponsors, Cintra and Zachry committed up to US\$261 million comprising of \$197 million in direct contribution and \$65 million as a contingency budget for liquidity during construction as well as additional right-of-way acquisition costs. The SPV also raised US\$ 1,115 million in debt, of which \$430Mn TIFIA loan from USDOT and 30-year senior bank loan of \$685.8 million available during construction from a syndicate of 5 European banks led by Banco Santander of Spain. The TIFIA tranche is subordinate to the senior bank loan tranche and due by 2047 with a fixed rate of 4.46% per year (TIFIA, 2012). The senior debt was initially priced at 130bp over Libor and rose to 170bp over 30 years (Reinhardt, 2008). The

banks also arranged a-US\$35-million facility available every 10 years from the service commencement date as well as another facility worth US\$29 million available for certain events. Cash sweeps and interest rate swaps were also set in place. Toll revenue was the only income stream to service the capital providers. The entire business case was a big bet on regional economy and population growth, which would increase traffic demand on the segments (SH130 et al, 2016). All assumptions of the financial plan were set and finalized among private parties just a year before the great financial crisis (GFC).

Construction quickly began in April 2009. After 3.5 years, the facility was open for traffic on October 24th 2012, a month ahead of schedule and within budget ((SH130 Concession Company, 2012). It was indeed the fastest route in the US with a posted speed limit of 85 mph.

b. SH130 key stakeholders:

