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Barriers to Financial Institutional Development: A Preliminary Theoretical Exploration of Social Capital, Growth and Institutional Development

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Abstract

This note sets forth a preliminary theoretical analysis of the role that social capital plays in the decision faced by states to develop their financial institutions. While financial institutional development has been considered to play a role in both translating portfolio and foreign direct investment into growth, many states choose not to develop their financial institutions. This article analyzes this problem through a simple signaling model related to the underlying levels of social capital within a state, and finds that social capital's effect on the decision to develop financial institutions is tied to the ability of social capital to translate investment into growth.

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1 Introduction

If a state is better able to grow its economy by drawing in foreign capital when it possesses strong financial institutions, why do so many states choose not to reform their underdeveloped systems? The empirical literature on the effects of capital inflow on economic growth is characterized by uncertainty and qualification (Durham, 2004, 2003; Li and Liu, 2005; Blonigen and Wang, 2004). While studies have consistently shown that foreign direct investment (FDI) can potentially enhance economic growth, the benefits of FDI and other capital inflows have been shown to either be contingent upon (Borensztein et al., 1998; Durham, 2004), or enhanced by (Alfaro et al., 2004; Catrinescu et al., 2009), the existence of developed financial institutions. Thus, not only does possessing well developed institutions help draw capital into a state, but the ability of the state to translate FDI into growth is dependent upon these institutions. Despite the vast literature extolling the virtues of well developed financial institutions, many states have neglected to modernize their financial systems.

An explanation for this phenomenon may be found in another line of literature on economic growth. In his seminal book, *Making Democracy Work*, Robert Putnam (Putnam et al., 1994; Helliwell and Putnam, 1995) observed a potential causal relationship between social capital and economic growth en route to explaining social capital's effect on institutional performance, and how disparate levels of social capital have led Northern and Southern Italy to behave differently. While studies of the relationship between FDI and economic growth have come to a variety of conclusions, the positive causal relationship between social capital and economic growth has proven to be robust over the years (Putnam et al., 1994; Helliwell and Putnam, 1995; Keefer and Knack, 2008; Akçomak and Ter Weel, 2009; Woolcock and Narayan, 2000).

According to Knack and Keefer, "Trust, cooperative norms, and associations within groups each fall within the elastic definitions that most scholars have applied to the term social capital," and this is a position widely supported by the literature (Keefer and Knack, 2008; Coleman, 1988; Jamal, 2009; Uslaner and Conley, 2003). Although the concept of social capital has been operationalized in many ways, it has generally been defined as the level of interpersonal trust shared between a group of individuals (Keefer and Knack, 2008). While Putnam defines social capital broadly, and in a manner that invokes notions of reciprocity and civic norms within a society, the concept of generalized interpersonal trust among a citizenry lays at the heart of Putnam's conceptualization of social capital since it is the trust-building capability of associational life that leads to a greater adherence to civic norms under his theoretical framework (Putnam et al., 1994; Jamal, 2009; Rothstein and Stolle, 2008).

Modern economic activity is a creature of contract. Without an individual placing some amount of trust in the individual or entity they are contracting with, or the individuals who are charged with enforcing that the terms of the contract be met when there is an attempted breach, contracts are meaningless. As such, if we define trust as the belief that others are willing to behave reciprocally when we take on risk in relation to them (Coleman and Ostrom, 2011), some level of trust must exist for any economic activity to take place (Arrow, 1972).

Moreover, where there are low levels of trust in a society, there are fewer partners that an individual will be willing to contract with, and thus, the allocation of resources within the society is more likely to be less optimal than when there are high levels of trust and a greater number of potential partners (Woolcock, 1998; Woolcock and Narayan, 2000; Shamaileh, 2017). Furthermore, the performance of the institutions meant to foster cooperation rely on the trust of individuals in the agents charged with enforcing the rules (Putnam et al., 1994; Grosser and Schram, 2006; Evans, 1996; Pretty and Ward, 2001; Coffé and Geys, 2005; Sabatini, 2009). Yet even if there were to be trust in the agents of government to remedy breaches, reliance on such institutions is costly, and therefore, groups that are forced to utilize such institutions will operate less efficiently than those who do not. Although institutions can help foster greater cooperation prior to governmental action, many breaches are not readily apparent or foreseeable, and therefore, where there are low levels of trust, individuals will expend greater energy and resources on preventing and detecting breaches.

While the relationship between social capital and economic growth and institutional performance has been well established, and the strength of financial institutions has been shown to condition the effects of capital inflow, little work has been done to tie these literatures together. The crux of this article is not to undermine the importance of financial institutions and their effects on economic performance, but rather, to explain why states may choose not to reform their institutions despite these benefits, and the positive signal financial institutions send regarding the level of social capital within a state. The core finding of this preliminary theoretical exploration is that whether a state institutes financial reforms related to foreign investments hinges on whether it can translate investment into growth at levels that are sufficient to justify the costs of institutional development.

