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Foreign Direct Investment Negotiations on the Domestic Component Level Framework: Technology Diplomacy between Indonesia and Apple Inc.

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ABSTRACT

Technology diplomacy has emerged as a strategic instrument for developing countries seeking to enhance their bargaining position vis-à-vis global technology firms. This article examines the negotiation dynamics between the Indonesian government and Apple Inc. concerning the implementation of a 40% Domestic Component Level (TKDN) requirement during the 2020-2024 period. Based on the Foreign Direct Investment (FDI) Bargaining Model and a critical political economy approach, this study analyzes government policy documents, official corporate statements, and national and international media reports to trace the bargaining process and its outcomes. The findings reveal that having formal regulatory authority did not necessarily provide Indonesia with effective leverage in negotiations. Despite Indonesia's large market size and formal control over local content certification, structural constraints in industrial capacity, supply chain integration, and institutional coordination limited the credibility of regulatory pressure.

KEYWORDS

Asymmetry; Foreign Direct Investment; Global Value Chain; Indonesia; Technology Diplomacy

INTRODUCTION

The global digital transformation is encouraging developing countries to use technology diplomacy as a strategic tool to strengthen their bargaining position with multinational technology companies. In the context of the digital economy, technology diplomacy aims not only to increase access to innovation but also to strengthen domestic production capacity, reap the benefits of technology-based industrialization, and maintain economic sovereignty. In Indonesia, this goal is realized through a 40% Domestic Component Level (*Tingkat Komponen Dalam Negeri*/ TKDN) requirement policy as a prerequisite for investment and distribution of high-value technology equipment in the domestic market (Edquist & Zabala, 2012).

However, regulation alone is not always sufficient to generate fair negotiations. Negotiations between the Indonesian government and Apple Inc. regarding TKDN compliance demonstrate the power imbalance between the state and global technology companies (Vernon, 1971; Sturgeon, 2021). Despite Indonesia's large market and ambitions for technological industrialization, Apple's dominance in the global ecosystem and its production structure present significant challenges. The Foreign Direct Investment (FDI) Bargaining Model provides a relevant analytical framework, emphasizing that negotiation outcomes depend on the actors' capacities, interests, and distribution of political-economic power, which are often unequal (Stone et al., 2015).

This study uses a critical political economy approach to explicitly identify the structural constraints that shape Indonesia's bargaining power in FDI negotiations, particularly regarding the implementation of the Domestic Component Level (TKDN). The research questions asked are how the TKDN policy functions as a technology diplomacy instrument for Indonesia and what structural constraints limit the effectiveness of the TKDN in strengthening its bargaining position against Apple Inc. By analyzing policy documents and public discourse, this study shows that Apple's limited investment commitments in training and supporting facilities have not significantly supported national industrialization or technology transfer (Pratama & Adnyana, 2024).

These findings underscore the fundamental problem: the current TKDN policy has limited effectiveness due to the power imbalance with global companies, thus challenging Indonesia's technology diplomacy in achieving its strategic objectives. This study refines the structural dimension of the FDI Bargaining Model in the context of digital economy governance.

LITERATURE REVIEW

The Domestic Component Level (TKDN) policy is widely understood as an instrument of developing countries to stimulate foreign direct investment flows with the aim of domestic industrialization and the formation of national production capacity (Hufbauer et al., 2013). In the literature on the political economy of development, TKDN is positioned as a

mechanism to encourage industrial learning, selective import substitution, and strengthening linkages between multinational companies and domestic business actors (Amsden, 2001). Empirical studies show that the effectiveness of TKDN depends heavily on the country's institutional capacity to monitor compliance and coordinate supporting industrial policies such as vocational education and technological research (Moran, 2014).

In the context of developing countries, TKDN often face tensions between domestic development interests and commitments to an increasingly liberal global trade and investment regime (Figueiredo, 2022). The literature also confirms that global technology firms have a high degree of flexibility to negotiate non-productive forms of compliance, such as training programs or symbolic innovation centers, without undertaking strategic manufacturing relocations (Paus & Gallagher, 2007). Therefore, TKDN cannot be understood merely as a technical instrument, but rather as a political-economic arena that reflects the power relations between the state and global capital (Chang, 2010).