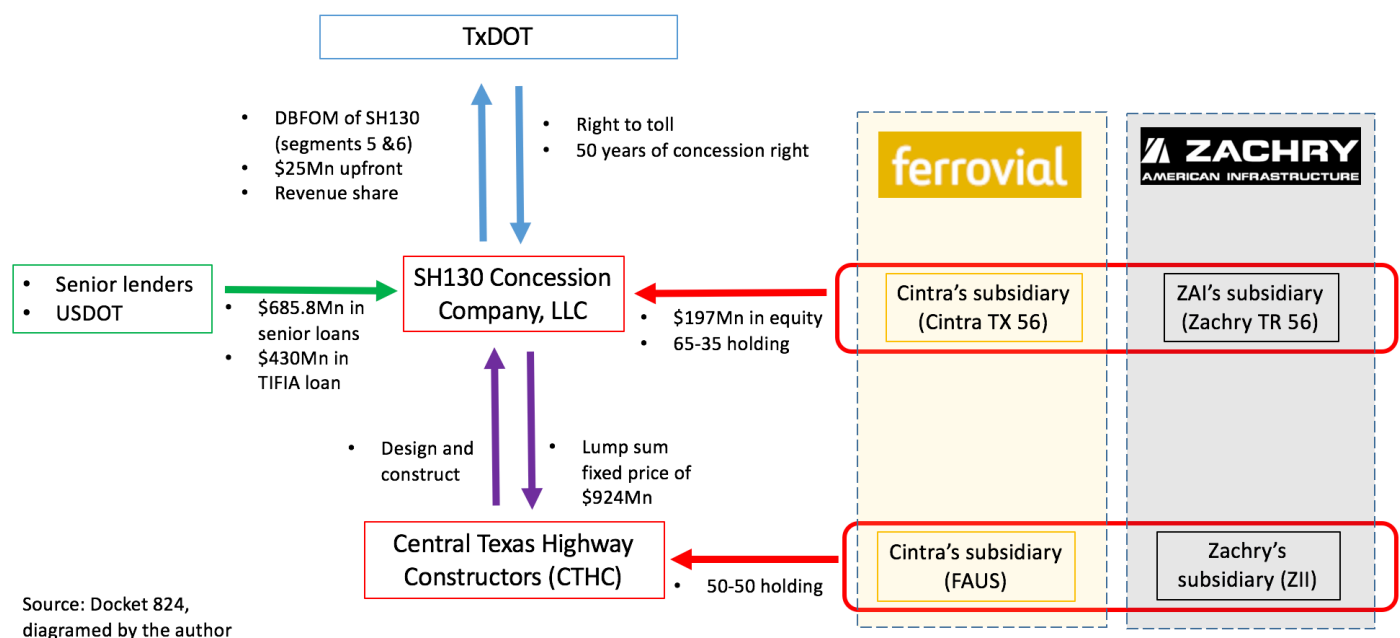


Figure 1: Project structure and key stakeholders

The project uses a typical PPP structure. The key stakeholders are (1) TxDOT as the granting authority, (2) senior and subordinated lenders, (3) the SPV, (4) equity sponsors, and (5) D&C and O&M contractors. Although these bilateral relationships were governed by a system of standard contracts, what makes SH130 a fascinating subject of research is the tied supply arrangement led by Ferrovia-Zachry as shown in figure 1.

Before ceding their ownership to the lenders following the company reorganization plan approved by the court in March 2018, Ferrovia S.A (FSA), a Spanish construction conglomerate, and Zachry Group, a Texas-based construction firm, essentially owned, managed and delivered the project through various subsidiaries and affiliates in the US (SH130 et al, 2018). For FSA, it held 65% equity of the project company through Cintra TX 56 that is fully owned by Cintra,

another 100% subsidiary of FSA in the US. The Spanish conglomerate also owned 50% of CTHC through FAUS, another subsidiary of Cintra. For Zachry, it held the remaining 35% equity of the SPV through ZAI's subsidiary, Zachry TR 56. It also owned 50% of CTHC through another subsidiary, ZII (SH130 et al, 2018).

c. Problems:

In the context of the case study, there are 2 major problems leading to project bankruptcy and the lawsuit:

- *Revenue shortfall:*

Funding of SH130 relies entirely on toll revenue (SH130 et al, 2016). At the start of the project, no one would have expected the great financial crisis in 2009. Consequently, the original traffic and revenue forecasts, which had been the basis of financial close, turned out to be significantly overestimated. In 2014, toll revenue was only 30% of the initial forecast (Bolaños et al, 2018). Missing multiple scheduled payments, the SPV was ultimately forced to declare bankruptcy in March 2016. 5 months later, Ferrovial-Zachry's ownership was transferred to the lenders as part of the bankruptcy process.

- *Tied supply chain and quality concern*

During and after construction, there had been cracking and heaving of pavement because the D&C contractor overlooked the design and then improperly treated the subgrade. The tied supply chain also kept the SPV's managers from enforcing the D&C contract that would have otherwise required CTHC to adequately stabilize the soil condition and quickly fix the subgrade. Worse, as cracking continued after construction, the SPV was fined of a total \$428,905 in addition to any outstanding costs of repairs imposed by TxDOT (SH130 et al, 2017). The lenders were only aware of this major issue shortly after taking over the project, thus effectively breaking the tied supply chain.

2. Untangling the failure of SH130 through agency theory

PPPs are implemented in a principal-agent environment where asymmetric information exists (Chang, 2013). Much of existing literature has focused on understanding the principal-agent problem between the public authority and the private consortium as well as how risk transfer can align the private agent's incentives with the public principal's (Palma et al, 2009). In SH130, nevertheless, the issues can be described in the context of common agency problem, in which there is also principal-principal problem.

SH130's managers serve multiple principals including TxDOT, Ferrovial-Zachry, and lenders. Contractually, TxDOT is the principal of the whole project and the consortium of SPV, equity sponsors, lenders, and contractors is the agent. Principal-agent relationships exist among private parties too. Ferrovial and Zachry were the direct owners of SH130 company and had the right to appoint its managers. Meanwhile, due to the nature of project finance, the senior lenders also have a lot of control via loan covenants and indirect ownership of the SPV through step-in right in any events of technical default. Bernheim and Whinston (1986) argue that

common agency problem emerges from asymmetric information, thus leading to moral hazard not only between the agent and the principals but also among the principals themselves. In SH130, as the managers decided to serve the best interest of one private principal over another, the tied supply chain has induced asymmetric information and moral hazard between the two principals.

