Economic Impact of 20 Years of ECA Land Registration Projects

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Economic Impact of 20 Years of ECA Land Registration Projects
By Suha Satana, Mika-Petteri Törhönen, Aanchal Anand and Gavin Adlington

Abstract

The World Bank has funded land reform, land administration, and land management projects in the Europe and Central Asia region (ECA) since early 1990s. The core investment has targeted the privatization of land rights and establishment of registers of land and property rights. The ECA land projects have established new legal land registers in nine countries, new cadastres to several countries and improved their operations in multiple countries. This paper discusses the economic impact of ECA land registration projects and challenges in measuring their impact. The paper ends with a preliminary quantification of ECA land registration projects’ economic impact and concludes that ECA land registration projects have smoothened and accelerated the transition process, progressed land and property markets, and supported mortgage market growth. The paper also proposes an expanded Byamugisha framework as the most suitable approach for measuring economic impact of land registration projects.

Key words: Land registration, property registration, land registry, cadastre, economic impact

Introduction

The World Bank has funded land reform, land administration, and land management projects in the Europe and Central Asia region (ECA) since the mid-1990s. The region comprises the 15 countries of the former Soviet Union, the former socialist countries of Central and Eastern Europe, and Turkey. The dissolution of the Soviet Union in 1991 catalyzed an unprecedented political, economic, and social change in ECA. The dissolution and the associated economic transition launched a wave of massive reforms in economic systems from a command to a market-based economy transforming institutions, processes, attitudes, and fundamental concepts of individual and organizational behavior across the region. The privatization of land and property assets and their efficient management and mobilization in the credit markets have been at the center the transitional reforms to date. During this period, the World Bank has funded 40 land projects in 23 ECA countries in support of the land and property sector. These projects have successfully implemented a vast variety of land-, land administration-, and land management reforms that many countries outside ECA are undertaking only today.

During the past few years, the World Bank’s land team in ECA has worked to capture outcomes, impacts and lessons learned in ECA land projects. As the first step in 2009, the team completed a comprehensive assessment,¹ which stemmed from several thematic case studies. That study’s findings and an analysis of the Bank projects’ Implementation Completion Reports (ICRs) provided data for the 2012 World Bank...
Land Conference paper on lessons learned in 20 years of ECA land projects. Since then, the team has completed a client survey in 13 countries and analyzed in detail 27 ECA ICRs for a conclusive stand-alone publication on the lessons learned in 20 years of ECA land projects. This paper presents preliminary findings of a case study on the economic impact of ECA land projects, which is the last contributing study before the compilation of the conclusive publication.

Out of the 40 ECA land projects, this economic impact analysis covers 13 completed land registration projects. There are two reasons for limiting the focus to land registration projects. First, ECA land projects have had vast variety of activities and objectives, which have resulted in very differing datasets on economic impact that cannot be used for meaningful data aggregation or analysis. Second, assessing the economic impact of land projects is marred by several challenges, including difficulty in gathering reliable data, difficulty in measuring benefits like increase in investments or labor mobility, and the inability to attribute the full range of economic benefits to the land project alone. Land registration projects help to overcome some of these challenges because many of the results—like number of days to register a property or decrease in transaction costs can be measured relatively easily and compared across countries and time periods.

Furthermore, land registration is the core element of ECA land projects. In particular, the second generation land projects in 2000-2010, which followed the land reform projects of 1990’s and preceded the land management projects of this decade, invested in registers of rights. The typical ECA land project of that time included the protection of property rights and facilitation of the land and property market transactions through efficient registration and cadastre services. The ECA land projects have established new legal land registers in nine countries, improved existing legal land registration processes in other countries, and created and enhanced cadastre records in many others. Finally, the land registration projects comprise almost a third of the 40 land projects the Bank has financed in the ECA region over the last two decades, creating a relatively representative sample of projects that can be dissected and analyzed to draw practical conclusions.

ECA land project lessons on economic impact provide a repository of knowledge for the design of future land registration projects as they show which benefits are possible, and how project design and implementation may be tailored to maximize the coverage and impact of land registration projects. This paper is also unintentionally timely as it demonstrates that land registration projects help promote the World Bank’s twin goals of poverty reduction and shared prosperity.

The thirteen land registration projects discussed in this paper are:

1. Armenia; Land Titling Project
2. Azerbaijan; Agricultural Development and Credit Project
3. Bosnia and Herzegovina; Land Registration Project

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3 Albania, Armenia, Bulgaria, FYR Macedonia, Georgia, Kyrgyz Republic, Kosovo, Serbia and Tajikistan.
4 The World Bank’s poverty reduction goal is to reduce the percentage of people in this world living with less than US$1.25 a day to 3 percent by 2030.
5 The World Bank’s shared prosperity goal is to promote income growth of every developing country’s bottom 40 percent in terms of per capita income.
For the purpose of drawing out the economic impact, the paper will first present a conceptual framework for the analysis of land registration projects, and then each project and its major impact will be discussed in detail. The paper concludes with compiling the analysis of the economic impact of ECA land projects and measuring economic impact of land projects, which can provide lessons relevant beyond the ECA region.

