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Review of de Soto's *The Mystery of Capital*[1]

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1. *Introduction*

FORMAL CAPITAL MARKETS function poorly in developing countries. In fact, for the majority of developing-country residents—and even the majority of business owners—formal credit markets do not exist. The consequences of this are well understood. Capital is misallocated. Lucrative investment opportunities are forgone. Potential entrepreneurs are unable to transform ideas into businesses. While the problem is evident, its solution is not. Solving it requires first identifying the reason that capital markets have failed to take hold.

In *The Mystery of Capital*, Hernando de Soto promotes one explanation. Capital markets fail for the majority because the majority do not own formally titled property. While the majority of residents in developing countries do own property, ownership of the property is secured informally, through neighborhood associations or mafias, for example, rather than through formal titles and a property registration system. The lack of formal titling prevents the use of property as collateral, and hence prevents the capital embedded in these assets from being "unlocked." Entrepreneurs in developed market economies are able to turn their houses into capital to start businesses; entrepreneurs in the developing world are not. This inability to convert such assets into capital is "the major stumbling block that keeps the rest of the world from benefiting from capitalism . . ."

Though he has scarcely published an article in an academic journal, de Soto's work has had a major impact on development economics. His first book, *The Other Path*, described the labyrinth of regulations and permits required to do business or build a house in Lima, Peru. The regulations create one of the largest rates of informality in the world, as entrepreneurs routinely ignore or pay to avoid the regulations. Businesses are unregistered. Land is untitled. De Soto portrays informals as energetic entrepreneurs, struggling against the state. *The Other Path* was a smash hit in the popular press. Academics were more skeptical. They challenged his methods. They challenged his results. (See, for example, R. G. Rossini and J. J. Thomas 1990.) In the end, though, *The Other Path* had a significant impact on the academic literature on the informal sector in the decade after its publication. Arguably, the book was important in

[1] Hernando de Soto. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else.* New York: Basic Books. Pp. 276. ISBN 0–465–01614–6.

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shifting the focus toward regulation and informality.[3] We have come to agree with his view that informals are entrepreneurs, not marginals. *The Other Path* had legs, not because of its academic rigor but because of its ideas.

The Mystery of Capital has much in common with *The Other Path*. It is colorfully written and entertaining. It focuses on an important issue. Its lack of empirical rigor is compensated for by a wealth of ideas. But while *The Other Path* focused on actions the state takes that hinder entrepreneurship and growth, *The Mystery of Capital* looks from the other side. The focus is on actions states fail to take: creating and enforcing private property rights.

2. *The Mystery*

The empirical basis for De Soto's argument in *The Mystery of Capital* is his finding that the poor in the developing world possess vast assets. "[E]ven those who live under the most grossly unequal regimes possess far more than anybody has ever understood" (p. 16). Examining urban dwellings in five cities—Cairo, Lima, Manila, Mexico City, and Port-au-Prince—de Soto concludes that the poor have accumulated a small fortune. But they lack formal title to the land, which prevents them from capturing the full value of their investment. Most importantly, in de Soto's view, the lack of formal titles prevents them from using the land as collateral, prevents the "unlocking" of capital from the assets. While entrepreneurs in the United States routinely start new businesses with capital raised from second mortgages on their houses, entrepreneurs in the developing world are unable to do so. No small sum is involved. Extrapolating from the five cities he examined to all of the developing world, de Soto concludes that there are $9.34 trillion in informally owned assets. (I'll say more about this estimate later in the review.)

People invent informal institutions when formal institutions are missing or absent. Absent formal titles, as de Soto says: "squatters, housing organizations, mafias and even primitive tribes manage to protect their assets quite effectively" (p. 59). The main problem with informal enforcement is not security of ownership. Indeed, the problem is that ownership may be too secure. For land to be used as collateral, either for a loan or in support of a business transaction, the land must be subject to seizure by the bank. Where ownership is secured by informal means, such seizure is difficult. More generally, de Soto's view is that legal systems in most developing countries provide too much protection to land owners: ". . . the law and official agencies are trapped by early colonial and Roman law, which tilt toward protecting ownership" (p. 62).

The inability to use assets as collateral also means that transactions must be limited to smaller communities of traders. Potentially profitable trading opportunities must be passed up; the extent of division of labor is limited.[4] Once a property system is established, people are freed to choose from among a larger set of trading partners. Trade between strangers is possible because with a functioning property system, there are no strangers. Everyone's economic worth is relatively easy to ascertain. While much of de Soto's book focuses on the connection between property rights and capital market development, the connection between

[3] For example, a recent World Bank project on the regulation of entry into markets states: "Our work owes a great deal to de Soto's path-breaking study of entry regulation in Peru" (Simeon Djankov et al. 2000).