Information was largely asymmetric between the tied supply chain and the lenders. According to docket 824, the lenders did not know the followings while Ferrovial, Zachry, and their subsidiaries were well aware of:

- Cracking started to appear 11 months after construction commencement. Since March 2010, SH130 managers found that the issue had come from soil stabilization of the subgrade level.
- SH130 managers were furious about CTHC's negligence in handling the matter. Internally, concerns over foreseeable cracking and heaving of the road were growing; yet, CTHC continued pavement work.
- In February 2011, SH130's CEO confirmed that CTHC had not complied with technical clauses of the D&C contract, questioned whether to stop the pavement work, and alerted the company parents as well as CTHC to quickly address the cracking problem.
- CTHC ultimately took action to repair the pavement in December 2011. But, SH130 managers continued to believe that the work was not adequate. ZAI's representatives, while reviewing CTHC's remedial work, proposed to extend construction warranty and revise O&M budget in order to account for additional costs of future repair.
- Regardless of technical noncompliance and actual defects caused by CTHC since February 2011, the SPV continued to pay the contractor. Indeed, the D&C contract strictly prohibits making payments for defective work.
- Throughout the pavement failure episode, SH130's parents, Ferrovial and its subsidiaries, dictated the contractual relationship between the SPV and CTHC. The SPV's managers had no control over the contractor's performance.
- When the lenders' appointed technical adviser started questioning about the cracking issue, the SPV's managers had to organize special meetings to coordinate together to cover up the problem.
- In response to 2009's financial crisis, the SPV and its equity sponsors commissioned and updated their traffic forecasts in January 2011, confirming "poor income prospects of SH130", much worse than anticipated (SH130 et al, 2018). The 2011's study implied that the company could hardly service the debts on schedule. However, in February 2012, SH130's CEO still assured the lenders that there would be sufficient revenue for debt repayments, citing the 2007's rather than 2011's study as the basis of the financial report.

The lawsuit claimed that none of the information about the new traffic study and the cracking issue were appropriately disclosed to the lenders. The SPV and its owners not only kept external parties from learning about SH130's imminent insolvency but also misled the lenders that the pavement failure was minor and non-systematic. Cracking was never disclosed until

March 2012, when reports to lenders briefly mentioned the phrase “pavement repairs” and that the remedial work was completed in August 2012 (SH130 et al, 2018).

In essence, SH130 is a unique example of how tied supply chain has induced moral hazard and conflict of interests among private parties, particularly when design, construction, and demand risks all materialized at the same time. Moral hazard is the basis of the lawsuit. The project could reach financial close initially because the lenders had assumed that design and construction risks were effectively transferred from the SPV to the D&C contractor. However, as it turned out, the tied supply chain still had the SPV bear most of the risks. If any risks materialized and the project became insolvent, the equity sponsors and CTHC would just walk away knowing that the damages would be ring-fenced within the SPV (SH130 et al, 2018). The uninformed lenders thus incurred most of the losses. When demand risk actually occurred in early 2011, Ferrovial and Zachry were willing to let SH130 become insolvent rather than informed the lenders and work out a solution. Moreover, despite knowing the defects since February 2011, the tied supply chain used shareholder power to fraudulently transfer money from the insolvent subsidiary (the SPV) to the solvent affiliate (CTHC) (SH130 et al, 2018).

3. Evaluation of key stakeholders’ responses in SH130

Literature on agency problem and PPP proposes 3 major mechanisms, in which moral hazard can be avoided or minimized: (1) *competition* (Fama, 1980; Fourie and Burger, 2000); (2) *monitoring* (loosa et al, 2007; Amagoh, 2009); (3) *incentive-based contract* (Laffont and Martimort, 2009). Because SH130 started as an unsolicited proposal led by Ferrovial and Zachry, there was no competition among private consortiums for TxDOT’s concession. Hence, we can assess how well the key players have implemented other mechanisms of monitoring and incentive-based contracts to effectively mitigate the common agency problem in SH130.