The notion that financial institutions or policies may serve as signals to investors is not new (Bartolini and Drazen, 1996, 1997), yet this paper is novel in that it incorporates the concept of social capital to explain why a state may choose not to develop institutions that protect investors. A simple signaling model of a state's decision to either enact financial reforms or not, and a foreign investor's subsequent decision regarding whether to invest in a state is presented in the following section. In modeling this process, I attempt to shed light on how the level of social capital in a state affects a governments decision to enact financial institutional reform.

2 The Model

The model's framework derives from the classic job market signaling model developed by Michael Spence (Spence, 1973; Patty, 2015). The model is limited to two players, a state, C , and a foreign investor, I . Nature, N , makes the first move and either chooses a high level of social capital, h , with probability p or a low level of social capital, l , with probability $1 - p$, which is observed by C but not by I . While foreign investors may have some knowledge of the social dynamics within a country, I assume that the state is significantly better positioned to have knowledge of the level of social capital and the types of behaviors that fundamentally shape economic interactions within the country. C subsequently chooses whether to enact

financial institutional reform, f , or to maintain the status quo, $\neg f$, and this decision is observed by I . For the sake of simplicity, when the state chooses F , the model assumes that C 's institutions have been reformed to operate at the optimal level. I then decides whether to invest, v , or not invest, $\neg v$, in C .

2.1 The State's Payoff

C gains economic growth, G , when an investor chooses to invest in the state and C plays f , and that payoff is higher, G_h , when there are higher levels of social capital than when there are low levels of social capital G_l . Enacting institutional reforms, however, is costly, and thus, C incurs a cost, $Y \leq G_l$. Therefore, when $N = h$, $S_C = f$ and $S_I = v$, C receives a payoff of $G_h - Y$, and when $N = l$, and all other variables are held constant, C receives a payment of $G_l - Y$. $G_h > G_l \geq Y \geq 0$. When C plays f , and I responds with $\neg v$, C incurs a cost of $-Y$, but does not receive any of the growth benefits since their reforms were unable to spur investment. This payoff does not vary between high and low levels of social capital.

When C plays $\neg f$, C 's payoff when I responds with $\neg v$ is simply 0 since C does not bear the cost of creating any institutions and does not gain investments. If I responds with v , however, C receives a portion of the benefit it would incur under F without incurring any extra cost. Let $0 < D < 1$ represent the level of institutional development present in C , so that $(1 - D)G$ represents the difference in growth achieved by a completely developed state and growth in a state whose system is less than fully developed. Therefore, when C plays $\neg f$, and I plays v , C 's payoff is simply DG_h when the level of social capital is high, and DG_l when the level of social capital is low.

2.2 The Investor's Payoff

Whenever I chooses not to invest, $\neg v$ in country C her payoff is 0. If I plays v , let $Z > 0$ represent the amount she has invested, and $R \geq -1$ represent the return on her investment. Under a fully developed system, her payoff is $Z(1 + R) - Z$ or simply ZR . I 's returns from investment when social capital is high is higher than when social capital is low and always greater than 0. Therefore, $R_h > R_l$ and $R_h > 0$; and $ZR_h > ZR_l$. Note that $R_l \geq -1$, but need not be greater than 0.

If C chooses to play $\neg f$, the payoff achieved by I for playing v declines. Where $R > 0$, the payoff I receives for playing v is ZDR rather than ZR , which is the payoff when C plays f . Since R_h is always greater than 0, the payoff for playing v is always positive when social capital is high. When social capital is low, however, the payoff is not necessarily positive and the function is not necessarily linear. Under the condition $R_l \geq 0$ the function is $U_I(v|l\neg f) = ZDR_l$, but when $R_l < 0$, $U_I(v|l\neg f) = (ZR_l)/D$. Beyond simply allowing me to contravene the problems associated with modeling this equation linearly by erroneously showing that losses when $R < 0$ decrease when there is no financial reform, this modeling strategy also allows me to depict the risk of investing in a state that has very underdeveloped financial institutions. When $(ZR_l)/D < -Z$, $U_I(v|l\neg f) = -Z$, so that an investor cannot

lose more than her investment.

3 Equilibria

Despite the simplicity of the model, it provides interesting perfect Bayesian equilibria (PBE) that help illustrate how social capital affects a government's decision to revamp its financial institutions. Separating and pooling equilibria will be presented in the body of this note. Semi-pooling equilibria are presented in the *Appendix* along with all of the proofs for the model.