[4] Avner Greif (1994) and John McMillan and Christopher Woodruff (2000) discuss similar limitations when trading is confined to closed circles.

property and trade is perhaps more novel and insightful. Formal property systems help take the anonymity out of anonymous markets. I may not know you, but I can quickly confirm whether you own real estate, automobiles, or other assets. I can also learn whether you have pledged those assets in support of other transactions. And, within some limits, I can take the assets from you if you do not perform as promised in our relationship. In de Soto's words, a full property registration system means that "People who do not pay for goods or services they have consumed can be identified, charged interest penalties, fined, embargoed, and have their credit ratings downgraded" (p. 55).

I was reminded of a story the owner of a footwear factory in Mexico told me about ten years ago. When a client failed to pay him for the delivery of some goods, he took the client to court. The court ruled in his favor and awarded him his client's car. When he went to take delivery of the car, he found that the client had sold it. Whether the story was true or not, it was certainly plausible in Mexico; it would not be in the United States. Why? Because the court would place a lien on the car immediately upon making the ruling. Sale of the car would not be possible (or at least would have been much more difficult), because an efficient titling system would have prevented it.

There is at least some empirical evidence supporting de Soto's claim that formal property rights allow trade with strangers. Surveying settlers on Brazil's Amazonian frontier, Lee Alston, Gary Libecap, and Robert Schneider (1996) report that "having title is perceived as an advantage by settlers, as it broadens the range of potential purchasers" (p. 29). Jean Lanjouw and Philip Levy (1998) report the results of surveys of land owners they conducted in Guayaquil, Ecuador in 1996. Titled and untitled landowners were asked whether they would be able to contract with a stranger for the sale or rental of their property. Those with formal titles were significantly more likely to say they could do so.

3. *Who Let the Dogs Out?*

How do formal property systems like those espoused by de Soto arise? Even an institutionalist like Douglass North tends to think about this question in the standard economic language of costs and benefits: "As a first approximation, we can say that property rights will be developed over resources and assets as a simple cost-benefit calculus of the costs of devising and enforcing the rights, as compared to the alternatives under the status quo" (North 1990).

De Soto would argue that an analysis of the costs and benefits is too narrow a focus. An individual owner internalizes some of the gains from formal title—an increase in land value, increased access to credit, for example. But other gains are external to the person receiving the title. The ability to trade with strangers has network characteristics—I gain from you being formalized. Property registration systems help utilities collect from their customers. My costs will be lower if you are forced to pay. Thus, the benefits of universal titling might exceed the costs and the system may fail to develop spontaneously. Indeed, this is the case in the contemporary developing world, in de Soto's view. Government action is required on two fronts. First, governments must determine who the owner of a given property is. Second, someone must create the registration and information systems that are the backbone of a formal property rights system. The bulk of these services have usually been provided by governments.

Once committed to formalizing property ownership, how should governments determine who the rightful owners of land are? De Soto describes a walk through rural Bali. As he passed by farms, dogs barked. Indeed, a different dog barked each time de Soto passed onto land owned by a different farmer. "Those Indonesian dogs may have been ignorant of formal law, but they are positive about which assets their masters controlled. I told the ministers that Indonesian dogs had the basic information they needed to set up a formal property system" (p. 162). Governments need only formalize the informal arrangements that exist. Though he doesn't discuss it in the book, de Soto clearly recognizes that it is not always so simple. Governments must also be prepared to adjudicate those cases where conflicts of ownership are present.

Titling programs have focused too much on technological requirements—mapping systems, data bases, and so on—and not enough on changes in legal attitudes. De Soto provides an extended discussion of the development of formal property rights in the American west. The crucial juncture of this process was the recognition of squatters' rights. Settlement of land in the United States ran well ahead of formal property rights systems, particularly on the frontier. The extralegal arrangements were coordinated through claims and miners associations—organizations similar to the squatters associations that operate in Latin America today. While the courts stuck to precedence of protection of ownership set by British law, politicians pushed for recognition of squatters' rights. Why? Because squatters represented votes, often the majority of votes in new states. Development of a formal property system was driven primarily by political, not economic actors.

