DE FACTO CONTROL: APPLYING GAME THEORY TO THE LAW ON CORPORATE NATIONALITY*

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ABSTRACT

The nationality of stockholders holding majority voting rights can determine a corporation's capacity to engage in partially nationalized economic activities. However, minority stockholders can hold a degree of voting power higher than what their shareholding size might suggest. This makes it possible for a foreign minority stockholder to have "effective control" of a "Philippine national" which passes the Control Test. This paper seeks to reexamine the basic premise that the absolute voting weight reflects actual voting power, and proposes a new way to measure control. Applying the concept of a voting power index in cooperative game theory, a stricter form of the Control Test emerges. Each corporate structure should be analyzed based on multiple factors that determine the true nature of voting power, namely: (i) the number of stockholders, (ii) the minimum votes required to pass a stockholder resolution, (iii) the amount of voting rights held by one stockholder in relation to other stockholders, (iv) the possibility of forming a coalition of stockholders, (v) the number of times that a stockholder can be a swing voter, and (vi) the size of the public float. The latter section of this paper applies this more rigorous test to the *Gamboa v. Teves* and *Narra Nickel Mining v. Redmont Consolidated Mines Corporation* rulings to demonstrate how it more accurately measures effective control.

One unexamined assumption in foreign ownership regulation is the notion that majority voting rights translate to "effective control."[1] This assumption is so deeply entrenched in foreign investments law that possession

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[1] Gamboa v. Teves [hereinafter "Gamboa"], G.R. No. 176579, 682 SCRA 398, Oct. 9, 2012.

of majority voting rights can determine the nationality of a corporation and its capacity to engage in partially nationalized economic activities.[2] The fact, however, is that minority stockholders can possess a degree of voting power higher than what their shareholding size might suggest.[3] Voting power is not the same as voting weight—it is not measured simply by the proportion or number of votes a stockholder may cast in a stockholder meeting.[4]

An example is a voting situation requiring a simple majority (51%) with stockholders P1, P2 and P3 having 50%, 49% and 1% voting weights, respectively.[5] While intuition might tell us that P2 has a disproportionate degree of control compared to P3, it is not true that P2 has more "effective" voting power than P3. And while intuition might also tell us that the 1% difference in voting rights between P1 and P2 is insubstantial, P1 still wields a more significant degree of control compared to P2.[6]

First, note that none of the stockholders can single-handedly pass a motion, and that we have no prior knowledge of their preferences in forming alliances. Thus, it is fair to assume that each stockholder is equally likely to form a coalition with any other stockholder, which means a coalition between P1 and P2 is just as likely to form as a coalition between P2 and P3, and between P1 and P3.[7] All the possible winning coalitions are: {P1, P2}, {P1, P3}, and {P1, P2, P3}.

Second, note that P1 only needs one more vote to muster the required minimum votes to pass a desired stockholder resolution, and it is a matter of indifference to P1 whether that vote comes from P2 or P3.

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[2] The foreign equity limitation "must [likewise] apply separately to each class of shares, whether common, preferred non-voting, preferred voting or any other class of shares." *Gamboa*, 682 SCRA 398, 445.

[3] Dennis Leech, *Shareholder Voting Power and Corporate Governance: A Study of Large British Companies*, 27 NORDIC J. OF POL. ECON. 1, 33-54 (2001).

[4] Manfred Holler, *Forming Coalitions and Measuring Voting Power*, 30 POL. STUD. 262, 270 (1982).

[5] A classic example in introductions to weighted voting systems. *See* Ron Cytron & Maggie Penn, *Fair Division in Theory and Practice*, *available at* http://www.cs.wustl.edu/~cytron/fdiv/PDFs/8.pdf (last visited Aug. 16, 2016).

[6] "On the one hand, a principal shareholder is declared dominant if she controls a simple majority. However, relying solely on this criterion would be very susceptible to type II error because any dominating minority bloc holder would be ignored." Stefan Prigge & Sven Kehren, [hereinafter "Prigge"] *Ownership Structure Metrics*, *in* INTERNATIONAL CORPORATE GOVERNANCE AFTER SARBANES-OXLEY 218-9 (Paul Ali, Greg Gregoriou, eds., 1996).

[7] Applying the principle of *a priori* probability in weighted voting systems. *See* Hans Stenlund & Jan-Erik Lane, *The Structure of Voting-Power Indices*, 18 QUALITY & QUANTITY 367-75 (1984).

Third, P2 cannot prevail if he forms an alliance with P3 alone. P1 is a swing voter in all three instances, while P2 is a swing voter in only one instance. By "swing voter", we mean a voter who can make a coalition lose by dropping out of the coalition.[8] P2 cannot block a motion by P1 once the latter forms an alliance with P3. P2 cannot make the grand coalition of all three stockholders lose by dropping out. In this context, P2 is in the same position as P3.

There is no doubt, therefore, that P1 has voting power disproportionately larger than P2, and we are only talking about a difference of 1% in voting rights between them. There is also no doubt that P2 has voting power equivalent to that of P3, even though they have a seemingly substantial difference of 48% voting rights. This simple voting situation demonstrates that voting weight has a non-linear relationship with actual voting power.[9] Clearly, "the largest shareholders are not always winners, nor are the smaller shareholders predestined losers."[10]

I. THE LIMITS OF THE CONTROL TEST

A share of stock represents a bundle of stockholder rights[11] which include economic rights and control rights.[12] Economic rights pertain to pecuniary interests, such as the right to dividends, the right to sell shares, and the right to a portion of the net asset value upon dissolution and liquidation of the company.[13] Control rights, on the other hand, allow stockholders to participate in making business decisions. These are expressed in terms of

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[8] Andrew Gelman, Jonathan N. Katz & Francis Tuerlinckx, *The Mathematics and Statistics of Voting Power*, 17 STAT. SCI. 420 (2002).

[9] For a discussion on the formal properties of voting power measurements, *see* Manfred J. Holler & Stefan Napel, *Monotonicity of Power and Power Measures*, 56 THEORY AND DECISION 93 (2004).

[10] Norkhairul Hafiz Bajuri, Shanti Chakravarty & Noor Hazarina Hashim, *Analysis of Corporate Control: Can the Voting Power Index Outshine Shareholding Size?*, 10 ASIAN ACADEMY OF MGMT. J. OF ACCT. AND FIN. 75, 77 (2014).

[11] "Securities are a bundle of rights that investor have against issuers." *See* Eva Micheler, *Custody Chains and Remoteness: Disconnecting Investors from Issuers*, at 2 (July 2014), *published by* the Systemic Risk Centre of the London School of Economics and Political Science as part of the Systemic Risk Centre's Discussion Paper Series.

[12] Henry T. C. Hu & Bernard Black, *Debt, Equity and Hybrid Decoupling: Governance and Systemic Risk Implications*, 14 EUROPEAN FIN. MGMT. 663, 664 (2008).

[13] Economic rights are also called "cash flow rights". *See* Siddarth Mohan Ranade, *Separation of Voting Rights from Cash-Flow Rights in Corporate Law: In Search of the Optimal* (2013), *available at* http://ssrn.com/abstract=2246757.

voting rights in stockholder meetings, where one share of stock is usually equal to one vote.[14] Increasing the number of shares (i.e. the shareholding size) leads to an increase in economic and control rights. In the case of economic rights, the increase is linear and positively correlated. Hence, in a corporation declaring dividends, having 10% shareholding size entitles the stockholder to 10% of the total dividends declared, 20% shareholding size entitles him to 20%, and so on.

This notion may erroneously lead us to assume that the relationship between shareholding size and control rights is also linear and positively correlated. However, when we increase shareholding size, control rights do not necessarily increase in the same manner as economic rights. This assaults our basic intuition about the nature of control rights because we know that a higher number of shares results in higher voting weight.

A. Deconstructing the Premise

Based on the simple voting situation we have shown, we see that examining and comparing the voting weights of stockholders does not give a true description of their voting power. This is because *voting weight is not equivalent to voting power.*[15] The 1% voting weight difference between P1 and P2 makes a true difference in determining the outcome of the stockholder meeting in a way that the 48% difference between P2 and P3 does not. An increase in 1% shareholding size may result in an equivalent increase of 1% voting weight, but it does not necessarily result in an increase of 1% voting power. This leads to anomalous situations where foreign minority stockholders have *de facto* control of a Filipino corporation engaged in a partially nationalized economic activity, effectively subverting the nationalist policy of the 1987 Constitution and *Gamboa vs. Teves* (hereinafter "Gamboa") on foreign equity limitations.[16]

In the example, assume that P3 is a foreigner and the Filipino corporation is engaged in an industry with 20% foreign equity limitation. While P3's voting weight of 1% falls comfortably below the equity cap, P3

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[14] Control rights are also called "voting rights", since it is through the exercise of formal voting power that stockholders can pass shareholder resolutions. *See also* Liping Dong, Konari Uchida & Xiaohong Hou, *How Do Corporate Control Rights Transactions Create Shareholder Value? Evidence from China* (2014), *available at* http://ssrn.com/abstract=2396514.

[15] Dennis Leech & Miguel Manjón, *Corporate Governance and Game Theoretic Analyses of Shareholder Power: The Case of Spain*, 35 APPLIED ECON. 847 (2003).

[16] *See* Exec. Order No. 858 (2010). This provides for foreign equity restrictions in various industries.

has a *de facto* or effective control of 25%, equal to P2.[17] In the succeeding sections, we shall propose and demonstrate a method for calculating "effective control" based on given voting thresholds and voting weights. We shall also show instances where a foreign minority stockholder's "effective control" appears to comply with foreign equity caps, but has a "real" voting power grossly beyond the allowable threshold.

This problem exists because the Control Test equates voting power with voting weight,[18] when the fact is that voting weight can be higher than or less than the actual voting power of stockholders.[19] By overstating or understating voting power, the Control Test permits situations where a Philippine national is actually controlled by foreign stockholders, or a foreign national is effectively controlled by Filipino stockholders. By relying solely on the "absolute"[20] voting weight of one stockholder, the Control Test fails to consider a host of factors that may determine the true nature of voting power, namely:

(1) Number of stockholders;
(2) Minimum votes required to pass a stockholder resolution;
(3) Amount of voting rights held by one stockholder in relation to other stockholders;
(4) Possibility of forming a coalition of stockholders;
(5) Number of times that a stockholder can be a swing voter; and
(6) The size of the public float, if any.[21]

B. Foreign Control of Strategic Industries as a Geopolitical Risk

Why should *de facto* foreign control of sensitive economic activities be a concern for the Philippines? Developed nations like Australia, Canada, the United Kingdom, and the United States operate under a system of free trade,

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[17] We derived this figure using the Banzhaf Voting Power Index. *See* Philip Straffin, Jr., *The Shapley-Shubik and Banzhaf Power Indices as Probabilities*, *in* THE SHAPLEY VALUE: ESSAYS IN HONOR OF LLOYD S. SHAPLEY 71-81 (Alvin E. Roth ed. 1988).

[18] *Gamboa*, 682 SCRA 398.

[19] Straffin, *supra* note 17.

[20] As opposed to "relative" voting weight. The absolute voting weight looks at the shareholding size of one stockholder, while relative voting weight looks at the distribution of voting weights among all stockholders.

[21] "[T]he power of the principal shareholder is determined not only by his share of votes, but also by the absolute and relative shares of votes held by the remaining bloc holders, the free float, and the majority rule. *See, generally,* Prigge, *supra* note 6, at 201-3.

where foreign ownership limitations and other citizenship purity protocols in economic activities are considered sources of market distortions and inefficiencies.[22] For these countries, it is a matter of indifference whether corporations operating vital industries are foreign- or domestic-owned.

