For the Beauty of Logistics Series

The Panama Canal Debate: Sovereignty and Pricing Fairness

Paul E. Kent, PhD[1]

Recent remarks by the U.S. President regarding the Panama Canal have reignited longstanding concerns about American commercial interests, toll structures, and the Canal's governance. Specifically, the President suggested that the United States should reassume control of the Canal, citing rising tolls, perceived Chinese influence, and potential violations of treaty obligations. These claims—while not entirely new—reflect deeper strategic anxieties surrounding global chokepoints, critical infrastructure, and supply chain vulnerabilities.

The Panama Canal has long held exceptional geopolitical significance. Since its completion in 1914, it has served not only as a vital artery for global trade, but also as a cornerstone of U.S. maritime strategy and hemispheric influence. Following the 1977 Torrijos-Carter Treaties, which led to the full transfer of the Canal to Panama in 1999, periodic debates have emerged over whether Panama's stewardship has aligned with U.S. interests—particularly given the Canal's heavy use by American shippers. In recent years, these debates have increasingly focused on the fairness of toll pricing and the extent of foreign, especially Chinese, commercial activity in the Canal zone.

This paper does not seek to diminish the strategic importance of the Canal or the legitimacy of U.S. interests in its continued neutrality. Rather, it aims to clarify the legal, economic, and operational realities underlying these renewed assertions. Drawing on treaty obligations, public financial data, economic benchmarks, and market structure analysis, the paper evaluates whether the claims made—particularly around sovereignty, pricing fairness, and foreign control—hold up under scrutiny. In doing so, it also considers how U.S. policymakers might constructively respond, especially by strengthening alternative routes and reinforcing the Canal's role in a stable and open global trade system.

1. Historical Context and Legal Framework

a) Panama Canal Treaties

The Treaty Concerning the Permanent Neutrality and Operation of the Panama Canal (Neutrality Treaty) establishes that the Canal shall remain an international transit waterway, ensuring that vessels from all nations have equal access in both peacetime and wartime. The treaty explicitly prohibits discrimination based on nationality and requires that tolls and other charges be just, reasonable, equitable, and consistent with international law. Additionally, the treaty grants vessels of war and auxiliary vessels from all nations the right to transit the Canal without being subjected to inspection, search, or surveillance, except under health, sanitation, and quarantine regulations. It further stipulates that, after the termination of the Panama Canal Treaty, only the Republic of Panama shall operate the Canal and may maintain military forces within its national territory. To reinforce global adherence to its principles, the U.S. and Panama jointly sponsor efforts within international organizations to uphold the treaty's neutrality provisions.

b) U.S. Transfer of the Canal in 1999 and Establishment of the Panama Canal Authority (PCA)

The 1977 treaties resulted in the full transfer of the Canal to Panama by December 31, 1999, leading to the establishment of the Panama Canal Authority (PCA) as an autonomous entity responsible for its operations, maintenance, and infrastructure projects. Since taking control, the PCA has overseen significant

[1] Senior Vice President, Ports and Logistics, Monument Economics Group, pkent@megconsulting.com.

modernization efforts, including the expansion of the Canal, which was financed through a combination of international loans and toll revenues.

While the U.S. relinquished control of the Canal, it retains the right to ensure its neutrality and has a legal basis to intervene if neutrality is compromised. This remains a contentious issue in diplomatic discussions, as the U.S. continues to emphasize the importance of maintaining unrestricted commercial and military transits through the Canal without interference.

2. U.S. Commercial Interests and Toll Structures

The Panama Canal is integral to U.S. trade, with approximately 73% of the total tons of cargo transiting the Canal tied to U.S. importers and exporters. Unlike its predecessor Panama Canal Commission, which as an independent public institution, operated the Canal on a breakeven basis, the PCA operates the Canal as a business, seeking to maximize profitability and generate significant contributions to Panama's national treasury.

While the PCA's policy of transferring surplus revenues has been highly beneficial for Panama, it has created discomfort by some in the U.S. government who view the toll structure as a tax on U.S. shippers. The increasing tolls, driven by the need to generate surplus revenue for the Panamanian government, have raised costs for U.S. shippers, which likely increase the cost of goods to U.S. consumers and export trading partners.

