

Quantifying the Wealth of Nations: The Impact of Intangible Capital and Implications for Policy Formulation

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This short paper focuses on a recent study done by The World Bank entitled, “*Where is the Wealth of Nations? Measuring Capital for the 21st Century*.”² The World Bank’s self-styled ‘millennium capital assessment’ was done by the environmental economics department of the Bank with an eye toward asset management and sustainable development. I believe the study has serious implications for policymakers in areas from sustainable development to tax policy to education to immigration and beyond.

Intuitively, anecdotally, and empirically, we all know that a well-educated population and a stable investment-friendly environment produce greater national wealth than possible in undereducated and unstable societies. Thus national policy discussions as well as appropriation debates focus on allocation of resources to achieve the desired well educated populace and stable environment. But what tools are available to policymakers to buttress analysis of allocation of resources?

In this extremely intriguing study (produced in 2005 based on millennium year data), the researchers *quantified* the three major contributors to the total wealth of nations: natural, produced, and intangible capital. Natural capital includes the sum of non-renewable resources (oil, gas, minerals, etc.) and fertile land, forests, protected areas and aquifers. Produced capital includes factories, machines, equipment, products, industrial and urban infrastructure. Intangible capital includes all a nation’s assets that are neither natural nor produced.

Intangible capital is calculated as a residual—the difference between total wealth and the sum of produced and natural capital. The study explains that the intangible capital residual also includes governance elements that help raise the productivity of labor, i.e., if a nation has an efficient judicial system, clear property rights, and an effective government, the result will be greater total wealth and thus a higher intangible capital residual. (In the study, total wealth is estimated as the present value of future consumption; that is to say: if tomorrow you could never earn another dollar, then the amount of consumption you could enjoy for the rest of your life is equal to the value of assets such as bank accounts, housing, land, etc. that you have today.)

¹ This brief abstract, extrapolated from and, with permission, liberally quoted from the study by The World Bank, fails to do justice to the primary work. All deficiencies herein are solely attributable to this writer.

² *Where is the Wealth of Nations? Measuring Capital for the 21st Century* may be viewed in its entirety at www.worldbank.org.

This comprehensive snapshot of the wealth of 120 countries incorporates the effects of migration, population growth, and foreign assets including remittances; acknowledges the vital role of natural resources; and emphasizes the critical nature of savings and sound management as the basis of growth in any country.

We learn after subtracting the total of all of the world’s natural resources and all produced capital, that intangible capital is 80 percent of the total wealth of rich countries and 60 percent of the wealth of poor countries. The bottom line is not a surprise: the Bank finds that “rich countries are largely rich because of the skills of their populations and the quality of the institutions supporting economic activity,” i.e., because of intangible capital.

So the intangible capital residual component of national wealth is worth understanding. The economists sub-divide intangible capital into two major categories: ‘education’ (consisting of human capital, including raw labor plus the sum of knowledge, skills and know how of the population); and ‘social capital’ (represented by beliefs, levels of trust, attitudes, behaviors and the quality of formal and informal institutional infrastructure—including stability, transparency and other elements). Social capital is measured by the ‘rule of law index’—a tool utilized to measure the quality of governance and institutions. Education (human capital) is measured through schooling years per capita.

What the World Bank economists have painstakingly and skillfully done through regression analysis is to *quantify* these ‘intangibles’: the value of social institutions and education. The Bank calculates that social capital explains 57 percent of the intangible residual and education accounts for 43 percent of intangible wealth (which includes seven percent from remittances, a form of human capital). Under this analysis it is fair to say that roughly half of intangible wealth is attributable to education and half is attributable to social capital. This disaggregation and quantification of intangibles provides a useful paradigm for policymakers particularly when undertaking the cost-benefit analysis of a given policy.

As shown in the Bank’s table below, worldwide at the beginning of the 21st century, natural capital accounted for four percent of total wealth, produced capital for 18 percent, and intangible capital for 78 percent of a nation’s total wealth.

TOTAL WEALTH 2000
\$ per capita and percentage share

Income Group	Natural Capital	Produced Capital	Intangible Capital	Total Wealth	Natural Capital Share	Produced Capital Share	Intangible Capital Share
Low-income countries	1,925	1,174	4,434	7,532	26%	16%	59%
Middle-income countries	3,496	5,347	18,773	27,616	13%	19%	68%
High-Income OECD countries	9,531	76,193	353,339	439,063	2%	17%	80%
World	4,011	16,850	74,998	95,860	4%	18%	78%

This table makes several important points:

- i. Intangible capital represents the largest percentage of the total wealth per capita in most countries, whether rich or poor;
- ii. The share of total wealth of produced assets is virtually constant across income groups;
- iii. The share of total wealth of natural capital tends to decline with increasing income, while the share of intangible capital rises;
- iv. The *value* of natural capital per capita is substantially higher in rich countries, while the share of natural wealth is lower (the result of savings, management of resources, and productive investment).