There is strong political pressure in the Philippines to relax its laws on foreign investment limitations. In August 2016, newly-elected President Rodrigo Duterte expressed openness to a constitutional amendment to ease foreign ownership restrictions imposed by the 1987 Constitution in land ownership, the exploitation, development and utilization of natural resources, and the operation of public utilities.[23]

The reality, however, is that foreign control of sensitive economic activities is a major source of geopolitical risk. Even developed nations operating under a free trade regime are now beginning to recognize this:

> Increasingly, corporations are political tools used by nations to exert influence over other nations. In times of peace and economic prosperity, foreign control of strategic industries and infrastructure may not be an immediate threat. But during major economic recessions — or, worse, times of geopolitical upheaval and war — the loss of ownership and full control of national industries can be catastrophic.[24]

One example is the Russia-Ukraine gas dispute in 2006. Gazprom, a Russian-owned gas company, wanted to increase the price of oil passing through the Ukraine from USD 50 to USD 230 per 1,000 cubic meters. The Ukraine rejected the offer. In response, Gazprom cut off the Ukraine's gas supply, causing a shortage in the whole European Union. Many believed that it was not a purely commercial dispute, and that it was an instance where a "foreign company's decisions bec[a]me an extension of the [foreign] government's policy decisions rather than the company's commercial interests."[25]

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[22] The Trumpet, *Airbus and the Perils of Foreign Ownership*, Oct. 26, 2006, *at* https://www.thetrumpet.com/article/2969.2.0.0/world/globalization/airbus-and-the-perils-of-foreign-ownership.

[23] Agence France-Presse, *Duterte wants to open Philippines to foreign investors: aide*, ABS-CBN NEWS, May 13, 2016, *at* http://news.abs-cbn.com/business/05/12/16/duterte-wants-to-open-philippines-to-foreign-investors-aide (last accessed Nov. 15, 2016).

[24] The Trumpet, *supra* note 22.

[25] Jonathan Masters, *Foreign Investment and U.S. National Security*, *Council on Foreign Relations*, Sept. 27, 2013, *at* http://www.cfr.org/foreign-direct-investment/foreign-investme

In the same year, there was a national security debate in the US concerning the attempted foreign takeover of six major seaports by Dubai Ports World, a government-owned corporation based in the United Arab Emirates. Many national security analysts believed that this would render the US susceptible to terrorist attacks, considering the large number of containers entering the US and the possibility of importing illegal weapons and international transport of terrorists. This led to the passage of the Foreign Investment and National Security Act of 2007, which strengthens the power of the US government to review foreign investments in strategic industries.[26]

Another example is the rise of Rosatom, a Russian-owned nuclear corporation. Rosatom operates in 40 countries, including countries like Turkey, Armenia, Finland, Belarus, Vietnam, Bangladesh, India and China, and has 29 ongoing global projects. Many believe that Rosatom is pivotal in Russia's nuclear diplomacy.[27]

As of October 2016, sovereign wealth funds ("SWFs")—government-owned foreign investment vehicles—are operating with 7.39 trillion US dollars worth of assets all over the world. This raises several national security concerns for host countries receiving their investments, including the "destabilization of the financial markets (to the detriment of the host country), protection of SWF home-country industries at the expense of the host country's industries, and the expropriation of technology[.]"[28] One of the criticisms against SWFs is that most of them are based in authoritarian regimes facing risks of political instability, and that these funds could be utilized to further their international political agenda.

The Philippines is in the midst of a geopolitical game involving China, the US, and Russia. It is not far-fetched to imagine that foreign investments will play a crucial role in the brinkmanship of world superpowers in their struggle to protect their maritime interests. With the aim of pursuing an independent foreign policy, President Duterte announced forming economic alliances with China and Russia. The development of vital infrastructure projects like railways and seaports is envisioned to result from such economic

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nt-us-national-security/p31477, *citing* ALAN P. LARSON & DAVID M. MARCHICK, COUNCIL OF FOREIGN RELATIONS, *Foreign Investment and National Security* 21 (2006).

[26] *See* Deborah Mostaghel, *Dubai Ports World under Exon-Florio: A Threat to National Security or a Tempest in a Seaport?*, 70 ALB. L. REV. 583 (2007).

[27] Boyan Dobrev, *Rosatom & Russia's Nuclear Diplomacy*, GEOPOLITICAL MONITOR, May 17, 2016, *at* https://www.geopoliticalmonitor.com/rosatom-russias-nuclear-diplomacy.

[28] Thomas Hemphill, *Sovereign Wealth Funds: National Security Risks in a Global Free Trade Environment*, 51 THUNDERBIRD INT'L REV. 551, 551 (2009).

alliances. This makes the analysis of who has *de facto* control of corporations all the more urgent.

II. THE STOCKHOLDER MEETING AS A WEIGHTED VOTING GAME

We can remedy the limitations of the Control Test by adopting multiple-factor voting power measurements, such as the Banzhaf Voting Power Index in the field of cooperative game theory. We shall begin by modeling a traditional stockholder meeting as a weighted voting game.

A. Intra-Corporate Voting

There are two voting systems in Philippine corporation law: the one person-one vote system and the one share-one vote system.[29] In the former system, all voters have equal voting power.[30] This is the default situation in board meetings where each board member present is entitled to only one vote, regardless of whether or not he is a nominee of a stockholder having disproportionate ownership interest in the corporation.[31] The same default rule applies in non-stock corporations where each member is entitled to only one vote unless otherwise provided in the by-laws.[32]

In the one share-one vote system, a voter can have higher or lesser voting power compared to others depending on the number of voting shares held.[33] This is the rule in stockholder meetings of stock corporations where different percentage holdings yield different number of votes per stockholder.[34] This is also the rule where fundamental matters require the participation of preferred shareholders.[35]

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[29] *See, e.g.* CORP. CODE, §§ 16, 24, 28, 32, 37, 40, 44, 46, 48, 77, 118, and 119.

[30] Jurij Toplak, *Equal Voting Weight of All: Finally 'One Person, One Vote' from Hawaii to Maine?*, 81 TEMP. L. REV. 123, 143-4 (2008), *citing* Wesberry v. Sanders, 376 US 1, 7-8 (1964).

[31] This is without prejudice to the power of the corporation to adopt by-laws prescribing the manner of voting. *See* CORP. CODE, § 46.

[32] "Unless so limited, broadened or denied, each member, regardless of class, shall be entitled to one vote." CORP. CODE, § 89.

[33] Guido Ferrarini, *One Share - One Vote: A European Rule?*, 3 ECFR 147 (2006).

[34] A corollary to the rule that "each share shall be equal in all respects to every other share." *See* CORP. CODE, § 46.

[35] Since the Corporation Code reserves voting rights to preferred shareholders in special voting situations, and the so-called "non-voting" shares are not absolutely divested of voting rights, we shall not confine the concept of "voting power" to common stockholders. *See* CORP. CODE, § 6.

In the one person-one vote system, only two elements are important in determining the results of a voting situation: the number of voters and the minimum number of votes required to pass a resolution.[36] In the one share-one vote system, one additional element is essential: the number of votes that each voter is entitled to cast.[37]

Three variables qualify the one share-one vote system in stockholder meetings as a weighted voting game: the *players*, the *quota*, and the *weight*.[38] The *players* represent the stockholders entitled to vote.[39] The *quota* denotes the minimum number of votes required to pass a stockholder resolution.[40] It is otherwise called the decision threshold, which may be majority (51%), super-majority (67%), unanimous (100%), or any other threshold specified in the by-laws.[41] The *weight* is the number of votes that each player is entitled to cast. It is otherwise called the "shareholding size."[42] A *game* represents a voting situation involving only two alternative motions: "yes" and "no," where "abstain" is counted as "no."

B. The Weighted Voting Game

The one person-one vote system can evolve into a weighted voting game, and a weighted voting game can evolve into a one person-one vote system. We consider two scenarios.

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[36] Toplak, *supra* note 30.

[37] "Voting rights ceilings limit the number of votes that a shareholder can cast irrespective of the number of voting shares she owns. That is, all shares held in excess of the ceiling lose their votes, which can drive a wedge between the cash flow rights and the voting rights of a blockholder." Mike Burkart & Samuel Lee, *The One Share - One Vote Debate: A Theoretical Perspective*, ECGI - Finance Working Paper No. 176, at 33 (2007), *at* http://ssrn.com/abstract=987486.

[38] Stefan Prigge, *The Performance of Measures of Shareholder Influence* (2007), *at* http://ssrn.com/abstract=966086.

[39] Gianfranco Gambarelli, *Power Indices for Political and Financial Decision Making: A Review*, 51 ANNALS OF OPERATIONS RES. 163, 166 (1994).

[40] Imelda Yeung Powers, *A Game-theoretic Model of Corporate Takeovers by Major Stockholders*, 33 MGMT. SCI. 467 (1987).

[41] CORP. CODE, § 46.

[42] Andre Casajus, Helfried Labrenz, & Tobias Hiller, *Majority Shareholder Protection by Variable Qualified Majority Rules*, 28 EUROPEAN J. OF L. & ECON. 9, 14-6 (2009).

1. When the One Person-One Vote System Becomes a Weighted Voting Game

In a one person-one vote system, the concept of weight is immaterial if viewed from the perspective of individual voters. Voting power is represented as 1N where N is the total number of players. Thus, if N=10, the voting power of P1 is 10%, which is the same for all other players. The concept of weight becomes material only if a group of voters is conceived as a coalition, in which case the one person-one vote system also becomes a weighted voting game from the perspective of the coalition of voters.[43] We consider each coalition as a single player, and the weight is the number of voters in a coalition.[44]

Thus, in a board of directors composed of six Filipinos and four foreigners, the Filipino coalition has 60% weight and the foreign coalition has 40% weight.[45] Here we have a situation where a board meeting, which is a one person-one vote system, is reconfigured as a weighted voting game.

2. When a Weighted Voting Game Becomes a One Person-One Vote System

If all players are required to have one vote to pass a stockholder resolution, then the weights become immaterial, just like in a one person-one vote system.[46] This is the case where no individual player or coalition of players can muster enough votes to meet the quota, except the grand coalition of all players. In short, the voting situation *de facto* requires a unanimous vote.

Hence, given stockholders P1, P2 and P3 with respective weights of 60%, 20% and 20%, and a quota of 81% votes, P1 will always require the votes of P2 and P3 to pass a stockholder resolution. The {60%, 20%, 20%} voting weight distribution is irrelevant because even though two stockholders form a coalition, they cannot muster 81% of the requisite votes. It is as though

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[43] Alan Taylor & William Zwicker, *A Characterization of Weighted Voting*, 115 PROC. OF THE AMERICAN MATHEMATICAL SOC'Y 1089 (1992).

[44] William Lucas, *Measuring Power in Weighted Voting Systems*, *in* POLITICAL AND RELATED MODELS 186 (Steven Brams, et al., eds., 1983).

[45] Accordingly, we can also apply the concept of "voting power" as discussed in this article whenever we conceive the board of directors as a coalition of Filipino and foreign directors.

[46] Russell Feingold, Essay, *Representative Democracy versus Corporate Democracy: How Soft Money Erodes the Principle of One Person, One Vote*, 35 HARV. J. ON LEGIS. 377 (1998).

the voting power of each player is 1/3, or more generally, 1N, which is precisely the voting power formula in a one person-one vote system.

III. MODELING THE STOCKHOLDER MEETING AS A WEIGHTED VOTING GAME

In modeling the stockholder meeting as a weighted voting game, the absolute voting weight of one stockholder is not a sufficient indicator of his voting power.[47] To accurately describe the stockholder's voting power, it is necessary to consider how all the pertinent variables of a weighted voting game (the number of players, the quota, the weight, and the coalitions) relate to one another.[48] To facilitate the discussion, we shall adopt the formal notation of a weighted voting game to represent a stockholder meeting, as follows:

$$\{q: w_1, w_2 \ldots w_N\}$$

In this notation, q represents the quota; q: w_1, w_2 ... w_N represents the individual stockholders with their respective voting weights; and N is the total number of stockholders.