Although the PCA has maintained transparency in its toll-setting process and ensures that charges align with international standards, U.S. policymakers argue that these tolls disproportionately affect U.S. trade given the country's reliance on the Canal. This tension underscores a broader debate over the role of the Canal as a commercial entity versus its historical function as a facilitator of global trade.

3. Panama Canal Revenue Contributions and Transfers to the National Treasury

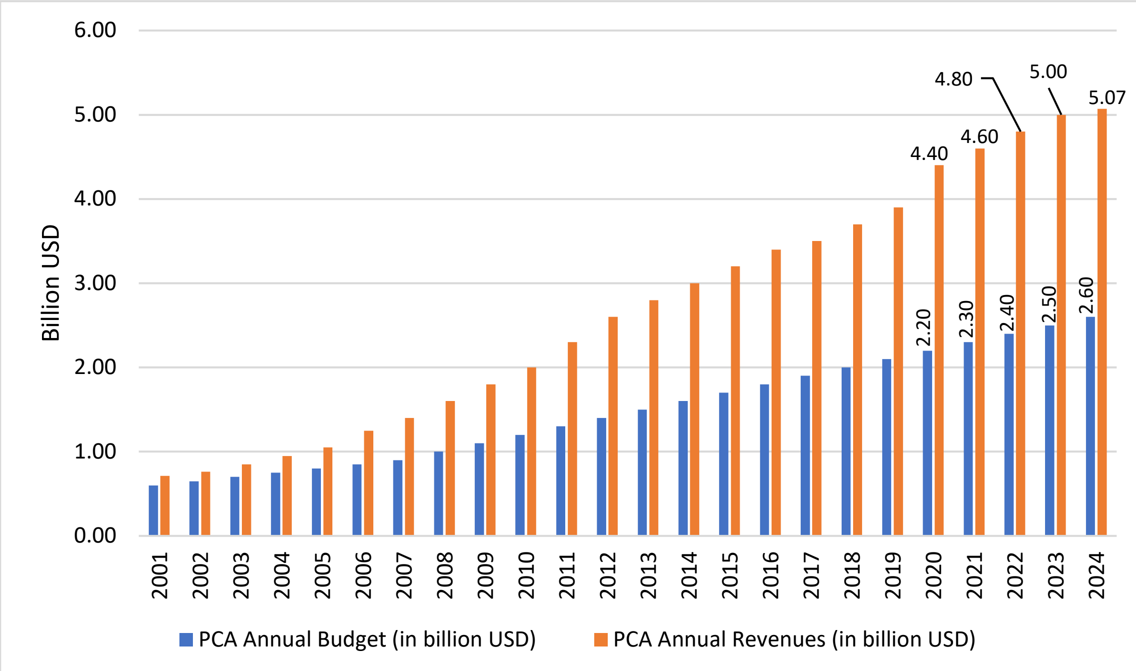
Since the Panama Canal's transfer to Panama in 1999, the Panama Canal Authority (PCA) has played a significant role in generating revenue for the country. Under the Panamanian Constitution and PCA's enabling legislation, the PCA is required to transfer all revenues exceeding its annual operating and maintenance costs to the national treasury. Over the years, these transfers have grown significantly, reflecting growth in Asian-US trade, the Canal's expansion, and its operational efficiency.

From 2001 to 2024, PCA annual revenues increased steadily, from $713 million in 2001 to over $5 billion in 2024 (Figure 1). This growth is attributed to the Canal's competitiveness via other routing options, U.S.-Asian trade growth, implementation of efficient management practices, dynamic toll structures, and the addition of the neo-Panamax locks, which allowed the Canal to accommodate larger vessels. The PCA's budget also expanded during this period, growing from $600 million in 2001 to $2.6 billion in 2024, reflecting rising operating costs, infrastructure maintenance, and capital financing expenses.