The conclusion is inescapable: it is intangible capital—the combination of human capital and social capital—that is the dramatically decisive element in the wealth of nations. Human capital and social capital constitute the largest share of wealth in virtually all countries and that is true on a worldwide basis across a range of high, middle, and low income countries.

In the United States (similar to other high income OECD countries) natural capital is a very small proportion of overall wealth, \$15,000 per person (or about three percent); produced capital is \$80,000 per person (or 17 percent); and intangible capital is \$418,000 (80 percent). Mexico's total natural capital per person is \$8,500, \$6,000 of which is due to oil (14 percent), produced capital is \$19,000 (31 percent) and intangible capital is \$34,000 (56 percent). In the case of Jamaica, natural capital accounts for \$2,600 per person (six percent), produced capital accounts for \$10,000 (21 percent), and intangible capital totals \$35,000 per person (73 percent). While the dollar amounts cited are from the year 2000, it is not unreasonable to assume that the relative percentages have remained largely constant.

Parsing intangible capital a little more finely, the study finds in the social capital component that a one point increase in the rule of law index (on a 100 point scale) boosts total wealth per capita nearly \$3,000 in a high income country, by over \$400 in a middle income country, and by over \$100 in a low income country.

With respect to the education component, the study points to prior research suggesting that investment in primary education in low income countries produces 'the biggest bang for the buck.' That is, in a low income country \$1 spent on primary school provides a higher return than \$1 spent on higher education. Rather dramatically, a one year increase in the mean level of schooling in a low income country increases that country's intangible capital by \$838 per person. Returns on investment, the data show, decline with the level of schooling and per capita income.

In the end, the research fundamentally and quite convincingly demonstrates that it is years and quality of schooling, along with the quality of the nation's formal and informal

institutions that are the determining factors in creating the wealth of nations. Policymakers can be reasonably confident that investments in education and efficient and responsible institutions are viable means of increasing the intangible capital residual of a nation's total wealth.

However, using three nations as examples, Turkey, Peru, and El Salvador, the Bank demonstrates that this does not mean there can be a 'one size fits all' policy. In Turkey (the wealthiest of these three countries) social capital accounts for 63 percent of its 75 percent intangible capital residual. The Bank calculates that a policy directed at increasing per capita education in Turkey by one year would raise the total intangible residual by nearly ten percent. In Peru, it is the education component that explains a large share of the intangible residual (47 percent of 77 percent). A decision to improve the judicial system would increase total intangible capital by 25 percent. In El Salvador, intangible capital stands at 86 percent of the nation's total wealth and remittances make up 24 percent of this residual. In El Salvador, a remittance management policy incentivizing savings and investment over consumption could provide a key boost to wealth creation. Clearly, the different composition of the intangible capital residual in each country suggests varying policy options.

Given the critical nature of intangible capital, it is surprising that this World Bank research seems to have been largely overlooked in academic circles, the mainstream media, and by many in positions to influence policy making.

One economist, Ronald Bailey, has written on the subject, and he asked a simple question: "Why is a Mexican migrant who moves to the United States five times more productive than one who stays home?" The answer, he says, is because (in year 2000 numbers) "the average American, no matter their personal income, has access to over \$418,000 in intangible wealth, while the stay at home Mexican's intangible wealth is just \$34,000. If a person can gain immediate access to a half million dollars of capital...who wouldn't walk across the border?" This intangible asset comparison gives us a quantitative handle on the gravitational pull of wealthy countries that guarantees a constant illegal migration flow—not just United States/Mexico—but worldwide.

Surely this bank of data is useful to enlighten policy decisions by our donor agencies, such as USAID. In low income countries donating immigrants, better management of natural resources producing the savings necessary for investment, may be the first step on the ladder to enhancing their educational and institutional capacity. Stronger institutions clearly constitute a sound basis for economic development, as weak—or corrupt—institutions limit people's potential and act as drivers of migration. The hard facts of immigration and of wealth creation demand that immigration policy in the United States be reassessed to better meet economic, security, and foreign policy imperatives.

In my judgment, The World Bank's expanded analysis of our total asset base and the deconstruction and quantification of the intangible capital residual opens the door to a range of policy interventions that could help to increase and sustain growth in the United States and abroad.