Technology diplomacy refers to a state's ability to manage strategic interactions with transnational technology actors to achieve economic, security, and digital sovereignty goals (Riordan, 2018). Within the framework of economic diplomacy, diplomatic capacity is not only determined by a country's formal bargaining position, but also by policy consistency, inter-institutional coordination, and regulatory credibility in the eyes of global investors (Okano-Heijmans, 2011). Studies of developing countries show that bureaucratic fragmentation and misalignment between industrial and trade agendas often weaken negotiating positions with technology multinationals (Weiss & Thurbon, 2018).

In the context of digital technology, information asymmetries and dependence on global ecosystems magnify diplomatic challenges, as platform companies have the capacity to move investment and innovation across jurisdictions rapidly (Zuboff, 2023). Critical political-economic literature emphasizes that without a technology diplomacy strategy integrated with long-term industrial policy, developing countries tend to be trapped in symbolic concessions that do not result in substantive technology transfer (Schneider, 2013). Thus, diplomatic capacity must be understood as a structural capability of the state, not simply the result of a single episode of negotiation (Evans, 2012).

The international political economy literature asserts that the main structural barriers in the FDI negotiations stem from the power asymmetry between developing countries and multinational corporations that control technology, capital, and global networks (Vernon, 1971). The obsolescing bargain model suggests that although a state's bargaining position may improve following inward investment, modern technology firms are able to maintain leverage through the mobility of intangible assets and control over intellectual property rights (Strange, 2020). Contemporary studies extend this argument by showing that global value chains and platform-based economies are increasingly weakening the regulatory capacity of developing countries (Lee et al., 2015).

The literature on foreign investment negotiations directly demonstrates that the bargaining position of developing countries vis-à-vis multinational corporations is largely determined by the asymmetrical power structures of the global economy. Kobrin asserts that globalization has eroded state capacity, particularly in the technology sector, as transnational corporations have the mobility of capital, technology, and production far beyond the control of host countries (Kobrin, 2009). In this context, the FDI bargaining model proposed by Vernon explains that the outcome of investment negotiations reflects the relative interdependence between the state and the investor, where the state requires capital and technology flows, while the firm will only commit to the extent that its global interests are not compromised (Vernon, 1971).

A follow-up study by Eden and Lenway shows that a state's success in extracting investment commitments depends not only on regulatory instruments but also on policy consistency and coordinated economic diplomacy, which can enhance the state's long-term credibility. In the case of Indonesia, the TKDN policy represents a protective strategy to encourage industrialization and technology transfer, but this policy is challenged by the global production logic of companies like Apple Inc. that rely on cross-border supply chains (Eden & Lenway, 2001). The mismatch between the ambitions of national technological integrity and the realities of the global production structure means that TKDN does not function as an effective bargaining tool, so that investment negotiations tend to produce unbalanced agreements and a lack of large investment commitments from multinational companies.

This study offers a conceptually distinct contribution from previous studies by integrating technology diplomacy, the FDI Bargaining Model, and a critical political-economic approach into a coherent analytical framework to explain the constrained outcome of investment negotiations between Indonesia and Apple Inc. Previous literature tends to discuss TKDN policy separately, either as a technocratic industrial regulatory instrument or as a protective policy assessed by the level of investor compliance, without placing it within the broader power relations between the state and transnational corporations (Eden & Lenway, 2001).

Other studies using the FDI Bargaining Model generally emphasize the economic negotiation aspect alone, but do not take into account the technological diplomacy dimension and the increasingly decisive dynamics of digital sovereignty in the high-tech sector. By filling this gap, this study shows that the constrained outcome of TKDN as a bargaining tool cannot be understood solely as a matter of policy design or domestic industrial capacity, but rather as a consequence of structural constraints within the global political economy that limit the room for developing countries to negotiate their technological interests (Vernon, 1971). The integration of these three approaches allows for a more comprehensive understanding of how the dominance of transnational corporations shapes the outcomes of technological diplomacy, thus providing a more in-depth and

critical explanation than previous studies, which were still theoretically fragmented (Kobrin, 2009).