While toll revenues represent the primary source of income for the PCA, accounting for approximately 67.4% of total revenues[2], the Canal also generates income from other services, including transit-related services charged to carriers), which represent 29.4% of total revenue.[3] Altogether, about 96.8% of PCA's total revenues are applied to vessels transiting the Canal. (e.g., pilotage, booking fees, transit slot reservations, transit

[2] Canal de Panamá, Annual Report 2023, p. 40, available at https://pancanal.com/wp-content/uploads/2021/08/Informe-2023EngFINAL.pdf?utm_source=chatgpt.com.
[3] Canal de Panamá, Annual Report 2023, p. 43, available at https://pancanal.com/wp-content/uploads/2021/08/Informe-2023EngFINAL.pdf?utm_source=chatgpt.com.

Figure 1. PCA Annual Budget and PCA Annual Revenues in Billions USD by Fiscal Year



Source. Canal de Panama, "The Panama Canal Makes Direct Contributions to the National Treasury, 18 December 2024, available at https://pancanal.com/en/the-panama-canal-makes-direct-contributions-to-the-national-treasury/.

auction, vessel inspection, tug assist, and freshwater surcharge, implemented in response to variable rainfall and water conservation needs).

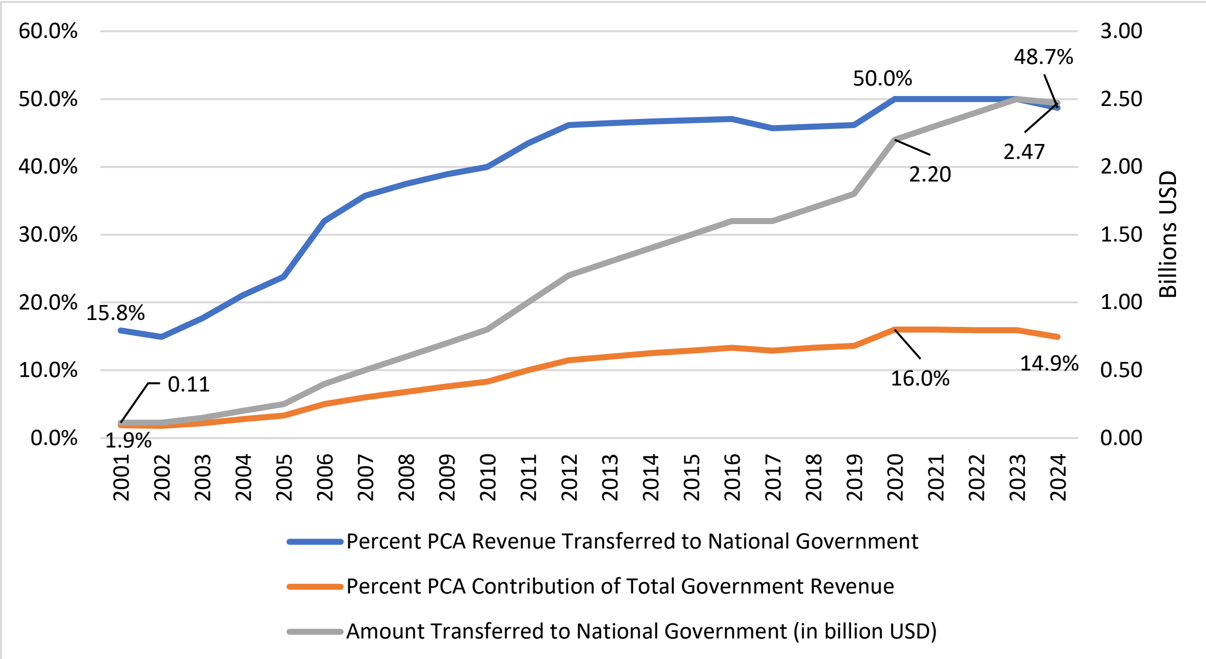
The percentage of annual PCA revenue transferred to the national government has shown a substantial increase, rising from 15.8% in 2001 ($113 million) to a peak of 50% in 2020–2023 (reaching $2.5 billion in 2023) before slightly decreasing to 48.7% ($2.47 billion) in 2024 (Figure 2). In recent years, the PCA has generated revenue at twice the level required for operational sustainability, with all surplus funds transferred to Panama's National Treasury. These transfers demonstrate the PCA's dual role as a global infrastructure operator and a key contributor to Panama's national budget.