3.1 Separating Equilibria

Lemma 1: *When a) I assigns a probability of 1 to the state of the world being h , or b) $R_l > 0$, $S_I = v$.*

Proposition 1: *The country only institutes financial reforms when social capital is high, and the investor always invests. When $R_l \geq 0$ and $\frac{G_l - Y}{G_l} \leq D \leq \frac{G_h - Y}{G_h}$, the strategy profiles $S_C(h) = f$, $S_C(l) = \neg f$ and $S_I(f) = S_I(\neg f) = v$ are in equilibrium.*

This equilibrium is perhaps the most important one presented in this note since it is the only separating equilibrium derived from the model that does not rely on a knife-edge condition. When the expected returns on an investment in a state with low social capital is positive, I prefers to invest than to not do so since her utility is always greater than 0. C prefers to enact financial reform when the current level of development is large enough to justify reform, and levels of social capital are high, but prefers to not enact reform when social capital is low and the level of development does not allow the state to fully capitalize on the growth benefits that accompany financial institutions. Furthermore, this PBE does not take hold only at outlier values of the conditions in the model, but rather, under parameters that are likely to encompass many emerging states that are not yet fully developed, yet not at the lower levels of development. Moreover, the greater the disparity between the values of G_h and G_l , the larger the range of values of D for which this equilibrium exists. Although this is not specifically modeled, it does imply that if a state responds especially sensitively to issues of interpersonal trust, or the difference in trust levels is large, there are a wide range of states that could fall under this equilibrium.

Proposition 2: *The country only institutes financial reforms when social capital is high, and the investor only invests when financial reforms are instituted. When $R_l \leq 0$ and $G_l = Y$, the strategy profiles $S_C(h) = f$, $S_C(l) = \neg f$, $S_I(f) = v$ and $S_I(\neg f) = \neg v$ are in equilibrium.*

Although this separating equilibrium exists only under the knife-edge condition that $G_l = Y$, this is due to the condition that $G_l \geq Y$ that was imposed in order to reinforce the notion that even where the benefits of economic growth at least equal the costs of institutional reform, states may be optimizing their utility by not creating or improving such institutions. Therefore, while this equilibrium relies on the condition that $G_l = Y$ if we were to relax the assumption that $G_l \geq Y$, this equilibrium would hold when $G_l \leq Y$.

Proposition 3: *A country will never utilize a strategy where it institutes financial reforms when social capital is low, and not institute financial reforms when social capital is high. There is no separating equilibrium where $S_C(h) = \neg f$ and $S_C(l) = f$.*

If I were to play V against each type, C would prefer to play f . Given Lemma 1, we know that I will always play V against type h , and thus, the only other option is to play $S_I(\neg f) = V$ and $S_I(f) = \neg v$. However, if I were to play this strategy, C would prefer to play $\neg f$. Therefore, no separating equilibrium exist with this profile. This result further illustrates how social capital works to drive those governments in states with high levels of interpersonal trust to improve institutional performance, and acts as a barrier to states with low levels of social capital from improving upon their own institutions.

3.2 Pooling Equilibria

Proposition 4: *A country always reforms its financial institutions, and an investor always invests. When $D \leq \frac{G_l - Y}{G_l}$ and a) $R_l \geq 0$; or b) $R_l \leq 0$, $p \geq \frac{-R_l}{R_h - R_l}$ and $Pr[h|\neg f] \geq \frac{-R_l}{R_h D^2 - R_l}$; the strategy profiles $S_C(h) = S_C(l) = f$ and $S_I(f) = S_I(\neg f) = v$ are in equilibrium.*

While, generally, pooling equilibria are not as informative as separating equilibria, this pooling equilibrium, as well as the one that follows, derived from the model is an exception. The reason that these equilibria are of crucial importance is that this note is primarily concerned with why states may choose not to reform their institutions. *Propositions 4 and 5* present the only equilibria in the paper where financial reforms are always instituted, and, thus, a brief examination of the conditions required to maintain these equilibria may be fruitful.

Much of the literature has been devoted to praising the virtues of increasing FDI and reforming institutions. This equilibrium, where investment is made in the state under any circumstance, and states always choose to reform their institutions, only exists at sufficiently low levels of development. It is the state that improves its situation by defecting when $D > \frac{G_l - Y}{G_l}$, which illustrates why a state may be better off choosing not to improve its financial institutions when investors are willing to invest if there are no reforms and the

institutions have crossed a threshold of development.

Proposition 5: *A country always reforms its financial institutions, and an investor only invests when financial institutions are reformed. When $R_l \leq 0$, $p \geq \frac{-R_l}{R_h - R_l}$ and $Pr[h|\neg f] \leq \frac{-R_l}{R_h D^2 - R_l}$, the strategy profiles $S_C(h) = S_C(l) = f$, $S_I(f) = v$ and $S_I(\neg f) = \neg v$ are in equilibrium.*

Unlike the PBE in Proposition 4, this pooling equilibrium is not as restricted by conditions, and does not require any potentially dubious off-the-equilibrium path beliefs. Under this equilibrium, C 's strategy is to always enact financial reform, and I chooses to invest if C has enacted institutional reforms, but not when C has not. While a state's institution of financial reforms do not represent a credible signal, it is the investor's belief that states that do not institute financial reforms have low levels of social capital that drives this result.