Hence, in a stockholder meeting requiring a simple majority or 51% to pass a resolution, with five stockholders having a percentage holding distribution of 50%, 25%, 10%, 10% and 5%, the voting game is expressed as {51: 50, 25, 10, 10, 5}. In a stockholder meeting requiring 2/3 or 67% votes to pass a resolution, given the same players and weights, the voting game is expressed as {67: 50, 25, 10, 10, 5}.[49]

A. The Stockholders as Players

For every stockholder meeting, there are three possible types of voting stockholders: a "dictator," a "dummy," and a player with veto power. A dictator has the power to pass a resolution single-handedly. A dummy is one whose voting power is immaterial in passing a resolution. A player with

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[47] *See* Xiaoying Chen & Amit K. Sinha, *Two Proxies for Shareholder Influence: A Case of Payout Policy*, 10 (2009), *available at* http://ssrn.com/abstract=1522504.

[48] Dennis Leech, *An Empirical Comparison of the Performance of Classical Power Indices*, 50 POL. STUD. 1 (2002).

[49] Adopting the same convention used in voting power literature. *See* Prakash P. Shenoy, *The Banzhaf Power Index for Political Games*, 2 MATHEMATICAL SOC. SCIENCES 299 (1982).

veto power is one whose vote is indispensable to pass a resolution, but cannot pass a resolution single-handedly.[50]

The dictator status represents the highest degree of control possible in a given voting situation.[51] The dummy represents the lowest possible degree of control.[52] Veto power represents joint or equal control shared between or among stockholders.[53] The commonality underlying these three types of stockholders is that their respective degrees of control are not solely determined by voting weight.[54] This demonstrates the notion that voting weight alone is not the sole factor of voting power.[55]

We shall examine each of these stockholder types in the succeeding sections. We shall also demonstrate the inadequacy of voting weight in determining dictator or dummy status and the presence of veto power.

1. Dictator Stockholders

A stockholder with a sufficiently large voting weight to pass a resolution single-handedly renders the voting weight and voting power of other stockholders immaterial.[56] This "dictator" status satisfies the following condition in a stockholder meeting:

$$w_i \geq q$$

The voting weight (w_i) of a stockholder must be equal to or higher than the quota (q_i).[57] This suggests that voting weight alone is insufficient information to conclude that a stockholder has dictator status. The decision threshold, which may be a simple majority (51%), super-majority (2/3 or 67%) or unanimous vote (100%), is a critical element. Consider the following voting situations in a stockholder meeting:

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[50] Christopher H. Nevison, Barbara Zicht, & Suzanne Schoepke, Critique and Comment, *A Naive Approach to the Banzhaf Index of Power*, 23 BEHAV. SCI. 130 (1978).

[51] *See* Pradeep Dubey & Lloyd Shapley, *Mathematical Properties of the Banzhaf Power Index*, 4 MATHEMATICS OF OPERATIONS RES., 102 (1979).

[52] *Id.*

[53] *Id.* at 103.

[54] Dennis Leech, *Voting Power in the Governance of the International Monetary Fund*, 109 ANNALS OF OPERATIONS RES. 375 (2002).

[55] Dans S. Felsenthal & Moshe Machover, *A Priori Voting Power: What Is It All About?*, 2 POL. STUD. REV. 1 (2004).

[56] Lei Yang & Youmin Xi, *The Distribution of Power Among Group Decision Makers*, 6 J. SYS. SCI. AND SYS. ENGINEERING 326 (1997).

[57] *Id.*

1. {51: 51, 49}
2. {67: 51, 49}
3. {100: 99, 1}

In the first example, the quota is 51%, with stockholders P1 and P2 having 51% and 49% voting rights, respectively. Since P1 can single-handedly pass a resolution, he has dictator status in a voting game. The situation is effectively the same as a voting situation with a {100: 100, 0} voting power distribution. P1 has an effective voting power of 100% because he does not need the cooperation of P2 to muster enough votes in a stockholder meeting. And while the 49% voting rights of P2 may appear to be a considerable amount of voting power, P2 has an effective voting power of only 0% because his vote will never be relevant in determining the outcome of the stockholder meeting. In short, it does not matter whether P2 has 0% or 49% voting rights, or any arbitrary shareholding size between 0% and 49%, as long as P1's voting weight is equal to or greater than the quota of 51%.

In the second example, the quota is a super-majority requirement of 2/3 votes or 67% with stockholders P1 and P2 having the same voting rights as in the first example. The only difference between the first and second examples is the quota. However, this difference makes P1 lose dictator status. In fact, P1 and P2 have joint control in the corporation, with an effective voting power distribution of {100: 50, 50}. It is not important whether P1's voting weight of 51% is higher than P2's voting weight of 49%. The voting rights differential of 2% is irrelevant in determining the outcome of the stockholder meeting.

In the third example, the quota requires a unanimous vote, with stockholder P1 having 99% voting rights and P2 having 1% voting rights. Their percentage holdings differ by a wide margin. However, considering the quota of 100%, their effective voting power distribution is {100: 50, 50}, which is the same as the effective voting power distribution in the second example. In the second example, the difference in voting rights is 2%. In the third example, the difference is 98%. These differences, however, are immaterial in determining the final outcome of the stockholder meeting. P2's 1% voting weight is indispensable in passing a stockholder resolution.

The differences in voting weight distribution and effective voting power distribution in the three scenarios are summarized, as follows:

TABLE 1

Voting Weight Distribution	Voting Power Distribution
{51: 51, 49}	{100: 100, 0}
{67: 51, 49}	{100: 50, 50}
{100: 99, 1}	{100: 50, 50}

The left column describes the *de jure* allocation of control in the corporation which uses "voting weight" as a criterion, while the right column describes the *de facto* allocation of control, which uses the concept of "voting power."[58]

In these examples, only the first scenario has a dictator. This shows that a dictator status, which represents the highest degree of control possible in a stockholder meeting, is dependent upon the relationship between two factors: the quota and the voting weight of a stockholder in relation to the voting weight of the other stockholders. This further shows that merely relying on the absolute voting weight of one stockholder gives incomplete information about his true voting power.[59]

2. Dummy Stockholders

A stockholder whose voting weight is immaterial in determining the outcome of a stockholder meeting is a "dummy" which represents the lowest degree of control possible in a corporation.[60] A stockholder is a dummy if two conditions are satisfied. Firstly, there is no single instance that he can make any possible coalition of stockholders prevail in a stockholder meeting by joining. Secondly, there is no single instance that he can make any coalition lose by dropping out.

Whenever there is a dictator, all other stockholders are dummies.[61] This is true in the first example in the previous section, involving the voting rights distribution {51: 51, 49}, with P1 as the dictator. P2 can neither help P1 prevail nor block his motion in a stockholder meeting because P1's voting weight is already equal to the quota.

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[58] Leech, *supra* note 15.

[59] "In many cases the weights are not the critical factors, and other practical considerations prove more important." Lucas, *supra* note 44, at 232.

[60] *See* Yang & Xi, *supra* note 56, at 326.

[61] *See id.*

It is also possible to have dummy stockholders where there is no dictator. Moreover, a stockholder can be a dummy even though his voting weight is nearly equal to that of the other stockholders. Consider the following illustrations:

1. {51: 49.5, 49.5, 1.0}
2. {51: 50, 49, 1}
3. {67: 34, 34, 32}

The first example has a quota of 51% and stockholders P1, P2 and P3 have voting weights of 49.5%, 49.5% and 1.0%, respectively. P3 is a dummy because there is no single instance that he can make a coalition with P1 and P2 prevail in a voting situation. Furthermore, there is no single instance that he can make the grand coalition of all stockholders lose in a voting situation by dropping out. In short, P3's voting weight is immaterial in determining the outcome of a stockholder meeting.

Compare this with the second example, which has the same quota as the first example, but with a very miniscule modification in the voting rights of P1 and P2, changing their respective voting weights to 50% and 49%. Here, we merely shifted 0.5% from P2 and P1's voting weight, while P3's voting weight of 1% remains unchanged from the first example. Notice that this minor change of 0.5% in the voting rights of *other* stockholders made P3 lose his dummy status. Suddenly, P3 is a critical voter and can make P1 win or lose even without the cooperation of P2. P3's voting weight of 1% may be disproportionately lower than P2's voting weight of 49%, but P3's voting power is effectively or *de facto* equal to that of P2's.

The third example shows that a nearly equal voting weight distribution can still result in disproportionate degrees of voting power. With a quota of 2/3 or 67% super-majority votes, and a voting rights distribution of 34-34-32, P3 has nearly equal voting weight as P1 and P2. P3's voting weight differs only by a margin of 2%. Yet, it is inaccurate to say that P3 has equal voting power as P1 and P2. The truth is that only P1 and P2 have effective control of the corporation, with *de facto* control of 50-50 voting power. Meanwhile P3 has 0% voting power. This is because P1 alone and P2 alone cannot muster enough votes to pass a resolution by individually forming a coalition with P3. Second, a coalition composed of P1 and P2 is the only possible winning coalition. Third, in a grand coalition composed of all stockholders, P3 is not a critical voter, i.e. dropping out will not make the coalition lose. This renders P3 a dummy. The differences in voting weight distribution and effective voting power distribution in the three scenarios are summarized, as follows:

TABLE 2

Voting Weight Distribution	Voting Power Distribution
{51: 49.5, 49.5, 1.0}	{100: 50, 50, 0}
{51: 50, 49, 1}	{100: 50, 25, 25}
{67: 34, 34, 32}	{100: 50, 50, 0}

The left column describes the *de jure* allocation of control in the corporation, while the right column describes the *de facto* allocation of control. Only the first and third examples have dummies, represented by 0% voting power.[62]

This demonstrates the weakness of the Control Test in describing the true voting power of stockholders. *First*, the voting weights of other stockholders can modify the voting power of a stockholder, even though the latter's voting weight remains unchanged.[63] *Second*, we cannot judge the voting power of a stockholder merely by looking at the magnitude of his voting weight. A less than 1% shift in voting weight, or a voting rights differential of 2%, can modify the total voting power distribution in the whole corporation.[64] *Third*, a stockholder can have almost as many votes as other stockholders and yet still be a dummy.[65]

3. Veto Power

Veto power is that degree of voting power that can block a motion, but cannot on its own pass a motion.[66] It is a lower degree of control compared to dictator status. A stockholder with veto power satisfies the following two conditions:

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[62] Leech, *supra* note 15.

[63] Thomas Poulsen, Therese Strand & Steen Thomsen, *Voting Power and Shareholder Activism: A Study of Swedish Shareholder Meetings*, 18 CORPORATE GOVERNANCE: AN INT'L REV. 329 (2010).

[64] Dennis Leech, *Ownership Concentration and the Theory of the Firm: A Simple-Game-Theoretic Approach*, 35 THE J. OF INDUS. ECON. 236-9 (1987).

[65] "[C]ontrol may be exercised in different ways [...] In order to control more than half the shareholders voting power, an institutional unit need not own any of the voting shares itself. A corporation C could be a subsidiary of another corporation B in which a third corporation A owns a majority of the voting shares." *See* Yves Crama & Luc Leruth, *Power Indices and the Measurement of Control in Corporate Structures*, 15 INT'L GAME THEORY REV. 3 (2013).

[66] D. Paul Newman, *The SEC's Influence on Accounting Standards: The Power of the Veto*, 19 J. OF ACCT. RES. 134 (1981).

$$w_1 < q$$
$$(\sum w_i) - w_1 < q$$

The first condition is that the stockholder's voting weight (w_1) should be less than the quota (q); otherwise, he is a dictator. The second condition is that the total voting weights of all stockholders (Σw_i) minus the stockholder's voting weight (w_i) should be less than the quota (q). This means that even if all other stockholders form a coalition, they cannot muster the required minimum votes to pass a stockholder resolution.[67] The stockholder's vote is indispensable, but he himself cannot pass a resolution single-handedly. He has the power to prevent a motion from passing, but he has no unilateral power to pass a motion. He can make the coalition of all other stockholders win or lose in a stockholder meeting.[68]

In a corporation with only two stockholders, a stockholder with veto power has a *de facto* control of 50% voting power, regardless of what his shareholding size or voting weight might be.[69] These two conditions that create veto power describe a relationship between voting weight distributions and the quota. As in the previous sections, we cannot deduce whether a stockholder has veto power based on his absolute voting weight alone.[70] Consider the following illustrations:

1. {51: 50, 25, 25}
2. {67: 40, 30, 30}
3. {100: 33, 33, 33, 1}

In the first example, P1 cannot pass a motion single-handedly because his voting weight of 50% is less than the quota of 51%. The combined voting weight of P2 and P3, which is 50%, is also less than the quota. P1's vote is indispensable if P2 and P3 want to pass a motion. He can likewise make the coalition of P2 and P3 lose in the stockholder meeting. The second example has essentially the same voting power setup as in the first example, with P1 having a veto power because P2 and P3 absolutely require his cooperation to pass a motion.