The same should be true in developing countries today, since the largest benefits of formal titling, in de Soto's view, accrue to the poor. After all, the poor own most of the informal assets. While this may be the case,[5] it is worth pointing out the irony in this argument. Much of the land on which the informal houses are built was obtained through invasion, taken from its previous owners without compensation. For example, among those in Lanjouw and Levy's sample from Ecuador, 92 percent obtained their land by squatting. The current owners have these assets only because property rights have not been sufficiently enforced in the developing world to prevent them from being taken. Would an amnesty for those who have previously benefited from invasions of others' land lead to greater respect for property? Would it instead encourage the hope for some future amnesty, and hence increase the motivation for invasion?

4. *Will Credit Be Given?*

De Soto is far from the first to propose a program of formal titling. Many titling programs, often quite extensive in scope, have been carried out by developing countries in recent decades. De Soto dismisses these efforts in the space of a paragraph, saying "an extraordinary number of them had been prematurely abandoned because of poor results . . . and with the exception of some rural Thai property certification programs, none of these efforts succeeded in turning extralegal assets into legal ones. We certainly found no evidence that assets were being

[5] There is not unanimous agreement on this. Michael Carter and Pedro Olinto (2000), for example, use data from rural Paraguay to argue that the gains from titling may elude the grasp of the poorest landowners and accrue only to relatively wealthier producers.

transformed into capital" (p. 169). Why have the titling programs failed? De Soto claims that the failure results simply from a failure of governments to recognize and incorporate the informal rules for ownership and exchange of property which govern property ownership in their societies. Fix this, and titling will lead to the creation of formal property, and to the unlocking of capital. This is a crucial argument, which the reader is asked to accept on faith. It is a leap I found myself unwilling to take. Certainly this wasn't the problem that prevented an unlocking of capital in Peru after the program of "formalization" (which de Soto led) in the early 1990s.

There is a considerable body of research examining the outcomes of previous titling programs.[6] Does this research tell us about the effect of titling on access to credit? The gains from formal titling envisioned by de Soto depend on the outcome of three separate transformations. Property has to be transformed into collateral, collateral into credit, and credit into income.[7] How much leakage might we expect in each of these transformations?

Most evidence suggests that access to credit is increased, though in limited proportions. Two studies from the case of Thailand referenced by de Soto are illustrative. Gershon Feder et al. (1988) study the effects of formal titles in four provinces in rural Thailand. They find that owners of untitled land are as likely to receive credit as are farmers with titled land, even from banks. Among those with untitled land, group lending commonly substitutes for collateral. However, the size of loans obtained from banks is larger by at least 50 percent among those possessing formal title.[8] Titles have little effect on credit obtained from non-bank sources such as traders. But since banks provide about half of all credit, the effect of having a title is substantial.

Feder et al. focus on loans used for farming rather than enterprises. Anna Paulson and Robert Townsend (2000) report data from separate surveys in rural Thailand, focusing on the formation of household enterprises. Households which own businesses are much more likely than other households to have titled land, suggesting that titled land may encourage entrepreneurship. But banks provide less than 10 percent of businesses' startup capital, even though 60 percent of business-owning households have titled land. One reason that bank credit comprises such a small part of capital is that collateral requirements are steep. Collateral is valued at nine times the size of loans, on average.[9]

Over collateralization represents serious leakage in developing country credit markets. In Mexico, for example, banks require collateral averaging three times the value of the loan (Rafael La Porta,

[6] See Klaus Deininger and Hans Binswanger (1998) for a good summary of much of this research.

[7] Land titles may also increase the demand for investment as well. Timothy Besley (1995) shows that farmers who have various transfer rights to their land in Ghana invest more in improving their land than do farmers without transfer rights. Land rights have important effects on durable investments, such as those made in cocoa trees or drainage systems.

[8] Feder et al. run regressions for each of the four provinces they surveyed. The effect of title on loan size ranges from 52 percent to 521 percent. Titles affect loan sizes for two reasons. First, titled land can be used as collateral. Additionally, having a formal title increases the value of land, and hence the value of the available collateral. See Feder et al. for further discussion of this.

[9] A positive association between formal title and access to credit has been found in other studies as well. See, for example Carter and Olinto (1998), who find that formal title in Paraguay significantly reduces the probability that farmers with more than two hectares of land are credit constrained, but has no effect on farmers with less than two hectares of land. Several earlier studies are referenced in Feder et al. (1988).

Florencio Lopez-de-Silanes, and Guillermo Zamarripa 2001). This is at least in part the result of the difficulty of foreclosing on collateral in the event of nonpayment. The sort of broad-based, property registration system might help reduce foreclosure costs, but is not likely to be sufficient by itself.