While Vernon's model emphasizes relative interdependence between states and investors, developments in the digital economy suggest that this interdependence often takes the form of structural asymmetry (Sinambela et al., 2024; Womack, 2015). In high-technology sectors, multinational firms typically control critical assets such as intellectual property, platform ecosystems, and globally diversified production networks. These features provide firms with greater flexibility in determining where to invest, expand, or relocate operations. By contrast, the bargaining position of the state remains closely tied to domestic industrial capacity, regulatory credibility, and institutional coordination.

In the case of Indonesia and Apple Inc., this structural asymmetry becomes particularly evident. Although Indonesia exercises formal authority through the TKDN requirement, Apple retains the ability to adjust its production strategies across multiple jurisdictions. The negotiation, therefore, unfolds within an asymmetrical structural setting, where production mobility and technological concentration shape the limits of regulatory leverage. Recognizing this asymmetry helps explain why regulatory measures alone may struggle to secure core manufacturing commitments in high-technology industries.

This structural asymmetry generates practical constraints in the bargaining process. When one party possesses greater production mobility and control over critical technological assets, the other faces limits in translating formal regulatory authority into effective leverage. In this sense, structural constraints are not separate from asymmetry; they are the concrete expression of unequal positioning within global production networks. Recognizing this relationship provides a clearer basis for analyzing how regulatory instruments function in the Indonesia-Apple negotiation.

METHODS

This article uses a qualitative approach because the focus is directed at an in-depth understanding of the dynamics of technology diplomacy, power relations, and policy negotiation processes that cannot be reduced to mere numerical variables, but rather require interpretation of the context, actors, and meaning of policies (Creswell & Creswell, 2017). A qualitative approach was chosen to enable analysis of the interactions between states and multinational corporations in the high-tech sector, where economic interests, political strategies, and global structures are intertwined (Denzin & Lincoln, 2017). By design, this study adopts a descriptive qualitative study with a mechanism-based explanation orientation through process tracing, to explore how the TKDN policy is formulated, negotiated, and responded to by Apple Inc. within the framework of the FDI Bargaining Model (Yin, 2018). Process tracing was used to strengthen causal inference by identifying the sequence of events, decisions, and actor responses that link domestic policies to the

outcomes of limited investment negotiations, rather than claiming a deterministic cause-and-effect relationship (Beach & Pedersen, 2019).

The research data were collected through an analysis of policy documents and public discourse that formed the research corpus. This included approximately twelve government regulations and bylaws related to local content (TKDN) and the technology industry issued between 2020 and 2024, approximately twenty press releases and official statements from relevant ministries, eight public statements and official releases from Apple, and over thirty reports from major international and national media outlets, such as Reuters, Bloomberg, and Indonesian economic media outlets, selected based on their substantive relevance to the issue of technology investment negotiations (Bowen, 2009).

Document inclusion criteria were determined based on their direct relevance to local content policy, Apple's investment in Indonesia, and government technology diplomacy. Opinion documents without policy references or statements from key actors were excluded to maintain analytical rigor (Yin, 2018). The case study's timeframe is limited to the period 2020–2024 because it reflects the intensification of local content (TKDN) policy and the increasing negotiating pressure between the Indonesian government and Apple in the context of post-pandemic global supply chain restructuring (Gereffi & Fernandez, 2016).

Public discourse in this study is operationally defined as statements, narratives, and policy representations produced by state and corporate actors through official platforms and mainstream media, including ministry websites, Apple's official newsroom, and reputable international media reports with global reach and agenda-setting influence (Fairclough, 2015). Discourse sampling was conducted purposively, selecting texts that explicitly discussed local content (TKDN) demands, investment commitments, or Apple's strategic justifications for Indonesian policies, thus enabling an analysis of power relations and policy legitimacy in the public sphere (Wodak & Meyer, 2015). This approach aligns with a critical political economy perspective, which views discourse not simply as a reflection of policy but as a practice of power that shapes the boundaries of possible negotiations (Jessop, 2007).