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[67] *See* Yang & Xi, *supra* note 56, at 327.

[68] *See id.*

[69] Philip D. Straffin, Jr., *Homogeneity, Independence, and Power Indices*, 30 PUBLIC CHOICE 1, 107 (1977).

[70] Dennis Leech & Miguel C. Manjón, *Corporate Governance in Spain (With an Application of the Power Indices Approach)*, 13 EUROPEAN J. OF L. & ECON. 157 (2002).

The third example exemplifies the non-monotonicity between voting weight and voting power. Since the quota requires a unanimous vote, P4's measly voting weight of 1% is, in reality, equivalent to 25% voting power. This is also an instance where a weighted voting game like a stockholder's meeting evolves into a one person-one vote system, where each voter has *de facto* equal voting power, calculated simply as 1/N where N signifies the number of voting stockholders.

The differences in voting weight distribution and effective voting power distribution in the three scenarios are summarized as follows:

TABLE 3

Voting Weight Distribution	**Voting Power Distribution**
{51: 50, 25, 25}	{100: 50, 25, 25}
{67: 40, 30, 30}	{100: 50, 25, 25}
{100: 33, 33, 33, 1}	{100: 25, 25, 25, 25}

Based on the previous two sections and this section, a dictator stockholder has 100% voting power, a dummy stockholder has 0% voting power, while a stockholder with veto power has 50% voting power or x% voting power equal to all other stockholders. These figures reflect *de facto* or effective control regardless of the magnitude of stockholders' voting weights.

B. Stockholder Coalitions

The Control Test fails to consider the possibility of stockholder coalitions, or situations wherein a stockholder will join other stockholders to pass a motion through their combined voting weight.[71] The reality is that a given voting weight can have varying degrees of voting power depending on whether it is sufficiently relevant to make alliances win or lose in a stockholder meeting.[72]

A stockholder's voting weight is of value to another stockholder if their combined voting weights can pass a resolution, and is of less value if it

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[71] *See, generally*, Andrew M. Kulpa, *The Wolf in Shareholder's Clothing: Hedge Fund Use of Cooperative Game Theory and Voting Structures to Exploit Corporate Control and Governance*, 6 U.C. DAVIS BUS. L.J. 78 (2005).

[72] *See, generally*, Yves Crama, et al., *Corporate Governance Structures, Control and Performance in European Markets: A Tale of Two Systems*, No. CORE Discussion Papers (1999/42), UCL (1999).

cannot as it would have no functional use. To facilitate discussion, we shall adopt the following notations to denote a stockholder coalition:

{P1, P2, P3}

A coalition composed of all stockholders is called the "grand coalition." A coalition that can muster sufficient votes to meet the quota is called the "winning coalition." A coalition that has insufficient votes to meet the quota is a "losing coalition." The combined voting weight of stockholders in a coalition is called the "coalition weight." The coalition weight of a winning coalition is always equal to or higher than the quota, and the coalition weight of a losing coalition is always lower than the quota.[73]

How do stockholder coalitions affect the individual voting power of a stockholder? A stockholder who can make a coalition win or lose has higher voting power compared to a stockholder whose voting weight is irrelevant to a coalition. In short, a stockholder who is a "swing voter" has a greater degree of control. To be a swing voter, the voting weight of a stockholder can either turn a losing coalition into a winning coalition or a winning coalition into a losing coalition. A stockholder who cannot make a losing coalition win by joining or a winning coalition lose by dropping out is not a swing voter and has a low degree of control.

How do we know which stockholder coalitions will form? The answer is that we can never know just by looking at an arbitrary list of stockholders and their voting weights. Since we have no knowledge of the preferences of stockholders in forming alliances, it is necessary to list *all* possible coalitions for every given set of stockholders.[74] The total possible stockholder coalitions can be obtained through the following:[75]

$$2^N - 1$$

N denotes the total number of stockholders. The formula counts a lone stockholder as a single coalition. Hence, in a corporation with two stockholders, there are 3 possible coalitions: {P1}, {P2}, and {P1, P2}. In a corporation with three stockholders, there are 7 possible coalitions: {P1},

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[73] Dubey, *supra* note 51.

[74] "As a measure of power in a weighted voting game, the normalized Banzhaf index relates the number of potential swings ascribed to player i to the total amount of swings of all players. The swings of all coalitions C in the power set P (N) enter the Banzhaf index with equal weights. This has the implication that all possible coalitions are assumed equally probable." *See also* Prigge, *supra* note 6, at 205.

[75] *See also id.*

{P2}, {P3}, {P1, P2}, {P2, P3}, {P1, P3}, and {P1, P2, P3}. Consider the following voting situations:

1. {51: 50, 49, 1}
2. {67: 40, 30, 30}

In the first example, the total possible coalitions and the voting outcome for each coalition are illustrated, as follows:

TABLE 4

Possible Coalitions	Coalition Weight	Voting Outcome
{P1}	50	Losing Coalition
{P2}	49	Losing Coalition
{P3}	1	Losing Coalition
{P1, P2}	99	Winning Coalition
{P2, P3}	50	Losing Coalition
{P1, P3}	51	Winning Coalition
{P1, P2, P3}	100	Winning Coalition

In the second example, the total possible coalitions and the voting outcome for each coalition are illustrated, as follows:

TABLE 5

Possible Coalitions	Coalition Weight	Voting Outcome
{P1}	40	Losing Coalition
{P2}	30	Losing Coalition
{P3}	30	Losing Coalition
{P1, P2}	70	Winning Coalition
{P2, P3}	60	Losing Coalition
{P1, P3}	70	Winning Coalition
{P1, P2, P3}	100	Winning Coalition

C. Critical Stockholders

A critical stockholder is a swing voter in a stockholder coalition.[76] He can make a winning coalition lose by dropping out, or he can make a losing coalition win by joining.[77] Therefore, a critical stockholder satisfies the following condition:

$$w_c - w_i < q$$

In this condition, w_c represents the coalition weight, w_i represents the voting weight of a stockholder who is a member of the coalition, and q represents the quota.[78] We measure voting power by the number of times that the stockholders are critical stockholders, given all possible stockholder coalitions. Consider the following voting situations:

1. {51: 50, 49, 1}
2. {67: 50, 49, 1}
3. {51: 40, 30, 30}
4. {67: 40, 30, 30}

For the first example, P1 has the highest voting power while P2 and P3 have equal voting powers. Our basis for this conclusion is that, given all 7 possible stockholder coalitions, P1 is a critical stockholder in three instances, while P2 and P3 are critical stockholders once. This is illustrated, as follows:

TABLE 6

Possible Coalitions	Coalition Weight	Voting Outcome	Critical Stockholders		
			P1	P2	P3
{P1}	50	Losing Coalition			
{P2}	49	Losing Coalition			
{P3}	1	Losing Coalition			

[76] Yang & Xi, *supra* note 56, at 327.
[77] *See id.*
[78] *Id.* at 325

{P1, P2}	99	Winning Coalition	✓	✓	
{P2, P3}	50	Losing Coalition			
{P1, P3}	51	Winning Coalition	✓		✓
{P1, P2, P3}	100	Winning Coalition	✓		
Number of times that stockholder is critical			**3**	**1**	**1**

In the second example, we have the same voting rights distribution as in the first example, but we changed the quota from a simple majority of 51% to a super-majority of 67%. This also modifies the voting power of the stockholders, with P1 and P2 having equal control and P3 having 0% effective control. Again, the basis for this conclusion is the number of times that the stockholders are critical voters in all possible coalitions. This is illustrated, as follows:

TABLE 7

Possible Coalitions	**Coalition Weight**	**Voting Outcome**	**Critical Stockholders**		
			P1	**P2**	**P3**
{P1}	50	Losing Coalition			
{P2}	49	Losing Coalition			
{P3}	1	Losing Coalition			
{P1, P2}	99	Winning Coalition	✓	✓	
{P2, P3}	50	Losing Coalition			
{P1, P3}	51	Losing Coalition			

{P1,P2, P3}	100	Winning Coalition	✓	✓	
Number of Times that Stockholder is Critical			**2**	**2**	**0**

The third example shows all stockholders having the same or equal degrees of control, which means that given a quota of 51%, the additional 10% voting weight of P1 compared to the voting weights of P2 and P3 is immaterial in determining the outcome of a stockholder meeting. This is illustrated, as follows:

TABLE 8

Possible Coalitions	**Coalition Weight**	**Voting Outcome**	**Critical Stockholders**		
			P1	**P2**	**P3**
{P1}	40	Losing Coalition			
{P2}	30	Losing Coalition			
{P3}	30	Losing Coalition			
{P1, P2}	70	Winning Coalition	✓	✓	
{P2, P3}	60	Winning Coalition		✓	✓
{P1, P3}	70	Winning Coalition	✓		✓
{P1, P2, P3}	100	Winning Coalition			
Number of Times that Stockholder is Critical			**2**	**2**	**2**

The fourth example retains the same voting rights distribution as in the third example, but we changed the quota from a simple majority of 51% to a super-majority of 67%. With this change, the additional 10% voting weight of P1 suddenly gains relevance, making him the stockholder with highest voting power. This is illustrated, as follows:

TABLE 9

Possible Coalitions	Coalition Weight	Voting Outcome	Critical Stockholders		
			P1	P2	P3
{P1}	40	Losing Coalition			
{P2}	30	Losing Coalition			
{P3}	30	Losing Coalition			
{P1, P2}	70	Winning Coalition	✓	✓	
{P2, P3}	60	Losing Coalition			
{P1, P3}	70	Winning Coalition	✓		✓
{P1, P2, P3}	100	Winning Coalition	✓		
Number of Times that Stockholder is Critical			**3**	**1**	**1**

The possible coalitions in sum are: {P1}, {P2}, {P3}, {P1, P2}, {P2, P3}, {P1, P3}, and {P1, P2, P3}.

IV. VOTING POWER

We are now ready to provide a formal definition of voting power in a stockholder meeting. While the Control Test simply defines voting power as voting weight, we propose voting power as:

$$V_i = \beta_i / \sum \beta_i$$

V_i denotes the voting power of a given stockholder P_i. β_i denotes the number of times that stockholder P_i is a critical stockholder in all possible stockholder coalitions. $\sum$ denotes the total number of times that all

stockholders are critical stockholders in all possible stockholder coalitions.[79] Applying this definition, we summarize the voting powers of stockholders in the four examples in the previous section, as follows:

TABLE 10

Voting Situations	ß*i*			∑ß*i*
	P1	P2	P3	
{51: 50, 49, 1}	3	1	1	5
{67: 50, 49, 1}	2	2	0	4
{51: 40, 30, 30}	2	2	2	6
{67: 40, 30, 30}	3	1	1	5

The resulting voting power distribution is as follows:

TABLE 11

Voting Situations	V*i*		
	P1	P2	P3
{51: 50, 49, 1}	60%	20%	20%
{67: 50, 49, 1}	50%	50%	0%
{51: 40, 30, 30}	33.3%	33.3%	33.3%
{67: 40, 30, 30}	60%	20%	20%

Applying the formula for voting power, we reveal degrees of control that are not obvious when we merely look at the voting weight distributions of stockholders.