Where credit is given, the evidence suggests that earnings are increased. Perhaps the broadest-based indication of this comes from the ten million households in developing countries that have gained access to credit not through collateral, but through peer lending programs. The range of estimated impacts of access to credit from these programs is quite large, but the most careful estimates suggest income increases by at least 25 percent (Jonathan Morduch 1999). The success of micro credit programs suggests that if de Soto's collateral could be translated into credit, then the credit would likely have a significant impact on earnings.

The Thai experience highlights both the promise and the limitation of de Soto's prescription. Formal titles increases access to formal credit. Capital markets function poorly in developing countries for reasons other than property title. Unlocking capital will require more than just recognizing existing informal property rights. At a minimum, a set of complementary reforms—for example, of bankruptcy laws and banking regulations—will be required.

5. *Details, Details: The Value of Informal Holdings*

The style of the book is certain to frustrate academics. De Soto gives the illusion of rigorous study while providing almost no details. He describes the "thousands of days [spent] counting buildings block by block" (p. 31), estimating values based on size, building materials, and comparable sales prices. But he never says how he and his team determined whether a building was formal or informal. He provides an estimate of the value of informal land in rural areas as well, without ever mentioning any study of rural areas.

This makes the book's marquee calculation—that citizens of developing countries own untitled real estate worth $9.34 trillion (about $4100 for every person in the developing world)—difficult to interpret. The estimate makes good material for the jacket cover—the total "is very nearly as much as the total value of all the companies listed on the main stock exchanges of the world's twenty most developed countries" (p. 35), de Soto says.[10] The figure is mentioned prominently in stories about the book and its author in *The Economist* and the *New York Times Magazine*. Based on the limited data provided, it appears to be quite substantially exaggerated.

The estimate extrapolates data gathered in four or five countries to all of the developing world. (Data from Mexico are not provided in the book, so it is not clear whether they were used.) According to table 2.1, the calculation assumes that 85 percent of urban dwellings are informal. This percentage is much higher than that in three of the four countries for which de Soto provides detail—Peru (53 percent), the Philippines (57 percent), and Haiti (68 percent). Only in Egypt is the number higher (92 percent).

Moreover, one wonders whether his

[10] The book was published in 2000, but it is not clear when this phrase was penned. The New York Stock Exchange reports that the market capitalization of companies listed on that exchange alone passed $9.4 trillion at the end of 1997, and reached $.4 trillion at the end of 2000. This value includes NYSE listed common and preferred shares, but does not include debt issues of the listed firms.

data from Haiti, Egypt, Peru, Mexico, and the Philippines have much to do with the reality in China or India, or in the rest of the developing world. In their study of levels of informality around the world, Schneider and Enste (2000) estimate that unregistered activity accounts for 68 percent of the economy in Egypt, 50 percent in the Philippines, 49 percent in Mexico, and 44 percent in Peru. These rates are far above the averages for developing countries. In fact, each of the four countries (Haiti is not included in the Schneider/Enste data) has the second or third highest level of informal activity in its respective region. This makes them ideal countries for de Soto to study. But it makes them less than ideal countries from which to extrapolate estimates of informal activities or assets in other countries.

De Soto multiplies these informality rates by an estimate of the number of households in each of seven regions of the developing world. In this part of the exercise, each urban dwelling is assigned a value of just over $20,500. But this number, too, is far higher than in three of the four countries on which detail is provided: Haiti ($5730), the Philippines ($14,939), and Egypt ($16,403). Only in Peru is the estimated average urban dwelling more expensive ($21,471).[11] Since the per capita GDP of China ($750) and India ($440) are closer to Haiti ($340) than to Peru ($2440), one suspects that the $20,500 estimate is high.[12] Given the emphasis that de Soto places on the $9.34 trillion estimate, the lack of detail is frustrating.[13] But the data available in the book's appendix suggest that $9.34 trillion is an exaggerated estimate. Using data closer to those gathered by de Soto, if 65 percent of dwellings are informal and each dwelling is valued at $10,000, then the estimated value would be 60 percent less than de Soto's number.[14] If the rural data are overstated by a similar amount, then the value of informal assets would be about $3.6 trillion. This is still quite a large sum, but much less than claimed by de Soto. Given inevitable slippage in translating collateral into loans, the capital unlocked from these assets might be only a small percentage of that suggested by de Soto. The details matter.

To be fair, some of the difference between the more conservative estimate and de Soto's estimate might be made up by an increase in land values that accompanies formal titling. (It is not clear whether de Soto took this into account or not.) Alston, Libecap, and Schneider (1996) estimate that a formal title doubles the price of land in Brazil. Lanjouw and Levy (1998) find that land values are increased by a more modest 24 percent when a title is received in Ecuador. Other estimates generally have fallen in this range.[15]

[11] These numbers are my calculations based on the data provided in the appendix. These data show the number of urban informal dwellings and the value of those dwellings in the Philippines, Peru, Haiti, and Egypt. Similar data are provided for the rural sector. There is a similar lack of detail supporting the world wide estimate of $2.6 trillion of rural informal property.