The critical political economy approach in this study is operationalized through an examination of structural power indicators that influence Indonesia's bargaining position, including the country's level of dependence on global value chains, supply chain switching costs for Apple, the country's regulatory capacity to enforce industrial policies, and the credibility of threats and investment commitments that emerge in the negotiation process (Farrell & Newman, 2019). These indicators are analyzed to explain how global economic structures limit the effectiveness of national policies as bargaining tools, while also shaping the strategic preferences of multinational corporations in responding to regulatory pressures from developing countries (Strange, 2020).

Data analysis was conducted through thematic content analysis with systematic stages, starting with open coding of all documents to identify relevant units of meaning, followed by axial coding that links empirical findings to theoretical concepts such as

bargaining power, structural dependence, credible threats, and negotiation outcomes, and concluding with selective coding to construct a mechanism-based explanatory narrative (Braun & Clarke, 2006). The codebook was structured deductively and inductively, drawing on the FDI Bargaining Model and global political economy literature, ensuring that emerging themes were not only descriptive but also analytical and theoretical (Saldaña, 2025). Data validity was maintained through source triangulation by comparing policy documents, corporate statements, and media reports across countries to mitigate single-actor bias (Patton, 2015). Analytical consistency was strengthened by repeatedly matching empirical findings with the assumptions and causal mechanisms in the FDI Bargaining Model, ensuring that the resulting interpretations remained aligned with the research objectives and the theoretical framework employed (Beach & Pedersen, 2019). Through this methodological approach, the research provides a systematic and accountable basis for explaining why the TKDN policy is ineffective as an investment negotiation instrument in the Apple case, as well as how structural power imbalances in the global economy shape the limits of Indonesia's technology diplomacy.

RESULTS AND DISCUSSION

Mapping the FDI Bargaining Model in Indonesia-Apple Inc. Case

Before delving into the two main perspectives, the FDI Bargaining Model in this study is explicitly mapped to clarify the analytical logic. Indonesia's influence in negotiations stems from its large domestic market size, regulatory authority through TKDN policies, and the country's political legitimacy in regulating technology market access (World Bank Group, 2024). On the other hand, Apple Inc.'s influence stems from the flexibility of its global value chains, brand strength and closed technology ecosystem, and the availability of alternative production locations such as India and China, which already have mature manufacturing infrastructure (Gereffi & Fernandez, 2016). The bargaining process takes place through the exchange of TKDN demands, Apple's non-manufacturing investment offers, and government policy responses, ultimately resulting in limited investment in training and research without a commitment to manufacturing and full TKDN certification (Reuters, 2025a).

Table 1. An Empirical Timeline of Apple's Investment Negotiations in Indonesia (2020–2024)

Period	Empirical Evidence
2020	1. Implementation of strengthening TKDN policies in the ICT and digital devices sector
2022	1. Apple offers training investments and developer academies as a form of fulfilling its obligations.
2023	1. The government has confirmed the 40% TKDN target for high-tech devices.

2024	1. Manufacturing deal not reached; Apple investment remains non-production
2025	1. Apple expands manufacturing investments in India, not Indonesia

Source: Financial Times (2025); Oswaldo (2024); Kemenperin (2024)

Based on this empirical timeline, it can be seen that since 2020, the Indonesian government has begun strengthening the Domestic Component Level (TKDN) policy in the ICT and digital device sector as part of its industrialization and technology diplomacy strategy (Kemenperin, 2024). In response to this policy, in 2022, Apple Inc. proposed a form of compliance that focused on investing in human resource training and the development of the Apple Developer Academy, rather than building core manufacturing facilities (Oswaldo, 2024). In 2023, the Indonesian government firmly affirmed the 40 percent TKDN target for high-tech devices, including smartphones, further narrowing the room for compromise in investment negotiations (Kemenperin, 2024). As of 2024, these negotiations have not resulted in a manufacturing agreement, and Apple's investment in Indonesia remains at a non-production stage without major device assembly (Oswaldo, 2024). Meanwhile, in 2025, Apple actually expanded its manufacturing investment in India, indicating a shift in the company's strategy to a country with industrial readiness and policy certainty that is considered more supportive of the efficiency of its global supply chain (Financial Times, 2025).