V. *DE FACTO* FOREIGN CONTROL IN STOCKHOLDER MEETINGS

The thesis postulated in the Introduction is that the Control Test does not guarantee that a foreign minority stockholder will have minority control.

[79] "In calculating the a priori decision-making power it ignores the order players join a coalition. Instead, it rests upon the size of a player's contribution to the success of a coalition. Thus, there can be several critical members in a winning coalition whose exit would turn the coalition into a losing coalition, that is, whose withdrawal would cause a swing." *See* Prigge, *supra* note 6, at 205.

A stockholder does not have "minority" control if, empirically, he has an equal or a higher degree of control compared to other stockholders.

Hence, there are two parameters that can falsify the Control Test: *first*, if the voting power of a foreign stockholder is equal to the voting power of each of the Filipino stockholders, and *second*, if his voting power is greater than that of each of the Filipino stockholders. Under the first parameter, we say that the foreign stockholder has "joint control," and under the second parameter, that he has *de facto* or "effective control."

The question, therefore, is when do foreign minority voting rights result in joint control, or *de facto* or effective control by foreigners? In other words, what are the instances when a corporation complies with a given foreign equity limitation, but a foreign minority stockholder has equal or more voting power compared to Filipino stockholders?

Consider the voting situations in Table 12. The table lists various voting weight distributions in corporations engaged in partially nationalized economic activities, with P1 as the lone foreign stockholder. For every voting weight distribution, the voting weight of P1 maximizes a given foreign equity limitation.

Hence, in the {60, 40} distribution, foreign stockholder P1 has a voting weight of 60%, which maximizes the allowable foreign equity in financing companies and investment houses regulated by the SEC, as provided in Section 6 of R.A. 5980,[80] as amended by R.A. 8556 and P.D. 129,[81] as amended by R.A. 8366. In the {40, 60} distribution, foreign stockholder P1 has a voting weight of 40%, which is also the maximum foreign equity in public utility companies, as provided in Section 11 of Article XII of the 1987 Constitution.

The voting weight distributions may pertain to voting shares, or to the total outstanding capital stock, which includes both voting and non-voting shares. As provided in *Gamboa vs. Teves*, the foreign equity cap applies to the total outstanding capital stock *and* to each class of shares, whether voting or non-voting.[82] Hence, the resulting voting power distribution of the given voting weight distribution is true whether the voting situation includes all or only some classes of shares. For instance, the voting weight distribution {51: 40, 30, 30}, which results in a {33.33%, 33.33%, 33.33%} voting power

[80] Rep. Act. No. 5980 (1969), § 6. Financing Company Act.

[81] Pres. Dec. No. 129 (1973). Investment Houses Law.

[82] *Gamboa*, 682 SCRA 398.

distribution, is true whether the context is a stockholder meeting requiring approval of submitted matters, which only involve common stockholders, or fundamental matters, which involve all stockholders, whether common or preferred shareholders.

TABLE 12

Voting Weight Distribution (P1 : foreigner)	**Voting Power Distribution V_i**	
	Simple Majority (q = 51%)	**Super-Majority (q = 67%)**
{60, 40}	{100%, 0%}	{50%, 50%}
{40, 60}	{0%, 100%}	{50%, 50%}
{40, 30, 30}	{33.33%, 33.33%, 33.33%}	{60%, 20%, 20%}
{40, 20, 20, 20}	{50%, 16.67%, 16.67%, 16.67%}	{40%, 20%, 20%, 20%}
{49, 51}	{0%, 100%}	{50%, 50%}
{49, 26, 25}	{33.33%, 33.33%, 33.33%}	{60%, 20%, 20%}
{49, 17, 17, 17}	{50%, 16.67%, 16.67%, 16.67%}	{40%, 20%, 20%, 20%}
{30, 70}	{0%, 100%}	{0%, 100%}
{30, 24, 23, 23}	{50%, 16.67%, 16.67%, 16.67%}	{25%, 25%, 25%, 25%}
{25, 75}	{0%, 100%}	{0%, 100%}
{25, 38, 37}	{33.33%, 33.33%, 33.33%}	{0%, 50%, 50%}
{25, 19, 19, 19, 18}	{20%, 20%, 20%, 20%, 20%}	{20%, 20%, 20%, 20%, 20%}
{20, 80}	{0%, 100%}	{0%, 100%}
{20, 40, 40}	{33.33%, 33.33%, 33.33%}	{0%, 50%, 50%}
{20, 27, 27, 26}	{0%, 33.33%, 33.33%, 33.33%}	{25%, 25%, 25%, 25%}
{20, 16, 16, 16, 16, 16}	{33.33%, 13.33%, 13.33%, 13.33%, 13.33%, 13.33%}	{30%, 14%, 14%, 14%, 14%, 14%}

In all instances, P1 is the lone foreigner in the corporation and all other stockholders are Filipinos. The different scenarios explore voting situations where there is only one, few or many Filipino stockholders, given the same voting weight for P1. For instance, where P1 maximizes a foreign equity cap of 40%, we explore scenarios where there is only one or there are two other Filipino stockholders. We also explore different combinations of voting weights between or among the Filipino stockholders. As shown in previous illustrations, reconfiguring the voting weights of *other* stockholders can in turn reconfigure the voting power of a stockholder whose voting weight remains unchanged.

The first column under voting weight distribution represents the *de jure* allocation of control in the corporation, which renders P1 a minority stockholder in terms of voting weight. The distribution merely reflects the shareholding size of each stockholder. Since the foreigner only occupies a *de jure* minority position,[83] the corporation passes the Control Test, and is therefore considered a Philippine national for the purpose of complying with foreign equity limitations.

The second and third columns under voting power distribution represents the *de facto* allocation of control, which shows degrees of power that are not obvious if we only look at the voting weight distribution in the first column, as prescribed by the Control Test. For the voting power distribution, we apply the formal definition of voting power as [illegible]. This results in a *de facto* control allocation that is different from the *de jure* control allocation coming from the voting weight distribution.

We have explained in previous sections how the quota can reconfigure the voting power of stockholders even if the voting weight distribution remains unchanged. Hence, the voting power distribution is divided into two columns by quota: whether simple majority (51%) or super-majority (2/3 or 67%). We have excluded a column for a quota requiring unanimous votes (100%) since, naturally, this will render all the stockholders in all voting situations to have equal degrees of control, similar to a one person-one vote system.

Emphasis is given to simple majority and super-majority voting requirements because the Corporation Code reserves certain matters for the decision-making of stockholders and prescribes the corresponding quota. Apart from the selection of the members of the Board of Directors, matters

[83] Except for the {60, 40} voting weight distribution, which is allowed by law.

requiring stockholder approval include: (1) those required by law to be approved by the stockholders with voting shares,[84] (2) those required by law to be approved by the stockholders regardless of whether they hold voting or non-voting shares, [85] and (3) those submitted by management to the stockholders for approval, which by default only involve stockholders with voting shares, unless otherwise provided in the by-laws.[86]

The voting weight distribution and the quota allow us to derive 1%. The voting power distribution indicates that *it is possible for a corporation that is a Philippine national to be under the "effective control" of a foreign minority stockholder.* It is also possible to pass the Control Test, even though the foreign minority stockholder has "joint control" of the corporation.

In the {60, 40} voting weight distribution and given a simple majority voting requirement, P1 has "effective control" and is a dictator stockholder because his voting weight is higher than the quota. Therefore, his voting power is 100% and that of the Filipino stockholder 0%, even though the latter has a 40% voting weight. It does not matter whether P2 has 1% voting weight or 40%.

By imposing a super-majority voting requirement, however, P1 loses his dictator status because he can no longer unilaterally pass a stockholder resolution. Nevertheless, he has "joint control" and the Filipino stockholder P2 cannot pass a stockholder resolution without the cooperation of the foreign stockholder.

In the {40, 60} voting weight distribution, P1 has virtually no control of the corporation, but in a matter requiring super-majority votes, P1 has joint control. If we compare this to the {40, 30, 30} voting weight distribution, we see the instant effect of having more Filipino stockholders and of dispersing the 60% voting weight between them. With simple majority voting requirement, P1 has joint control, but with super-majority voting requirement, P1 has *de facto* or effective control. The effect of dispersing the Filipino bloc of shares to more Filipino stockholders is more obvious if we compare this further to the {40, 20, 20, 20} voting weight distribution, where P1 has *de facto* control regardless of whether the vote calls for simple majority or super-majority.

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[84] CORP. CODE, §§ 6, 24, 28, 44, 95.

[85] § 6.

[86] §§ 29, 37, 38, 40, 42, 44, 48, 77, 118.

We see the same pattern in the succeeding voting weight distributions, with foreign equity limitations of 49%, 30%, 25% and 20%. The voting power of foreign stockholder P1 increases upon the happening of two events: *first*, when the quota is raised, and *second*, when the total voting weight of Filipino stockholders is dispersed among an increasing number of Filipino stockholders.

As we increase the quota, the number of Filipino stockholders, and the level of voting weight dispersion among them, we see an increasing progression in the voting power of the foreign stockholder. The voting power of P1 changes from having no control to joint control, and finally from joint control to *de facto* or effective control. These changes occur even if the foreign stockholder's shareholding size remains unchanged and even if the corporation continues to be considered a Philippine national under the Control Test.

Why compare the voting power of a foreign stockholder with that of *each* of the Filipino stockholders if the Control Test treats all Filipino stockholders as *one* coalition? This is because the Control Test does not account for the fact that a stockholder who deals with fewer stockholders to pass a resolution has higher voting power than a stockholder who needs to deal with more stockholders. The voting power distribution accounts for this fact.

For example, in the {40, 20, 20, 20} voting weight distribution, the Control Test presumes as a matter of legal fiction that P2, P3, and P4 will form a coalition of Filipino stockholders. This is why the Control Test adds the voting weights of the individual Filipino stockholders to determine the Filipino coalition weight. However, in the voting power distribution, I ? does not assume that stockholders of the same nationality will form a coalition. It measures all possible stockholder coalitions, and determines which stockholder has the most advantageous position based on the voting weight distribution and the quota.

We have discussed the possibility that a foreign minority stockholder has *de facto* control of stockholder approvals. The next section is equally important: the possibility of *de facto* foreign control of the Board of Directors, notwithstanding the fact that foreign stockholders can only elect their nominees to the Board to the extent of their foreign equity participation.

VI. *DE FACTO* FOREIGN CONTROL OF THE BOARD OF DIRECTORS

There are four types of voting situations in the corporation: (1) those involving common stockholders,[87] (2) those involving all stockholders,[88] (3) election by common stockholders of members of the Board of Directors,[89] and (4) voting situations within the level of the Board of Directors.[90]

The preceding section modeled the first two voting situations as a weighted voting game, involving players with voting weights and a quota.

The third voting situation cannot be modeled as a weighted voting game because the election of Directors does not involve two alternative motions (i.e. "yes" and "no"). Rather, it is a situation where the voting weight of a common stockholder is translated into his number of representatives in the Board of Directors. The common stockholder's number of representatives becomes a proxy for his voting weight in the Board of Directors. Therefore, the election of Board of Directors merely transposes the voting weight distribution of common stockholders into the voting weight distribution of nominees in the Board. But this is only true if we view the nominees of one stockholder as a single coalition.

The fourth voting situation, which only involves the level of the Board, is a one person-one vote system. The Directors do not vote as a coalition of nominees of their respective nominator stockholder. Each Director exercises his own discretion and is entitled to one vote. This characterizes the voting situation within the Board as a one person-one vote system, where each voter has an equal degree of control as the others.

Notwithstanding the fact that each Director is entitled to only one vote and that each Director has equal degree of control as the others, we have postulated in Section II (*The Stockholder Meeting as a Weighted Voting Game*) that we can reconfigure a one person-one vote system into a weighted voting game. To recall, we stated that the concept of voting weight becomes relevant if a group of Directors is taken as a coalition, in which case the one person-one vote system becomes a weighted voting game from the perspective of the coalitions of Directors.