As the principal of the whole project, TxDOT is arguably the biggest winner. Not only does it receive an upfront concession fee of US\$ 125 million but also ensures service availability on SH130 despite private failures. Even though, it is unclear how well TxDOT monitors the SPV’s performance, the public grantor has effectively transferred most of the risks to the private agent via an incentives-based contract. Under the FCA, the SPV is given financial incentive of tolling and held accountable for any quality defects identified by a noncompliance system (TxDOT & SH130, 2007). The contract also allows TxDOT to impose penalty on the SPV and require adequate repairs of cracking from the private agent regardless of project bankruptcy and change in ownership.

Most of the disputes in SH130 emerge between the lenders and the tied supply chain, in which the former’s efforts of monitoring were ineffective. For example, section 6.3.9 of the senior loan agreement required the SPV to provide a monthly construction report and to appoint an independent technical adviser (SH130 et al, 2018). However, the cracking issue was never appropriately reported during construction. Moreover, the technical adviser was not only chosen and paid by the SPV but also has worked on Ferrovial’s previous projects, raising a question of collusion between the two parties. The lenders also arranged cash sweeps and step-

in right as both safeguards and incentive for the debtors to manage the project well. SH130 was becoming insolvent largely due to traffic shortfall, which SPV and its owners could hardly control or do anything about. The safeguard and incentive mechanisms used by the lenders to prevent moral hazard might have been the one leading to it. Knowing their ownership of SH130 was soon taken away, Ferrovial and Zachry might have more incentive to rescue their own money rather than the lender's by transferring as much cash as possible from the SPV to CTHC via the D&C contract despite the quality defects. Nevertheless, it is important to emphasize the use of monitoring and incentive-based covenants by the lenders was the industry standard in project finance. These mitigants were ineffective because they were designed to address moral hazard between the principal and the agent rather than the two principals, especially in a situation of the tied supply chain taking on risky greenfield project. The last resort and best action for the lenders is to sue the entire supply chain led by Ferrovial and Zachry consisting of 12 foreign and US legal entities.

On the other hand, the SPV's managers also took some actions as soon as learning about the problems. Internally, they continued to warn the equity sponsors against CTHC's improper treatment of the subgrade and imminent cracking if the pavement work presumed normally. The warnings, however, were ignored by both the sponsors and CTHC until the very end of construction. Worse, the managers decided to favor one principal over another by keeping relevant information from the lenders. Their actions not only were ineffective to address the issues but also exacerbated the consequences. The SPV was fined by TxDOT for technical failure and still had to spend more money on fixing the cracking. Had the managers appropriately informed the lenders, the issues might have turned out differently. As the lawsuit continues, it remains unclear whether the tied supply chain led by Ferrovial and Zachry can get away with their actions. Transactions costs incurred by the lengthy legal process might prove their efforts may not be worthwhile after all.

Suing Ferrovial, Zachry, and their subsidiaries is indeed the lenders' best hope to claim back any losses up to US\$ 329 million. The damages already occurred during construction and might have been alleviated or avoided, should the lenders:

- Request an update of the traffic assumptions in the SPV's financial model as early as possible to reflect the aftermath of GFC. If the finding is bad, the principals should take a collaborative approach and sort out the revenue shortfall issue together.
- Coordinate monitoring efforts with TxDOT rather than simply rely on the technical adviser and the monthly construction report.
- Request a non-executive seat in the SPV's Management Board in order to create not only an external monitoring, check-and-balance mechanism but also a more collaborative, multi-stakeholder environment among the private principals to better respond to risks and uncertainty throughout the concession period.

Further questions:

1. What are the general problems associated with an unsolicited proposal (UP) in PPP? Why some states in the US allowed the submission of UP but some do not?
2. Did Ferrovial and Zachry fully understand the severity of the subgrade problem? If so, why didn't they stop making payments to their affiliate and forcing a long-term solution to the cracking issue?
3. Were the lenders negligent in reviewing SH130's reports and not questioning the traffic assumptions following the GFC?
4. If the lenders were adequately informed, how would they have addressed the exogenous risk like traffic shortfall. Would the project have turned out differently?

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