The contribution of PCA transfers to Panama's total government revenue has also increased significantly over the years. In 2001, PCA transfers represented just 1.9% of total government revenue. By 2020, this figure reached about 16.0%, underscoring the Canal's growing importance to the national budget. Although the percentage dipped slightly to 14.9% in 2024, the PCA remains one of the largest single contributors to Panama's government finances.

The data highlight the dual role of the PCA as both an operator of critical global infrastructure and cornerstone of Panama's revenue. However, the increasing dependence on PCA revenues raises questions about economic diversification and the long-term sustainability of relying so heavily on Canal operations for national funding.

Critics of this dependence argue that U.S. shippers effectively subsidize a significant portion of these revenues, given that 73% of the cargo transiting the Canal is tied to U.S. trade, representing a value of $270

Figure 2. PCA Transfers to Panama's National Government: Percent of PCA Revenue, Percent of Total Government Revenue, and Amount Transferred



Source. Canal de Panama, "The Panama Canal Makes Direct Contributions to the National Treasury", 18 December 2024, available at https://pancanal.com/en/the-panama-canal-makes-direct-contributions-to-the-national-treasury/.

billion each year.[4] Additionally, the Canal's presence has spurred broader economic growth in Panama, attracting foreign investment in logistics facilities and marine terminals, further integrating Panama into global supply chains.

However, this success also raises the potential for competitive responses. The increased use of intermodal corridors linking Mexican ports with U.S. markets—such as the Lázaro Cárdenas-Kansas City rail corridor—could provide alternative routes. Similarly, increasing cross-border rail connections, improved U.S. port intermodal networks, and the diversion of transit traffic to alternatives like the Suez Canal could reduce dependency on the Panama Canal. Additionally, potential investments in competing corridors, such as Mexico's Tehuantepec interoceanic corridor, may create further options for cargo flow.

Reshoring of U.S. manufacturing and increased foreign direct investment (FDI) in North America could mitigate transport costs and supply chain risks, reducing reliance on long-haul shipping. These dynamics highlight the complex interplay between the Canal's economic contributions, its competitiveness vis a vis other options, and its impact on global trade patterns.

4. Assessing the Financial Performance of the PCA

In arbitration matters, analysts use "comparables" to demonstrate expectations for financial performance in companies similar in nature. Comparables help assess the reasonableness or expectations of one firm's financial results relative to others. In this case, the comparison aims to determine whether the Panama Canal

[4] CNBC Money Report, "Panama Canal says shipping rebound is underway after record drought", November 12, 2024, available at https://www.nbcnewyork.com/news/business/money-report/panama-canal-says-shipping-rebound-is-underway-after-record-drought/5976749/.

Authority's financial results are fair or indicate excessive pricing. While no exact comparable exists for the PCA (the Suez Canal Authority would be the closest match, but detailed financial data is difficult to obtain), global and regional port and marine terminal operators represent a reasonable proxy.

The financial performance of major global terminal operators provides an important benchmark. For 2023, the PCA reported total revenue of $5.07 billion and an EBITDA of $3.252 billion, yielding an EBITDA margin of 64.14%. This margin is notably higher than many of its peers, reflecting strong operational efficiency and profitability. Adani Ports (65.3%), ICTSI (63.2%), and China Merchants Port (52.8%) are among the closest comparables in financial performance. In contrast, DP World (28.0%) and CMA CGM (19.2%) operate at much lower EBITDA margins despite significantly larger revenues.

This comparative analysis suggests that PCA's profitability is within the range of large-scale infrastructure operations rather than being an outlier. Whether this profitability is justified by high capital costs, reinvestment needs, and efficiency or reflects excessive revenue generation at the expense of shippers remains a subject of debate. Table 1 presents the full financial comparison.

The comparables framework helps assess the reasonableness of the PCA's financial outcomes, but it does not fully explain how the Canal manages to sustain high profitability while maintaining competitiveness. A closer examination of the Canal's pricing strategy and the elasticity of demand for its services provides further insight into how the PCA balances revenue generation with its critical role in global trade.