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[87] CORP. CODE, §§ 6, 24, 28, 44, 95.
[88] § 6.
[89] § 24.
[90] §§ 16, 29, 37, 38, 40, 42, 44, 48, 5, 68, 76, 77, 118.

The Control Test, as applied in *Gamboa*, conceives of the voting situation in the Board of Directors as a weighted voting game. It presumes, by legal fiction, that the number of nominees of a stockholder in the Board of Directors is a proxy of the stockholder's voting weight. Hence, the voting weight distribution of common stockholders determines the level of representation of each common stockholder in the Board of Directors, and therefore the voting weight of a *presumed* coalition of Director nominees mirrors the voting weight of a common stockholder. If so, the voting power distribution in the Board of Directors also mirrors the voting power distribution of common stockholders. This is illustrated, as follows:

TABLE 13

Voting Weight Distribution of Stockholders (P1 : foreigner)	**Board Representation in 10 Director Positions (P1: foreign nominees)**	**Voting Weight Distribution in the Board of Directors**
{40, 60}	{4, 6}	{40, 60}
{40, 30, 30}	{4, 3, 3}	{40, 30, 30}
{40, 20, 20, 20}	{4, 2, 2, 2}	{40, 20, 20, 20}

From the illustration, we see how the voting weight of a stockholder is transposed into the voting weight of his Director-nominees in the Board of Directors, if his Director-nominees are conceived as a single coalition in the Board. Thus, if P1 has 40% voting weight in the corporation, this entitles him to four Director-nominees in the Board, which is composed of 10 available seats. The four Directors, as a unit, has a combined voting weight of 40% in the Board, equal to the voting weight of P1 as a stockholder. From the voting weight distribution in the Board of Directors, we derive the voting power of each coalition of Director-nominees, as follows:

TABLE 14

Voting Weight Distribution of Stockholders (P1 : foreigner)	Board Representation (P1 : foreign nominees)	Voting Weight Distribution of Board	Voting Power Distribution in Board of Directors V_i	
			Simple Majority (q = 51%)	Super-Majority (q = 67%)
{40, 60}	{4, 6}	{40, 60}	{0%, 100%}	{50%, 50%}
{40, 30, 30}	{4, 3, 3}	{40, 30, 30}	{33.33%, 33.33%, 33.33%}	{60%, 20%, 20%}
{40, 20, 20, 20}	{4, 2, 2, 2}	{40, 20, 20, 20}	{50%, 16.67%, 16.67%, 16.67%}	{40%, 20%, 20%, 20%}

If the foreign equity limitation is 40%, and the foreign stockholder has maximized the cap, he can elect four nominees in the Board of Directors, which yields a voting weight of 40% in the Board. The voting power of the coalition of the foreign stockholder's director nominees, in turn, depends on the quota within the Board, the number of Filipino stockholders, the corresponding number of Director-nominees of Filipino stockholders, and the voting weight of each Filipino stockholder. Thus, while a {40, 60} voting weight distribution results in 0% control in the Board for a simple majority voting requirement or joint control for a super-majority voting requirement, a {40, 30, 30} voting weight distribution results in *de facto* control of the Board for a super-majority voting requirement, and a {40, 20, 20, 20} voting weight distribution results in a *de facto* control of the Board for both majority and super-majority voting requirements.

VII. EFFECT OF PUBLIC FLOAT

The public float is that portion of a corporation's capital stock owned by an infinitely large number of stockholders.[91] This exists in publicly listed corporations. Each holder of shares of stock in the public float, therefore, virtually possesses 0% degree of control, because each stockholder in the public float must deal with an infinitely large number of stockholders to form a coalition of stockholders. To recall, a stockholder who deals with fewer stockholders to pass a resolution has more power compared to a stockholder who needs to deal with more stockholders.[92] Hence, it is safe to assume that the public float will never vote as a single coalition, and their combined voting weight will not have an impact in the voting power of bloc-holders.[93]

A more realistic voting weight distribution of a corporation with public float must therefore exclude the combined voting weight of the public float.[94] For example, in a {40, 20, 20, 20} voting weight distribution, where P1 is a foreign stockholder and P4 represents the combined voting weight of the public float, we will not expect that an infinitely large number of stockholders will form a coalition to vote the combined voting weight of 20%.[95] Hence, we modify the voting weight distribution by deducting the public float's combined voting weight of 20% from the total outstanding shares of 100%. We then divide the remaining voting weights by the reduced amount of total outstanding shares. This yields a new voting weight distribution of {50, 25, 25}, *net* of public float. The corresponding changes in voting power are illustrated, as follows:

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[91] "This is a model of the corporate meeting with a few major shareholders holding large blocks of shares and an ocean of infinite number of minor shareholders with infinitesimally small shareholdings." Prigge, *supra* note 6, at 209.

[92] Yang & Xi, *supra* note 56, at 326.

[93] "For example, in a 100-seat parliament with simple majority (that is, 51 votes are needed to win), assume there is one large party having 33 seats and the rest are divided among many small parties; the value of the large party is then close to 50%, considerably more than its voting weight 7 (that is, its 33% share of the seats)." *See, e.g.* Sergiu Hart, *Shapley Value* (2007), *available at* http://www.ma.huji.ac.il/hart/papers/val-palg2.pdf.

[94] "[T]he power of the principal shareholder is determined not only by his share of votes, but also by the absolute and relative shares of votes held by the remaining bloc holders, the free float, and the majority rule." *See, generally*, Prigge, *supra* note 6, at 201.

[95] "This is a model of the corporate meeting with a few major shareholders holding large blocks of shares and an ocean of infinite number of minor shareholders with infinitesimally small shareholdings." *Id.* at 209. (Citations omitted.)

TABLE 15

	Voting Weight Distribution *Wi*	Voting Power Distribution *Vi*
With Public Float	{51: 40, 20, 20, 20}	{50%, 16.67%, 16.67%, 16.67%}
Without Public Float	{51: 50, 25, 25}	{60%, 20%, 20%}

Note that with the reduction of the combined weight of the public float from the distribution, the voting power of P1 increased by 10% while the individual voting powers of P2 and P3 increased only by 3.33%.

VIII. EFFECT ON THE GRANDFATHER RULE

The Grandfather Rule offers a deceptively simple formula for unraveling chains of control in a complex web of corporate layering. According to this rule, if Corporation A holds 60% shares in Corporation B, which holds 30% shares in Corporation C, it follows that A indirectly controls 18% of C (i.e. 60% multiplied by 30%).[96] This method of imputing a fractional share of indirect control, however, is based on two flawed assumptions.

First, it assumes that voting situations across the chain are simultaneously occurring, when the reality is that stockholder votes happen sequentially from the first to the second tier of stockholders. *Second*, it treats voting power across the chain as a "continuous variable," when the more accurate method is to treat it as a "discrete variable."[97]

By imputing a fractional share of indirect control, it is as if the voting power of minority stockholders in Corporation B is still relevant in determining the result of a stockholder meeting in Corporation C once Corporation A has already prevailed in a given voting situation in Corporation

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[96] *See* Narra Nickel Mining and Development Corp. vs. Redmond Consolidated Mines Corp. [hereinafter "Narra Nickel"], G.R. No. 195580, 722 SCRA 382, Jan. 28, 2015.

[97] "One option to improve this kind of measure is to take into account the remaining shareholder structure in the classification rules. For instance, Elston and Goldberg (2003, 1401) consider a corporation to be dominated by a certain type of shareholder if this shareholder owns more than 50% of the votes or if he controls at least 25% of the voting rights and no other shareholder owns more than 25% of the votes." *See* Prigge, *supra* note 6, at 202.

B. The fact is that, with a simple majority voting requirement, A can single-handedly pass a motion in a stockholder meeting in B, since A's voting weight of 60% is already greater than the minimum threshold for approving the motion. The total 40% voting weight of other minority stockholders in B is immaterial in determining the outcome of the voting scenario.

The more accurate method, therefore, is to treat voting power along the chain as a *discrete variable*: *A is the controlling stockholder in B—true or false?*[98] And if the answer is true, then A is deemed to control the entirety of B's voting weight in C, and not just a fraction of 30%.

A variable is *continuous* if it can assume infinite values in an interval. This is true in the case of voting weights where the possible values can be any real number between 0% and 100%. Voting power varies as the weights change in the continuum of infinite possible values. This variable type is appropriate in the Control Test, where a slight change in shareholding size can make a stockholder win or lose in a voting situation. For example, where stockholders D and E have weights of 50% each, a sudden shift of 1% from E to D can make D prevail in a voting scenario, even without the cooperation of E.

A variable is *discrete* if the possible values are countable and finite. If this is applied in measuring voting power across a chain of corporations, there are only two possible answers: the stockholder in question is dominant in the higher tier or not, using a pass-fail criterion. The determination of who is dominant, however, is more complex than what is provided by the Control Test.

To develop an alternative to the Grandfather Rule, we shall construe the question "Who is the controlling stockholder?" as having two dimensions: horizontal and vertical.[99] Horizontal control refers to the voting power exercised by a stockholder relative to other stockholders in a corporation.[100] Vertical control refers to the voting power exercised by a stockholder across a chain of corporations.[101] In the law on foreign investments, the Control Test

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[98] *Id.* at 221.

[99] *Id.* at 197.

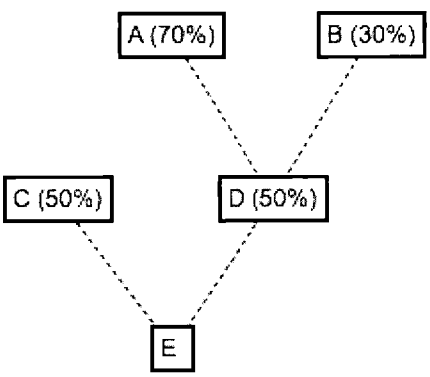
[100] "Shareholders A, B, C, and D hold larger direct blocs, the size of which is not important for this introductory example. The remaining shares are widely held. [This] displays the horizontal shareholder structure on the first, that is, the direct level. A, B, and C are natural persons. Thus, they are also ultimate shareholders." *Id.* at 197-8.

[101] "D Corp. is a legal entity. Beneath D Corp. there is a chain of shareholders, which has to be considered. D Corp. has three shareholders, among which F Corp. holds a majority

measures horizontal control, while the Grandfather Rule measures vertical control. Horizontal control is continuous, while vertical control should be discrete.

Regardless of whether we measure horizontal control through voting weight or voting power, both of them are continuous variables. The same variable type should not be applied for measuring vertical control. Voting situations happen successively or consecutively, i.e. from the highest tier to the lowest tier of stockholder corporations. The proper approach, therefore, is to determine the controlling stockholder in every tier, and impute non-fractional indirect control to the stockholder. To illustrate, consider the following ownership structure:

FIGURE 1



Under the Grandfather Rule, Corporations A and B indirectly control Corporation E through Corporation D. To impute the indirect shareholding, the 70% equity of A and 30% equity of Corporation B are multiplied with Corporation D's 50% equity in E, in order to arrive at a hypothetical shareholding structure with no indirect holding, as follows:

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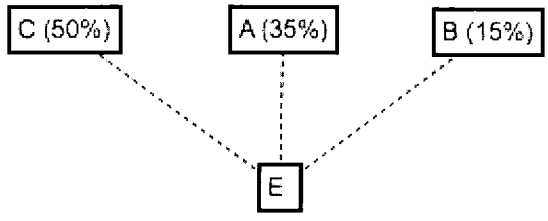
of 60% and is thus able to determine the business policy of D Corp. When we continue our analysis with the F Corp. we discover two shareholders. Since both Mr. H and Ms. I are natural persons, we have found the end of this chain of shareholders. Ms. I holds a bloc of 80% in F Corp. She controls F Corp.; as a consequence, she indirectly controls D Corp. and is thus by means of this chain an ultimate shareholder of CG Corp." *See id.* at 198-9.