Policy documents show that the Indonesian government consistently uses local content (TKDN) as the primary requirement for market access for foreign technology products, with the aim of encouraging technology transfer and strengthening the domestic industry (Kemenperin, 2024). Official government statements emphasize that the Indonesian market is positioned as a key leverage in negotiations, given the significant growth in Apple product users regionally (World Bank, 2013). However, reports from international institutions and economic media indicate that Indonesia's upstream and midstream industrial capacity is not yet fully ready to meet the high-tech production standards required by TKDN, particularly for precision components and the global supply chain (Reuters, 2025b).

Public statements and international media reports indicate that Apple considers manufacturing investments in Indonesia to have higher coordination costs and implementation risks than in India and China, particularly regarding policy certainty and bureaucratic efficiency (Financial Times, 2025). Apple has empirically chosen a phased investment strategy of human resource development and research, which formally fulfills minimal commitments but does not commit the company to supply chain relocation (Apple Newsroom, 2024). Global trade data indicates that Apple has significant flexibility to

relocate production to alternative jurisdictions without directly losing access to the Indonesian market (WITS, 2023).

Previous research on Indonesia's investment climate also points to regulatory inconsistency, governance imbalance, and tension within the TKDN framework as structural challenges affecting foreign investment outcomes. These research patterns help contextualize the constraints in the Apple negotiation.

Indonesian Perspective

Trade and consumption statistics show that Indonesia is one of the largest iPhone markets in Southeast Asia based on import value and number of premium device users (BPS, 2024). However, negotiation documents and media reports indicate that Apple has funded only limited investments in training facilities and development centers, significantly smaller than Apple's manufacturing investments in India and Vietnam (Reuters, 2025a). FDI literature also notes that multinational companies tend to choose lower-risk commitments when dealing with countries with perceived unstable industrial capacity (Narula & Dunning, 2010).

Global value chain studies show that the largest job creation in the technology industry occurs in the manufacturing and component production sectors, not in short-term training programs (Gereffi & Fernandez, 2016). As of 2024, there is no evidence of the construction of an iPhone production line in Indonesia, so the potential for large-scale job creation remains unrealized. In contrast, Vietnam has successfully attracted Apple's manufacturing investment through a more mature industrial ecosystem and supply chain integration, as documented in a regional comparison study (Siahaan et al., 2025).

Industrial policy literature suggests that local content policies are effective only if supported by competitive domestic suppliers, stringent production standards, and adequate manufacturing facilities (Stone et al., 2015). Policy and media reports indicate that Apple's bid for small-scale facilities, such as the AirTag factory in Batam, is not linked to the production of iPhones or other major devices (Ellis, 2024). Indonesia still faces logistical and supplier readiness challenges, while Apple maintains its supply chain in China and Vietnam (World Bank Group, 2024).

The Apple Developer Academy program in Indonesia focuses on software skills, while technology studies confirm that technological industrialization requires mastery of hardware and precision manufacturing processes (Tribowo, 2023). Empirical evidence suggests Indonesia lacks access to core production processes or collaborative research in Apple hardware (Hardiansyah, 2025).

Table 2. Comparison of Indonesian Market Scale and Apple's Investment Form

Indicator	Indonesia	India	Vietnam
Market size (premium smartphone users)	Very large	Large	Medium
Apple's investment form	Training & R&D	iPhone Manufacturing	Manufacturing & Components
Industrial added value	Low	High	High
Job creation	Limited	Significant	Significant
Supply chain integration	None	High	High

Source: BPS (2024); Financial Times (2025); Gereffi & Fernandez (2016); Reuters (2024a)

Table 2 demonstrates that market size alone does not guarantee bargaining leverage without supply chain depth and manufacturing readiness. The ineffectiveness of the Domestic Component Level (TKDN) policy as a leverage instrument in investment negotiations between Indonesia and Apple Inc. cannot be separated from the structural limitations of domestic industrial capacity (Narula & Dunning, 2010). Although Indonesia has a large consumer market and strong regulatory legitimacy, the absence of a high-tech manufacturing ecosystem, particularly in the production of precision components and global supply chain integration, makes the threat of market restrictions through TKDN lose its bargaining credibility (Vernon, 1971). Within the framework of the FDI bargaining model, the host country's position is weakened when policy demands are not supported by real implementation capabilities, so that multinational companies have room to delay or minimize investment commitments without incurring high economic costs (Narula & Dunning, 2010).