5. Demand Elasticity, Pricing Strategy, and Revenue Sustainability

The financial performance of the Panama Canal Authority (PCA), as demonstrated by its consistently high EBITDA margin and sustainable transfers to the national treasury, raises important questions about pricing strategy, market power, and long-term competitiveness. One lens through which to evaluate these issues is demand elasticity—that is, how sensitive Canal users are to changes in toll rates.

The PCA, unlike private logistics firms, is a public infrastructure operator with national obligations. Yet it has operated in a market-responsive manner, adjusting tolls through a consultative process while maintaining competitiveness. In a public speech delivered more than two decades ago, Ricaurte Vásquez—then Deputy Administrator of the PCA and now its current Administrator—outlined the Canal's distinctive economic role.[5] He explained that its services are subject to derived demand, noting that the PCA does not serve end consumers directly but instead provides essential infrastructure for global logistics systems. As a result, demand for its services tends to be relatively inelastic, especially in the short term.

At the time, the Deputy Administrator cited an 8.5% toll increase that elicited minimal resistance from cargo owners, confirming the Canal's strong pricing power. In the long run, however, he acknowledged that elasticity may increase as competitors—such as the Suez Canal, U.S. intermodal landbridges, or emerging corridors like Mexico's Tehuantepec route and a possible one tied to Guatemalan port improvement

[5] For an article on which the speech was based, see Ricaurte Vásquez, "Economic Forces in the Decision-making Process of the Panama Canal", *Maritime Economics & Logistics*, Policy Perspective, 2003, 5, (pp. 219-223).

Table 1. 2023 Financial Performance of Global Terminal Operators Compared to the Panama Canal Authority (PCA)

Company	Total Revenue (billion USD)	EBITDA (billion USD)	EBITDA Margin	Source
Panama Canal Authority (PCA)	$5.07	$3.252	64.14%	PCA 2023 Financial Report (https://pancanal.com/wp-content/uploads/2021/08/Informe-2023EngFINAL.pdf)
Suez Canal Authority	$9.4	Not Available	Not Available	Egypt Today, "SCA chairperson: Suez Canal revenues fell to $7.2B in FY23/24 as Red Sea attacks continue", 14 October 2024 (https://www.egypttoday.com/Article/3/135359/SCA-chairperson-Suez-Canal-revenues-fell-to-7-2B-in)
DP World	$18.25	$5.108	28.0%	DP World 2023 Annual Report (https://www.dpworld.com/news/releases/dp-world-announces-resilient-fy2023-results-with-stable-adjusted-ebitda-at-51-billion/)
CMA CGM	$47.02	$9.01	19.2%	CMA CGM 2023 Annual Financial Results (https://www.cmacgm-group.com/en/news-media/2023-annual-financial-results)
PSA International	$7.03	$3.25	46.3%	PSA International 2023 Financial Report (https://www.psaannualreport.com/wp-content/uploads/2024/04/PSA-Financial-Report-2023.pdf?t=1715133124)
APM Terminals	$3.8	$1.3	34.2%	APM Terminals 2023 Corporate Presentation FY 2023 (apm-terminals-corporate-presentation-fy-2023 (2).pdf)
ICTSI	$2.39	$1.51	63.2%	ICTSI 2023 Financial Report (ICTSI FY2023 Reported Net Income at US$511.53M after non-cash impairment charges; Recurring Net Income Up 7% to US$676.83M | ICTSI)
China Merchants Port	$1.6	$0.845	52.8%	Drewry Maritime Research, Global Container Terminal Operators Annual Review 2023/24
Hutchison Ports	$5.73	$2.47	43.1%	Drewry Maritime Research, Global Container Terminal Operators Annual Review 2023/24
Adani Ports	$2.37	$1.545	65.3%	Drewry Maritime Research, Global Container Terminal Operators Annual Review 2023/24
Shanghai International Ports Group	$5.54	$2.241	40.5%	Drewry Maritime Research, Global Container Terminal Operators Annual Review 2023/24

commitments in Quetzal[6]—improve their offerings. Thus, the Canal must continuously evaluate how far tolls can rise without risking traffic diversion.