[12] The GDP estimates are from the Human Development Report 2000. Purchasing power parity-based GDP per capita estimates place China roughly halfway between Haiti and Peru.

[13] De Soto does claim that "Whenever authorized to do so, we published our results obtained in each country . . ." (p. 31). But he does not say where the results were published.

[14] De Soto's estimate also includes land held informally in rural areas. Informal holdings are estimated to be 40–57 percent of total rural land, depending on the region. These percentages are all significantly below those reported for the four countries, which range from 67 percent in the Philippines to 97 percent in Haiti. No reference is made in the text about how the estimates for rural informality were obtained, nor are the values assigned to rural land—$3973 per hectare for cropland and $138 per hectare for grassland—justified.

[15] Emmanuel Jimenez (1984) finds an increase of 58 percent in the value of owned land in the

And even \$3 trillion is almost \$5000 per developing country household, an amount that is certainly large enough to start a small business in most developing countries. For example, the median replacement cost of capital in a survey of Mexican firms with five or fewer workers is about \$1000. (A comparable number for the United States is much larger, about \$40,000.)[16] If credit markets can be made to function for loans of such small scale, then "unlocking" informal real estate would provide an important source of capital for business startups. But the actual experience with such small-scale credit operations dampens the likelihood that the effects will reach the majority of informal landowners.

6. *Concluding Remarks*

The development literature has paid increasing attention in recent years to the effects of inequality on growth. A common feature of these models is that inequality hampers growth because loans cannot be collateralized. (See, for example, Philippe Aghion, Eve Caroli, and Cecilia García-Peñalosa 1999.) The standard reason for the inability to collateralize loans is that a large part of the population lacks assets. One policy implication of these models is that redistribution of assets from the wealthy to the poor can increase aggregate output.

De Soto agrees that substantial parts of the populations of developing countries lack access to credit—but not because they lack assets. The policy prescription from his view is quite different. Transfers of wealth are not the solution. Formalizing ownership provides the collateral needed to allow lending and to align the incentives of lenders and borrowers. Of course, even in de Soto's world, there are people without assets. So the results of the inequality models still apply to some part of the population. But the models are less relevant than might be implied by the size of existing credit markets, even in low income countries like Haiti. How much less relevant is an empirical question on which, unfortunately, de Soto provides limited evidence.

In a phrase he repeats often, de Soto claims to have "closed his books and opened his eyes." This is de Soto's style. He has contributed to our understanding of developing economies by opening his eyes in the past. Criticizing him for this would be like criticizing a dog for barking rather than purring. But it is unfortunate that he did not consider the evidence and experience on previous attempts at land titling (including Peru's efforts which he spearheaded a decade ago). Is the failure of titling programs in Thailand and other countries solely the result of not recognizing informal arrangements? Or did Thailand fail to take some actions that are necessary to completely unlock the capital of the assets held by the poor?

De Soto's own experience in Peru suggests that land titling by itself is not likely to have much effect. Titling must be followed by a series of politically challenging steps. Improving the efficiency of judicial systems, re-writing bankruptcy codes, restructuring financial market regulations and similar reforms will involve much more difficult choices for policy makers. These are swept under the rug in the text of *The*

city of Davao, Philippines. Joseph Freidman, Jimenez, and Stephen Mayo (1988) find that formal titles increase the value of land in Manila by 25 percent.

[16] The Mexican and U.S. data are my calculations based on data from the National Survey of Micro Enterprises (1998) for Mexico and the National Survey of Small Business Finances (1994) for the United States. The Mexican survey includes firms of up to fifteen workers in the manufacturing sector.

Mystery of Capital. Land titling is made to sound like a free lunch. But without a broad set of complementary reforms, property titling and registration systems are likely to have a more limited effect than de Soto's (very refreshing) enthusiasm would lead one to believe.

There is almost certainly something to what de Soto says in *The Mystery of Capital*. The question is, How much? The answer awaits better data, and better analysis of the data. But the stakes are not small. De Soto has the attention of policy makers at high levels in developing countries. His ideas contrast in non-trivial ways with the central focus of the development literature. Either the policy makers need to be alerted to the limitations of de Soto's proposals, or researchers need to give more attention to the connection between titling, credit markets, and entrepreneurship. The experience of *The Other Path* suggests that the latter is a likely outcome.

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