Apple Inc. Perspective

From Apple Inc.'s perspective, Indonesia's Domestic Component Level (TKDN) policy, which requires a minimum of 40% local components for every new HKT product, including the iPhone 16, significantly alters the company's investment calculations. Empirical evidence for this can be traced to the Indonesian government's statement reported by international media, which stated that TKDN certification cannot be granted if the investment does not include core manufacturing activities. In the report, the government stated that providing TKDN cannot be replaced by investment based on training or software development alone, so the iPhone 16 did not obtain certification for official marketing (Reuters, 2025a).

Official documents and statements cited by international media show that in its initial proposal to the Indonesian government, Apple committed approximately USD 100 million in investment focused on expanding the Apple Developer Academy, developing digital talent, and establishing a software research and innovation center. The proposal did not include plans to build an iPhone assembly facility or major hardware manufacturing facility (Financial Times, 2025). This pattern is consistent with Apple's investment practices in other countries, where the company has primarily located core manufacturing in locations with mature electronics industry ecosystems, such as China, India, and Vietnam (Reuters, 2025a).

Apple consciously chose an innovation-driven investment strategy as a low-risk form of engagement. Under the FDI Bargaining Model, this strategy reflects the company's efforts to maintain maximum flexibility while maintaining a presence in emerging markets (Kemenperin, 2024). Non-manufacturing investments allow Apple to meet some government expectations without having to relocate the high-value production processes that are a key source of its competitive advantage (Vernon, 1971; Reuters, 2024a).

The limited readiness of Indonesia's domestic industry is also reflected in the admissions of several government officials that the quality of the national supply chain, manufacturing precision, and logistics efficiency do not yet fully meet the standards for premium device production. While there are plans to build an AirTag facility and several supporting component factories, these investments are not categorized as core manufacturing within Apple's global production framework (Ramadhan, 2025).

Overall, in these negotiations, Indonesia relied on the size of its domestic market, its authority over TKDN certification, and political legitimacy as sources of leverage, while Apple relied on the flexibility of its global supply chain, its brand power, and the existence of alternative production sites (Reuters, 2024b). The bargaining process took place through Apple's offer of non-manufacturing investments and the government's refusal to certify, with the final result being the constrained outcome to reach a core manufacturing agreement and the delay in market access for the iPhone 16. These findings confirm that the constrained outcome of Indonesia's technology diplomacy cannot be understood solely as a technical policy issue, but rather as a consequence of the structural power imbalance between developing countries and global technology companies (Adam, 2022).

Table 3. Comparison of Determinants of Apple Manufacturing Investment in India, Vietnam, and Indonesia

Key Bargaining Variables For FDI	India	Vietnam	Indonesia
Apple Investment Status	Large-scale iPhone assembly base through Foxconn & Tata	Advanced component manufacturing and assembly base	No core manufacturing; focus on innovation & accessories
Electronics Supply	Very deep; hundreds of	Deep; integrated with	Shallow; precision