This suggests that the PCA does not merely pursue toll increases opportunistically, but rather follows a model of strategic revenue optimization. Its consistent transfer of approximately 50% of gross revenues to Panama's national treasury indicates a stable and deliberate surplus generation strategy, grounded in economic principles. While critics argue that such transfers imply profit-maximization at the expense of shippers, it is equally plausible that the PCA is exercising its market power judiciously—maximizing revenues within boundaries that preserve long-term competitiveness and service reliability.

Toll pricing at the Canal today reflects both vessel capacity and per-container charges, especially for neo-Panamax ships. This tiered approach resembles differentiated pricing strategies in other network industries and reflects an effort to align fees with the value perceived by users. It also recognizes that not all cargo is equally price-sensitive, nor are all shippers constrained by the same competitive alternatives.

The PCA's toll-setting approach mirrors that of a monopolistic infrastructure provider operating in a constrained but global market. It must generate sufficient revenue not only to cover operating costs, but also to fund long-term infrastructure investments, such as the neo-Panamax locks, water security initiatives, and future capacity enhancements. In this context, its ability to maintain high toll revenues without significant traffic loss suggests that alternatives to the Canal are, at least for now, not viable substitutes for most users.

In summary, while debate over the fairness of Canal tolls continues, the evidence suggests that PCA's pricing strategy is guided by economic rationality and long-term sustainability. Its toll policies reflect a careful balance between revenue needs, competitiveness, and market structure—a balance that has thus far allowed Panama to benefit from the Canal's global relevance without undermining its role as a critical facilitator of international trade.

6. Conclusion

The recent remarks by the U.S. President regarding the Panama Canal have brought renewed attention to longstanding concerns about toll levels, governance, and strategic influence. While such concerns are not without precedent, this paper finds that many of the assertions can be better understood through the lens of treaty obligations, financial transparency, and infrastructure economics.

The legal framework governing the Canal—particularly the Neutrality Treaty—remains in force and affirms Panama's commitment to ensuring non-discriminatory, equal access for all vessels, including those of the United States. Since assuming control in 1999, the Panama Canal Authority (PCA) has modernized the Canal, implemented consistent operational practices, and maintained a transparent toll-setting process.

From a commercial and financial standpoint, the PCA operates under a public enterprise model that seeks to balance profitability with reinvestment and national economic contributions. The Authority has consistently transferred close to 50% of its revenues to Panama's national treasury while continuing to expand and

[6] The Guatemalan government recently signed a $600 million investment commitment with the U.S. to expand and improve Port Quetzal on Guatemala's Pacific Coast. See MercoPress, "US backs modernization of Guatemalan Pacific port to counterbalance China's expansion", 26 February 2025, available at https://en.mercopress.com/2025/02/26/us-backs-modernization-of-guatemalan-pacific-port-to-counterbalance-china-s-expansion. Guatemala's port improvement plans are also likely to extend to the Caribbean side with connectivity between the two coasts to be provided by rail and improved road links, essentially establishing a coast-to-coast "dry" corridor. See U.S. Department of State, "Secretary of State Marco Rubio and Guatemalan President Bernardo Arévalo as a Joint Press Availability", 5 February 2025, available at https://www.state.gov/secretary-of-state-marco-rubio-and-guatemalan-president-bernardo-arevalo-at-a-joint-press-availability/.

maintain Canal infrastructure. When compared with large-scale global terminal operators, the PCA's financial performance appears well within the range of normal industry outcomes, rather than evidence of excessive pricing.

Yet concerns persist—particularly from U.S. stakeholders—over whether Canal tolls place an undue burden on American shippers, who account for the majority of Canal-related cargo. In this context, it is useful to examine the elasticity of demand for Canal services. The evidence suggests that while the Panama Canal does enjoy considerable market power, especially in the short term, its pricing strategy has remained cautious and adaptive. Still, as global trade patterns evolve and if viable alternatives emerge, the Canal's long-term pricing power will face new constraints.