Proposition 6: *A country never reforms its financial institutions, and an investor always invests. When $D \geq \frac{G_h - Y}{G_h}$ and a) $R_l \geq 0$; or b) $p \geq \frac{-R_l}{R_h D^2 - R_l}$ and $Pr[h|f] \geq \frac{-R_l}{R_h - R_l}$, the strategy profiles $S_C(h) = S_C(l) = \neg f$ and $S_I(f) = S_I(\neg f) = v$ are in equilibrium.*

The probability that the state of the world is h must be high relative to the rate of return for I in order for this equilibrium to hold, since I only maintains her investment in C due to the belief that there is a high probability that C 's type is h . If I is investing in an industry that is not particularly tied to local social and economic interactions, such as oil, she will invest, whether or not financial institutions are developed. Even where a risk of loss is present, as it approaches 0, and as the potential profits from an investment grow if the environment is characterized by high levels of social capital, the wider the range of values able to sustain this equilibrium. More importantly, C is more likely to deviate from this equilibrium strategy when in state h than when in state l , and this is due exclusively to the ability of financial institutions to translate investments into growth, and not due to their ability to draw in investments.

Proposition 7: *A country never reforms its financial institutions, and an investor never invests. When $R_l \leq 0$, $p \leq \frac{-R_l}{R_h D^2 - R_l}$ and $Pr[h|f] \leq \frac{-R_l}{R_h - R_l}$, the strategy profiles $S_C(h) = S_C(l) = \neg f$ and $S_I(f) = S_I(\neg f) = \neg v$ are in equilibrium.*

When R_l , R_h and/or p are sufficiently low, investors will always choose not to invest, and states will always choose not to develop their financial institutions. The potential for investments to be procured by the state is a necessary condition for the state to institute financial reforms related to such investments. The fact that potential rewards are too low and the risks are too great drive away investments, making it unwise for a state to expend resources on the development of their financial institutions related to foreign investments.

Proposition 8: *A country never reforms its financial institutions, and an investor only invests when there are no financial reforms. When $R_l \leq 0$, $p \geq \frac{-R_l}{R_h D^2 - R_l}$ and $Pr[h|f] \leq \frac{-R_l}{R_h - R_l}$, the strategy profiles $S_C(h) = S_C(l) = \neg f$, $S_I(f) = \neg v$, and $S_I(\neg f) = v$ are in equilibrium.*

This equilibrium holds only due to the highly dubious off-the-equilibrium path belief that countries that institute financial reforms are less likely to have high levels of social capital than those that do not institute financial reforms. Nevertheless, this PBE is the only one where an investor would choose to invest only if financial institutions are not developed.

4 Discussion

This model produced only one separating equilibrium that did not rely on a knife-edge condition. In that equilibrium, a state reforms its institutions when social capital is high and does not do so when social capital is low, but its decision is not driven by the investor's unwillingness to invest when social capital is low. It is social capital's relationship to the translation of foreign investments that are received into economic growth that drives this result. Under conditions where financial institutional reforms do actually spur investment, both states with high and low levels of social capital will choose to reform their institutions, and, thus, institutional reforms do not reveal any information about the country's type.

Perhaps more importantly, an investor will always choose to invest when the returns on investment are high. There is an extensive line of literature on what has been termed the resource curse (Ross, 1999, 2001, 2012; Humphreys et al., 2007; Hammond, 2011), and *Proposition 6* may shed light on this phenomenon. Where the costs of institutional development are not high relative to the benefits of institutional development when social capital is high, and investors always benefit from investing, a state will not reform its institutions. The ability of natural resources to provide significant returns on investment in the absence of strong financial institutions and its relative independence from the local population means that investors will likely benefit from investing in them even when social conditions within a state are not generally favorable for investors. Since investors are willing to invest in such an environment, states can forgo financial institutional development where it does not believe that growth from foreign investments will be significantly enhanced from developing its institutions. This should lead to lower levels of institutional development among states where the natural resources sector is the primary driver for foreign investment.

Finally, institutional reform will only be enacted when foreign investments are made, but institutional development does not directly follow from investment. Foreign investment is a necessary but insufficient condition for institutional reform. In order for a state to reform the institutional framework related to foreign investments, it must actually anticipate that foreign investment will be drawn into the state. When the profitability of investment in a state hinges on the norms associated with local interactions, and investors believe that social capital is likely to be low relative to the potential benefits of investment, states will not develop their institutions, and investors will shy away from investing.

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