FIGURE 2



It is a fallacy to split the 50% equity holding in Corporation E between Corporations A and B, according to the proportion of their equity holding in Corporation D.

First, this is a voting scenario that will not happen in reality because voting across tiers occur in a time series: first between Corporations A and B, and then between Corporation C and Corporation D-as-controlled-by-A. *Second*, the voting power distribution in the last tier of stockholders in Figure 1 is very different from the voting power distribution in Figure 2.

In Figure 1, Corporation A can unilaterally pass a stockholder resolution and Corporation B's voting weight is immaterial in determining the voting scenario. Hence, when we reach the voting scenario in the second tier, Corporation C's voting power is co-equal with Corporation D-as-controlled-by-A, which means that C can veto D's motion, and D can veto C's motion.

In Figure 2, however, we see the voting power of Corporation C dilated and that of Corporation A diluted by the presence of all three stockholders in the tier and by the fractional share of indirect control.

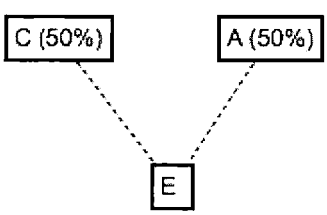
The possible winning coalitions are: {C, A}, {C, B} and {C, A, B}, but not {A, B}. Based on this, Corporation A has no veto power against any motion, when in reality A controls the entire voting weight of Corporation D and is therefore entitled to veto a motion if it so desires. In other words, the Grandfather Rule understates the indirect control held by A, as follows:

TABLE 16

Control Measurements	Figure 1	Figure 2
Voting Weight	C (50%), D (50%)	C (50%), A (35%), B (15%)
Voting Power	C (50%), D (50%)	C (60%), A (20%), B (20%)

Without the Grandfather Rule (Figure 1), the voting weight in the last tier of stockholders reflects their voting power. After applying the Grandfather Rule (Figure 2), we see a discrepancy of voting weight and voting power. The increase in the effective control of Corporation C from a voting weight of 50% to a voting power of 60% reflects the fact that C is absolutely needed in every possible stockholder coalition to pass a motion, while the decrease in the effective control of Corporation A from a voting weight of 35% to a voting power of 20% reflects the fact that A is not indispensable to pass a stockholder resolution. It is therefore meaningless to say that A only has 35% indirect control under the Grandfather Rule. The more realistic description of the chain of control is as follows:

FIGURE 3



IX. REVISITING *NARRA NICKEL* AND *GAMBOA*

What is the effect of the voting power computation on the Supreme Court rulings in *Narra Nickel Mining v. Redmont Consolidated Mines Corp.* (hereinafter "*Narra Nickel*") and *Gamboa*?

Applying the methodology discussed in the previous sections, our findings indicate that in *Narra Nickel*, Filipino stockholders have a degree of control *equal* to that of the foreign stockholder under a super-majority setup, and *effective control* under a simple majority setup, contrary to the ruling of the

Supreme Court which accords effective control to the foreign stockholder.

In *Gamboa*, our findings indicate that, as of March 2016, the foreign stockholder has a degree of control equal to that of the Filipino stockholders and therefore higher than what the 1987 Constitution allows. This is true whether reckoned under a simple majority or a super-majority setup, notwithstanding the fact that the PLDT shareholding structure may be compliant with the framework of the *Gamboa* ruling.

A. *Narra Nickel Mining v. Redmont Consolidated Mines Corp.*

To undertake exploration and mining activities, a corporation must apply for a Mineral Production Sharing Agreement ("MPSA") and Exploration Permit ("EP") with the Department of Environment and Natural Resources (DENR). Sara Marie Mining, Inc. ("SMMI") applied for an MPSA and EP covering certain areas in the Province of Palawan. SMMI subsequently assigned its rights under the MPSA application to Madridejos Mining Corporation ("MMC"), and MMC further assigned them to McArthur Mining, Inc. ("McArthur").

Subsequently, SMMI again applied for another MPSA covering another area of Palawan. SMMI assigned its rights under the second MPSA application to Tesoro Mining and Development, Inc. ("Tesoro"). On a separate occasion, Alpha Resources and Development Corporation ("ARDC") and Patricia Louise Mining & Development Corporation ("PLMDC") applied for an MPSA in other areas of Palawan. PLMDC, in turn, assigned its rights under the MPSA application to Narra Nickel Mining and Development Corp. ("Narra Nickel").

McArthur, Tesoro and Narra Nickel were the existing right-holders under the MPSA applications when Redmont Consolidated Mines Corp. ("Redmont") took interest in undertaking exploration and mining activities in certain areas of Palawan already covered by the said MPSA applications. Redmont petitioned for the denial of MPSA applications with the Panel of Arbitrators ("POA") under the DENR. It alleged that MBMI Resources, Inc. ("MBMI") owned at least 60% of the capital stock of McArthur, Tesoro and Narra Nickel. This would disqualify the MPSA applicants from undertaking mining and exploration activities in Palawan for being foreign nationals, pursuant to Section 3(aq) of R.A. 7942,[102] which states that a "qualified

[102] Rep. Act. No. 7942 (1995), § 3(aq). Philippine Mining Act of 1995.

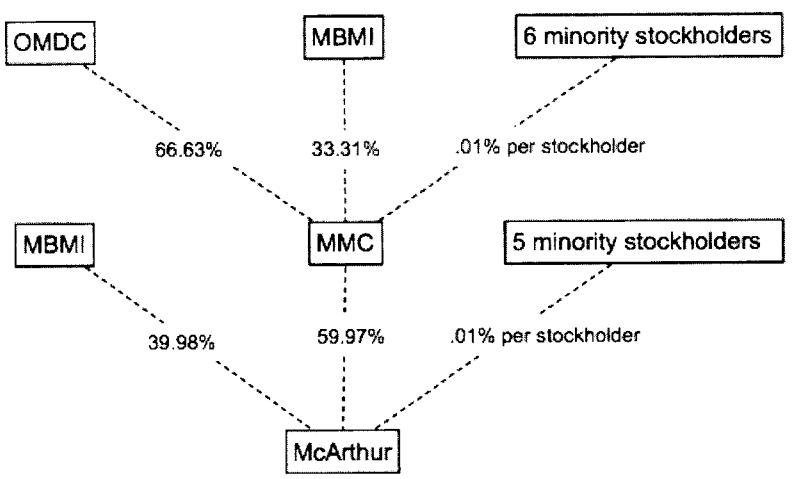
person" which is also a corporation must have at least 60% of the capital owned by citizens of the Philippines.[103] MBMI is a 100% Canadian corporation.

Moreover, Section 2, Article XII of the 1987 Constitution provides:

> The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State. The State may directly undertake such activities, or it may enter into co-production, joint venture or production-sharing agreements with Filipino citizens, or corporations or associations at least sixty per centum of whose capital is owned by such citizens.

The corporate ownership structures of McArthur, Tesoro and Narra Nickel are illustrated, as follows:

FIGURE 4
Corporate Ownership Structure of McArthur



[103] "Qualified person" means any citizen of the Philippines with capacity to contract, or a corporation, partnership, association, or cooperative organized or authorized for the purpose of engaging in mining, with technical and financial capability to undertake mineral resources development and duly registered in accordance with law at least sixty per centum (60%) of the capital of which is owned by citizens of the Philippines: Provided, That a legally organized foreign-owned corporation shall be deemed a qualified person for purposes of granting an exploration permit, financial or technical assistance agreement or mineral processing permit. Rep. Act No. 7942 (1995), § 3(aq). Philippine Mining Act of 1995.

FIGURE 5
Corporate Ownership Structure of Tesoro

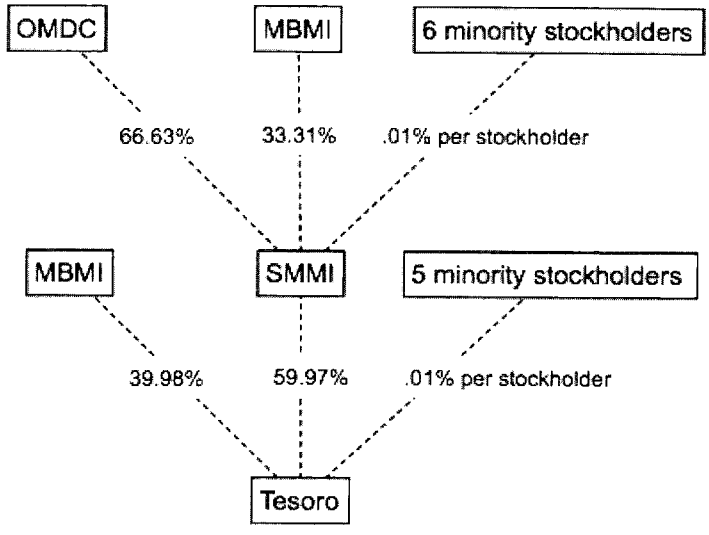
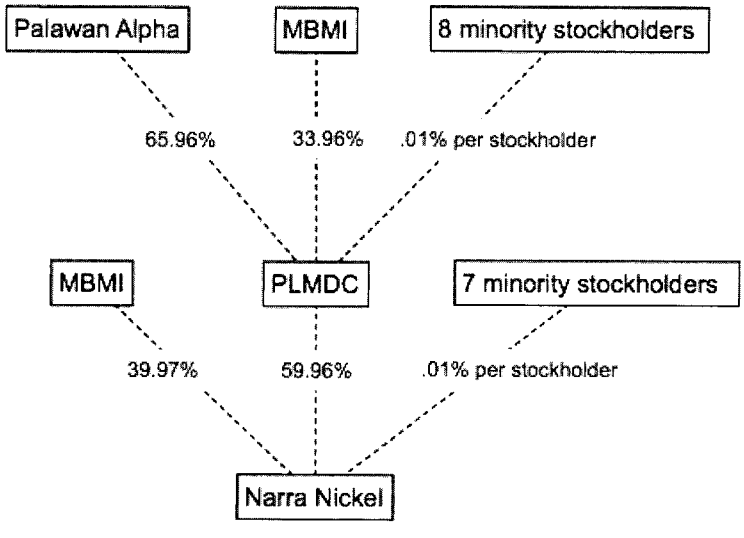


FIGURE 6
Corporate Ownership Structure of Narra Nickel



In McArthur, MBMI is a Canadian corporation, OMDC is a Filipino

corporation and MMC is a Filipino corporation. At issue is the corporate nationality of McArthur.

Since MMC is partly owned by a Filipino corporation (OMDC) and a Canadian corporation (MBMI), the Supreme Court bifurcated the 59.97% stockholding of MMC in McArthur as consisting partly of Filipino equity and partly of Canadian equity.

Hence, of the 59.97% equity of MMC, 39.96%[104] represented indirect Filipino equity while 19.98%[105] represented indirect Canadian equity. The 19.98% indirect Canadian equity through MMC's stockholding is then added to 39.98% direct Canadian equity represented by the direct shareholding of MBMI in McArthur, resulting in an effective total Canadian equity in McArthur of 59.96%. This exceeded the 40% foreign equity limitation for mining and exploration activities. The Filipino equity in McArthur consisted of the indirect equity from OMDC, which is 39.96%, and the negligible equity from Filipino minority stockholders.

In Tesoro, MBMI had a direct Canadian equity of 39.98%, added to an indirect Canadian equity through SMMI of 19.98%[106] for an effective total Canadian equity of 59.96%. In Narra Nickel, MBMI had a direct Canadian equity of 39.97%, added to an indirect Canadian equity through PLMDC of 20.36%,[107] for an effective total Canadian equity of 60.33%.

It is true that, with respect to dividend rights and other economic rights in McArthur, Tesoro and Narra Nickel, the Canadian national had effective total economic rights exceeding the 40% foreign equity limitation once we add the direct and indirect shareholdings of MBMI. But the same cannot be said about corporate control. Applying the methodology for computing voting power discussed in the previous sections, it is erroneous to conclude that MBMI had an effective voting power of 59.96% in McArthur, 59.96% in Tesoro, and 60.33% in Narra Nickel.