Accordingly, if the objective is to ensure greater price discipline, the most constructive response lies not in revisiting sovereignty or control, but in accelerating the development of competitive alternatives. This includes enhancing intermodal connectivity in U.S. ports, investing in cross-border logistics corridors with Mexico and Canada, and fostering viable transshipment and landbridge options in other countries that provide real choice for shippers.

Finally, it is important to address the recurring claim that the Panama Canal is controlled by China—an assertion not supported by the facts. Since 1999, the Canal has been operated by the Panama Canal Authority, an autonomous entity established under Panama's constitution. It is not, and has never been, under the control of any foreign government. While Hutchison Ports, a company originally based in Hong Kong and now under Chinese ownership, currently operates the ports of Balboa and Cristobal, these are just two among several marine terminals in Panama. In fact, four other countries are represented in Panama's terminal operations: the United States (SSA Marine at Manzanillo International Terminal), Singapore (PSA), Taiwan (Evergreen at Colon Container Terminal), and Switzerland (Terminal Investment Limited, affiliated with MSC). While the commercial presence of these countries does not raise the same strategic concerns that have been voiced with respect to China, it is reasonable to expect that companies from these countries—and their respective governments—would actively seek to safeguard their commercial interests through diplomatic or legal channels if those terminals were subject to undue interference or disruption.

Moreover, a recent agreement involves a consortium led by BlackRock and TIL to acquire a 90% stake in Hutchison Port Holdings (for terminals outside China), which includes Panama Ports Company. Hence, operational control of Balboa and Cristobal is likely to shift to the BlackRock–TIL consortium by the end of the year, pending due diligence and approval by the Panamanian government. While this transaction would further reduce Chinese commercial presence in Panama's port sector, it is essential to emphasize that even prior to the deal, there has been no Chinese control over the Canal itself or the broader system of marine terminals.

Ultimately, the Panama Canal remains a vital and well-managed link in global supply chains. Its pricing and performance reflect both its importance and its responsibility. Ensuring that the broader logistics system offers credible alternatives is the most effective way to foster a fair and market-responsive environment for international trade. Continued U.S.–Panama dialogue and cooperation will be essential in supporting this goal and preserving the Canal's role as a neutral and reliable facilitator of global commerce.

Prologue: On Concession Extensions and "Sweetheart Deals"

At a recent hearing of the U.S. Senate Commerce Committee, one senator claimed that "two Chinese companies operate the two huge ports on both ends of the Panama Canal" and that the concession "was extended in 2021 for a 25-year period without any bidding," calling it a "sweetheart deal."[7] This assertion misrepresents how concession contracts typically function.

In global port concession practice—including Panama's—agreements often include an option to extend, contingent on the concessionaire meeting performance and other obligations in the original agreement. These extensions are negotiated, not automatic, and may require additional investment commitments or higher payments to the host government. They are neither routine nor "free." In fact, Drewry reports that of 27 port concessions reviewed, 21 were extended, with only six allowed to expire.[8]

In the case of Hutchison Ports' concession in Panama, the second-term extension included a commitment to pay a minimum of $7 million annually in dividends as well as increased tariffs for container movements across all Panamanian terminals.[9] A formal shareholders' agreement was also signed. The Panama Maritime Authority projected that the revised terms could yield over $800 million in revenue from tariffs and dividends over the next 25 years, with the payment per container movement rising from $12 to as much as $19. In the initial period alone, the package generated $164.5 million—the highest revenue collected under the concession to date.

Thus, the extension was not unusual by international standards and clearly involved significant new obligations—hardly the hallmarks of a "sweetheart" arrangement. As is standard practice, public authorities typically review the basis for awarding or extending concessions, as was done in Costa Rica with APM Terminals' concession in Puerto Moín. In Panama, the Hutchison concession extension is currently undergoing audit by the national government.

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This paper is the fifth installment in Dr. Kent's *For the Beauty of Logistics* series, a collection of short papers that explore how logistics principles intersect with economic, policy, and infrastructural systems to drive innovation, optimize complex processes, and reveal deeper insights into global dynamics. Previous papers in the Series can be found here:

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