Chain Depth	Tier-1 and Tier-2 suppliers are established	the East Asian ecosystem	electronics suppliers are still limited
Precision Manufacturing Industry Readiness	High; meets Apple quality standards	High; component and assembly specialization	Low–medium; not yet consistent for premium products
Local Content Policy	Flexible and gradual, incentive-based	Adaptive and pro-investor	Rigid (TKDN 40%) and obligation-based
Regulatory Certainty	Relatively stable and coordinated	Very stable and consistent	High administrative uncertainty
Labor Costs and Productivity	Competitive at scale	Highly competitive and efficient	Higher precision output
Global Logistics Integration	Mature ports and manufacturing export routes	Strong integration with East Asia	Logistics not yet optimized for just-in-time
Country Leverage in Negotiations	High (market + manufacturing capacity)	High (efficiency + stability)	Limited (large market without manufacturing)
Production Relocation Risk for Apple	Low	Low	High
Negotiation Results	Apple Expands iPhone Production	Apple Deepens Manufacturing Base	Negotiations Stalled; Local Content Certification Stalled

Source: World Bank Group (2024); Gereffi & Fernandez (2016)

A comparison of the determinants of Apple Inc.'s manufacturing investment in India, Vietnam, and Indonesia shows that production location decisions are largely determined by a combination of industrial capacity, policy flexibility, and regulatory certainty (World Bank Group, 2024). India and Vietnam have both successfully attracted core manufacturing investment due to their deep electronics supply chains, a precision manufacturing industry that meets Apple's quality standards, and flexible, incentive-based local content policies, resulting in relatively low production relocation risks for companies (Financial Times, 2025). India benefits from its large market scale and mature manufacturing capacity, while Vietnam offers high efficiency, policy stability, and strong integration with the East Asian manufacturing ecosystem. In contrast, Indonesia, despite its large domestic market, still faces limitations in precision suppliers, inconsistent industrial readiness for premium products, and a rigid, obligation-based 40 percent local content policy, exacerbated by administrative and logistical uncertainties that are not yet optimal for a just-in-time system (World Bank Group, 2024). This condition makes Indonesia's bargaining power in FDI negotiations relatively limited and increases production risks for Apple, so that the results of the negotiations lead to stagnation of core manufacturing investment and the cessation of

local content certification, in contrast to the production expansion that occurred in India and the deepening of the manufacturing base in Vietnam, as reflected in global value chain studies and reports from international institutions (Financial Times, 2025).

Apple's response to these regulatory pressures demonstrates a different strategic preference. Rather than relocating or building a major manufacturing facility in Indonesia, Apple has submitted investment proposals focused on strengthening the innovation ecosystem, such as expanding the Apple Developer Academy and plans for an accessory production facility. Evidence from international media reports suggests this strategy is part of Apple's global pattern of separating investment from core manufacturing decisions, which remains prevalent in countries with mature supply chain infrastructure such as India and Vietnam (Reuters, 2025a).

This mismatch in expectations became even more apparent in late 2024 when the Indonesian government explicitly refused to count AirTag production facilities as meeting the local content requirement (TKDN) for iPhone products. This decision marked a turning point in the bargaining process, signaling the government's unwillingness to lower its industrial policy standards to maintain Apple's presence in the domestic market. From a process-tracing perspective, this moment can be understood as the primary causal mechanism leading to the negotiation deadlock, where regulatory instruments were used to their full potential but failed to result in a change in corporate strategy (Yin, 2018).

Bargaining Dynamics and Structural Constraints

The analysis of Indonesia's and Apple's perspectives demonstrates that the negotiation outcome was not merely the result of policy disagreement but rather the product of structural constraints embedded in the contemporary global political economy. Although Indonesia possesses formal regulatory authority through the 40% TKDN requirement and controls access to a large domestic consumer market, these instruments did not translate into effective bargaining leverage. Regulatory power proved insufficient in the absence of a mature high-technology manufacturing ecosystem, particularly in precision electronics, supplier depth, and integration into global value chains. Within the logic of the FDI Bargaining Model, leverage becomes credible only when supported by institutional capacity and industrial readiness. In this case, the gap between regulatory ambition and domestic production capability weakened Indonesia's ability to secure core manufacturing commitments.

At the same time, Apple's embeddedness in transnational production networks significantly constrained Indonesia's bargaining influence. The company's ability to expand or relocate manufacturing activities to alternative jurisdictions such as India and Vietnam reduced the economic cost of resisting regulatory pressure in Indonesia. In the digital economy, multinational technology firms retain control over high-value segments of production through intellectual property rights, platform ecosystems, and globally

coordinated supply chains. This structural mobility enhances corporate strategic flexibility and limits the effectiveness of territorially bounded policy instruments such as local content requirements. Market size alone, therefore, was insufficient to offset the advantages generated by global production mobility.