Each of the three corporate ownership structures have two tiers. To determine the corporate nationality of McArthur based on control, the first step is to determine the voting power distribution in the upper tier and identify

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[104] 66.63% x 59.97%; 66.63% is the equity of OMDC, a Filipino corporation, in MMC.

[105] 33.31% x 59.97%; 33.31% is the equity of MBMI, a Canadian corporation, in MMC.

[106] *Id.*

[107] 33.96% x 59.96%; 33.96% is the equity of MBMI in PLMDC while 59.96% is the equity of PLMDC in Narra Nickel.

the stockholder with effective control. The second step is to impute the entirety of the indirect shareholding to the controlling stockholder identified in the first step. The third step is to determine the voting power distribution in the lower tier and identify the stockholder with effective control. For McArthur, we analyze the upper tier as follows:

TABLE 17

Stockholders of MMC	**Voting Weight Distribution in MMC**	**Voting Power Distribution in MMC** *Vi*	
		Simple Majority (q = 51%)	**Super-Majority (q = 67%)**
{OMDC, MBMI, 6 minority stockholders}	{66.63%, 33.31%, 0.01% per stockholder}	{100%, 0%, 0%}	{100%, 0%, 0%}

The voting weights of the Filipino corporation (OMDC) and the Canadian corporation (MBMI) in MMC are 66.63% and 33.31%, respectively. But regardless of whether the threshold for passing stockholder resolutions is based on simple majority or super-majority (2/3), OMDC is a "dictator stockholder," i.e. capable of passing stockholder resolutions without the cooperation of other stockholders. The substantial stockholding of 33.31%, which represents Canadian equity, has an effective control equivalent to 0%. Hence, for the purpose of analyzing the voting power distribution in the lower tier, we must impute the entire stockholding of MMC in McArthur as belonging solely to OMDC. Analysis of the lower tier is as follows:

TABLE 18

Stockholders of McArthur	Voting Weight Distribution in McArthur	Voting Power Distribution in McArthur *Vi*	
		Simple Majority (q = 51%)	Super-Majority (q = 67%)
{MBMI, MMC, 5 minority stockholders}	{39.98%, 59.97%, 0.01% per stockholder}	{0%, 100%, 0%}	{50%, 50%, 0%}

The voting power distribution in the lower tier is one where the decision threshold becomes material. If the threshold is simple majority, MMC (as effectively controlled by OMDC) is a "dictator stockholder." However, if the threshold is 2/3 or super-majority, MMC and MBMI have joint control.

Considering the similarity in the three corporate ownership structures of McArthur and Tesoro, we arrive at the same conclusions in Tesoro. The ownership structure of Narra Nickel, however, is slightly different. Analysis of the upper tier is as follows:

TABLE 19

Stockholders of PLMDC	Voting Weight Distribution in PLMDC	Voting Power Distribution in PLMDC *Vi*	
		Simple Majority (q = 51%)	Super-Majority (q = 67%)
{Palawan Alpha, MBMI, 8 minority stockholders}	{65.96%, 33.96%, 0.01% per stockholder}	{100%, 0%, 0%}	{50%, 50%, 0%}

The difference is that under a super-majority (2/3), the Filipino corporation (Palawan Alpha) and the Canadian corporation (MBMI) have joint or equal control of PLMDC. Analysis of the lower tier is as follows:

TABLE 20

Stockholders of Narra Nickel	Voting Weight Distribution in Narra Nickel	Voting Power Distribution in Narra Nickel *Vi*	
		Simple Majority (q = 51%)	Super-Majority (q = 67%)
{MBMI, PLMDC, 7 minority stockholders}	{59.96%, 39.97%, 0.01% per stockholder}	{100%, 0%, 0%}	{50%, 50%, 0%}

Once more, under a super-majority (2/3), PLMDC and MBMI have joint or equal control. While this may represent veto power, it neither represents minority control nor effective control. Whether the decision threshold is simple majority or super-majority, the conclusion that we have arrived at is different from the ruling of the Supreme Court, which imputes effective control of McArthur, Tesoro and Narra Nickel to the foreign national. Our findings indicate that the Filipino corporation has effective control under a simple majority setup, and has at least equal control under a super-majority setup.

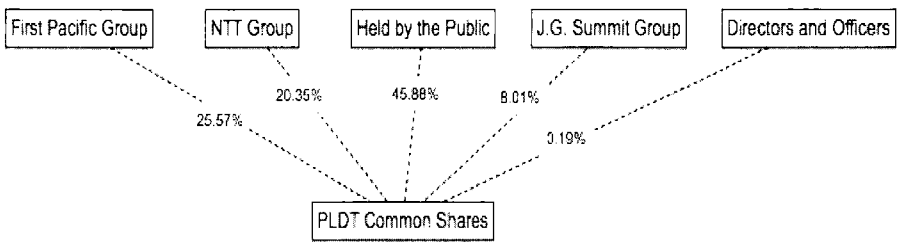
B. *Gamboa v. Teves*

The Philippine Long Distance Telephone Company (PLDT) has an existing franchise to operate a telecommunications business in the Philippines. Based on the 2010 General Information Sheet ("GIS") of PLDT, foreigners hold 120,046,690 common shares of PLDT while Filipinos hold 66,750,622 common shares; hence, foreign stockholders have 64.27% voting weight while Filipino stockholders have 35.73%. The Supreme Court ruled that "[s]ince holding a majority of the common shares equates to control, it is clear that foreigners exercise control over PLDT. Such amount of control unmistakably exceeds the allowable 40 percent limit on foreign ownership of public utilities expressly mandated in Section 11, Article XII of the Constitution."[108]

As of March 2016, the shareholding structure of PLDT insofar as common shares are concerned is as follows:

[108] Gamboa v. Teves, G.R. No. 176579, 652 SCRA 690, 735, June 28, 2011.

FIGURE 7



The voting power analysis yields the following initial results:

TABLE 21

Common stockholders of PLDT	**Voting Weight Distribution among PLDT common stockholders**	**Voting Power Distribution among PLDT common stockholders** *Vi*	
		Simple Majority (q = 51%)	**Super-Majority (q = 67%)**
{First Pacific Group, NTT Group, Held by the Public, J.G. Summit Group, Directors and Officers}	{25.57%, 20.35%, 45.88%, 8.01%, 0.19%}	{16.67%, 16.67%, 50%, 16.67%%, 0%}	{30%, 10%, 50%, 10%, 0%}

Considering, however, that "Held by the Public" shares and shares held by "Directors and Officers" constitute a large number of individual stockholders, with each having separate but negligible voting rights in PLDT, it is erroneous to treat them as blockholders capable of voting their shares as a single unit. Accordingly, we must apply the rules discussed under Section VII (*Effect of Public Float*) to factor out the shareholdings represented by dispersed shareholders.

For purposes of computing voting power, the modified shareholding structure only includes the blockholders First Pacific Group, NTT Group and J.G. Summit Group, with the following modified voting weights: {47.41%, 37.73%, 14.85%}. Analysis of this voting weight distribution is as follows:

TABLE 22

Common stockholders of PLDT	Voting Weight Distribution among PLDT common stockholders	Voting Power Distribution among PLDT common stockholders *Vi*	
		Simple Majority (q = 51%)	Super-Majority (q = 67%)
{First Pacific Group, NTT Group, J.G. Summit Group}	{47.41%, 37.73%, 14.85%}	{33.33%, 33.33%, 33.33%}	{50%, 50%, 0%}

Under a simple majority setup, Nippon Telegraph and Telephone Group (NTT Group), which represents foreign equity, has joint or equal control as the other Filipino stockholders. Under a super-majority setup, the NTT Group has the power to veto the motions of First Pacific Group. This accords a degree of *de facto* control to the foreign stockholder higher than what the 1987 Constitution allows.

The intent to bestow veto power to the NTT Group is evident in its 2011 Annual Report, as duly filed with the United States Securities and Exchange Commission pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, and filings with the Philippine Stock Exchange in 2012. PLDT discloses the content of a Shareholders Agreement bestowing "contractual veto rights" to the NTT Group, as follows:

> a) capital expenditures in excess of US$50 million;
> b) any investments, if the aggregate amount of all investments for the previous 12 months is greater than US$25 million in the case of all investments to any existing investees and US$100 million in the case of all investments to any new or existing investees, determined on a rolling monthly basis;
> c) any investments in a specific investee, if the cumulative value of all investments made by us in that investee is greater than US$10 million in the case of an existing investee and US$50 million in the case of a new investee;
> d) issuance of common stock or stock that is convertible into common stock;
> e) new business activities other than those we currently engage in;

f) merger or consolidation.[109]

X. THE THREE PRINCIPLES OF A RIGOROUS CONTROL TEST

Based on the foregoing discussions, we postulate the following three principles of a rigorous test of voting power, which are lacking in the Control Test: (1) monotonicity, (2) *a prioricity*, and (3) probability.

"Monotonicity" means that as the value of the voting power measurement increases or decreases, the actual degree of control that it describes likewise increases or decreases. "*A prioricity*" means that, in measuring degrees of control, we make no assumptions about the preferences of stockholders in forming coalitions. "Probability" is a consequence of *a prioricity*—since we make no assumptions about stockholder preferences, the voting power measurement must consider all possible stockholder coalitions and their corresponding voting outcomes, in order to determine which stockholder is most or least likely to dictate a voting scenario.

A. Monotonicity

The higher the number of shares of stock owned by a stockholder, the higher the amount of economic rights there is. This is not true in the case of control or voting rights, as measured by the Control Test. As demonstrated in the previous sections, increasing voting rights does not necessarily increase voting power, and decreasing voting rights does not necessarily decrease voting power. Hence, shareholding size or voting weight has a "non-monotonic" relationship with voting power.

Contrast this with the voting power measurement we discussed in the previous sections, where a higher I % indicates more control and a lower figure indicates lesser control. In this method, the magnitude of a stockholder's I % is "monotonic" with the actual degree of control in the corporation.

B. *A prioricity*

The Control Test, as applied by the courts in corporate nationality disputes, makes *a priori* assumptions about the preferences of stockholders in forming coalitions. For example, given a voting weight distribution of {40, 20,

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[109] Phil. Long Distance Telephone Co., Annual Report (Form 20-F) (April 2, 2014), US Sec. and Exchange Commission, *available at* https://www.sec.gov/Archives/edgar/data/78150/000119312514390771/filename1.htm.

20, 20} with P1 as a foreign stockholder, and given a foreign equity cap of 40%, the Control Test adds up the individual voting weights of P2 and P3 and P4, for a combined weight of 60%. The Control Test therefore assumes a fictional voting scenario where the three Filipino stockholders will combine to form a coalition in order to block a motion by P1. It is because of this assumption that the Control Test treats the corporation as a Philippine national, since it is under the *de jure* control of Filipino stockholders.

In our proposal, we do not make an assumption about stockholder preferences. Absent any prior information, the *a priori* assumption should be that all possible stockholder preferences are equally likely. In the {40, 20, 20, 20} distribution, there is no basis to combine the voting weights of Filipino stockholders by virtue of their common nationality. P1 is just as likely to form a coalition with P2 as P2 is likely to form a coalition with P3 or P4.

C. Probability

Considering that we have no *a priori* information about stockholder preferences in forming coalitions, a rigorous Control Test must consider all possible stockholder preferences and, therefore, all possible coalitions. Each possible coalition contains information about which stockholder can make the coalition win or lose in a given voting scenario. The formula for Voting Power Distribution (V_i) measures the frequency of this information, from which is derived the likelihood that a stockholder's motion will prevail.

D. Conclusion

This paper lays down the theoretical foundation of a rigorous voting power measurement method, as applied in the law on the determination of corporate nationality for the purposes of foreign investments. As agenda for future research, the next step is to survey the current state of voting power structures in corporations engaged in partially nationalized economic activities, with the aim of ascertaining whether—using voting power index in cooperative game theory—Filipino majority stockholders truly have "effective control" of said corporations.

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