The negotiated outcome, limited investment in training programs, developer academies, and non-core accessory facilities, reflects a compromise shaped by unequal structural positions rather than a process of mutual industrial upgrading. While these initiatives contribute to human capital formation, they do not constitute substantive technology transfer in terms of core production capabilities or supply chain integration. From a bargaining perspective, the result represents symbolic compliance: Indonesia maintained its regulatory principles, yet Apple preserved autonomy over its core manufacturing decisions. The stalled negotiations thus reveal how structural asymmetry in global production networks conditions the limits of technology diplomacy in developing countries.

Taken together, these bargaining dynamics illustrate that the effectiveness of local content policies cannot be reduced to regulatory design alone, but is shaped by the alignment between industrial capacity, institutional coherence, and the structural configuration of global value chains. Without credible production depth and coordinated state capacity, technology diplomacy risks remaining normative in aspiration rather than transformative in outcome.

CONCLUSIONS

This article demonstrates that the unresolved manufacturing agreement between Indonesia and Apple Inc. cannot be explained simply as a matter of regulatory enforcement, but rather as the outcome of structurally conditioned bargaining dynamics. Within the framework of the FDI Bargaining Model, the 40% TKDN requirement did not generate effective leverage because the regulatory authority was not matched by sufficient industrial depth, supply chain integration, and institutional coordination. The case illustrates how market size and formal policy control are insufficient sources of bargaining power when not supported by credible production capacity.

At the same time, Apple's embeddedness in global value chains and its ability to reallocate production across jurisdictions significantly reduced the economic costs of resisting local content pressure. The negotiation outcome, limited investment in training programs and non-core facilities, reflects a structurally asymmetric compromise rather than substantive industrial upgrading. In this context, technology diplomacy emerges not as a discrete negotiation episode but as a long-term structural capability that depends on the alignment between industrial readiness, regulatory credibility, and strategic coordination.

Theoretically, this study refines the structural dimension of the FDI Bargaining Model in the context of digital economy governance. It shows that in sectors characterized by high

production mobility and technological concentration, bargaining outcomes are shaped less by formal regulatory instruments and more by the relative positioning of states and firms within global production networks. For developing countries, protective policies such as local content requirements can function as credible leverage only when embedded within a coherent industrial ecosystem capable of supporting core manufacturing commitments.

This study is subject to several limitations that should be acknowledged. The analysis relies primarily on publicly available policy documents, official corporate statements, and reputable media reports, which limit access to confidential negotiation records and internal strategic deliberations between the Indonesian government and Apple Inc. As a result, certain bargaining calculations and informal diplomatic exchanges may not be fully captured. In addition, the timeframe of the study is confined to the 2020-2024 negotiation period, focusing on the immediate policy confrontation surrounding the TKDN requirement rather than the long-term evolution of Indonesia's industrial upgrading strategy. Future research could strengthen the analysis through elite interviews, firm-level industrial data, or comparative case studies involving other multinational technology firms operating under similar local content regimes.

The findings suggest that strengthening technology diplomacy requires a shift from regulatory authority to structural preparation. Rather than relying primarily on rigid local content thresholds, Indonesia could adopt a phased compliance model that links gradual TKDN targets with measurable milestones in supplier development and industrial upgrading. A hybrid compliance framework, combining innovation-based investment with progressive manufacturing commitments, may provide a more credible pathway toward technology transfer while reducing perceived investor risk. Furthermore, improving inter-ministerial coordination and regulatory predictability would enhance the credibility of state commitments in high-stakes investment negotiations. Most importantly, local content enforcement should be sequenced alongside the development of precision manufacturing capacity, supply chain depth, and vocational-industrial integration. Without parallel strengthening of domestic production ecosystems, local content policies risk functioning as normative aspirations rather than effective bargaining instruments in the digital economy.

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