1. Land Registration and Economic Impact: Conceptual Framework

This section presents conceptual frameworks for assessing the economic impact of land registration projects. One of the challenges of assessing the economic benefits of such projects is that the impact cannot be quantified in the short-run alone, and sufficient time must be allowed to assess the changes. However, unlike other common types of development investments, such as water supply, roads and infrastructure in general, where systematic and consistent analytical approach and cost-benefit analyses have long been established and applied, the existing knowledge in the land administration sector is limited.

Still, a review of literature shows several types of conceptual frameworks proposed for economic impact evaluation in land registration. These frameworks try to establish linkages between major project outcomes and their anticipated impacts. This section discusses the following four frameworks, which seem most suitable for the purpose:

A. Financial Development and Growth Linkages - Byamugisha
B. Land Registries/Cadastre and Land Market Linkage - Dale & Baldwin
C. Investment Climate Linkage - World Development Report (WDR) of 2005
D. Added Value Through Registration Service Linkage – European Bank for Reconstruction and Development (EBRD)

A. Financial Development and Growth Linkages – Byamugisha’s Framework

Frank Byamugisha’s framework for measuring economic impact of land registration seems is still relevant at its 15 years anniversary. His five primary financial development and growth linkages are: (a) land tenure security and investment incentives linkage; (b) land title, collateral and credit linkage; (c) the land markets, transactions and efficiency linkage; (d) the labor mobility efficiency linkage; and (e) the land liquidity, deposit mobilization and investment linkage.

Land Tenure Security and Investment Incentives Linkage refers to land owners’ ability and incentives to invest in land improvements, including buildings, by virtue of the fact that registration provides them tenure security, exclusive use and safe access to benefits from the land, and the freedom to transfer their land rights.

Land Title, Collateral and Credit Linkage is built on the premise that secure formal land ownership provides access to commercial credit from formal sources to undertake investments, thus contributing to the emergence of financial markets.

Land Markets, Transactions and Investment Efficiency Linkage assumes that land registration provides the necessary information for securing contracting parties in a land transaction. Consequently, land registration plays an important role in reducing transaction costs and increasing transparency. As a result, land registration facilitates the emergence of a land market, increases market efficiency, and attracts investors.

The Labor Mobility Efficiency Linkage assumes that land registration improves labor mobility which enhances allocative efficiency in an economy. The ease and security with which people can buy, lease, or sell land creates a favorable environment for labor mobility from areas of lower labor productivity (economic returns) to those with higher productivity, thereby raising overall labor productivity, investment efficiency, standard of living, and economic growth.10

Land Liquidity, Deposit Mobilization and Investment Linkage stems from an estimate that the capital value of land and property constitutes one half to three quarters of a country’s wealth.11 The proportion is higher in less developed countries with limited domestic capital. Not only is this observed at the country level but also at the level of individuals and families. Land and property are therefore likely to form by far the largest class of asset in most developing economies. As a result, the efficient use and management of land and property is the key to promoting inclusive growth that targets the country’s bottom 40 percent in terms of per capita income.

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10 The Effects of Land Registration on Financial Development and Economic Growth, Frank Byamugisha.
In addition to Byamugisha’s original five linkages, the authors suggest a sixth linkage to demonstrate the economic impact of land registration projects—Fiscal and Tax Linkage. Land registration projects contribute to more comprehensive and accurate collection of property taxes. As the coverage expands and the taxable property value is more accurately defined, governments can reduce tax rates over the expanded and improved tax base and still collect the same revenues. This reduction in tax rate has positive distributional effects and creates a fairer and more transparent taxation system. Furthermore, a reduction in the tax burden on wages can stimulate help to create more jobs in the economy. If the tax rate is not changed, the increase in tax collection can be used to finance other public services, including education and health.

B. The Land Registries/Cadastre and Land Market Linkage – Dale and Baldwin’s Framework

The land market operates through participants buying and selling goods and services. According to Dale and Baldwin’s thinking also from close to 15 years ago, these market operations need to be supported by three regulated sectors - land registration and the cadastre, valuation services, and financial services. These sectors constitute the regulatory pillars that stand on the base of land policy. In ECA in the communist era, the first regulatory pillar (land registry and cadastre) was modified to focus on land use, the second regulatory pillar (valuation) reflected the potential use rather than market value of the land, while the third regulatory pillar (financial services) was almost nonexistent. Below is a description of the three pillars for an open market economy.

**Pillar 1 – Land Registration and the Cadastre:** The basic legal relationship between land and property and their owners is officially documented in land registers that also contain a record of obligations or encumbrances upon the land.

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12 This linkage is a combination of two linkages presented in the ECA Land Assessment (2009) paper. The Fiscal and International Trade linkage, and Investment and Tax linkage have been merged to create the Fiscal and Tax linkage to study specifically the benefits to government finances from land registration projects.
**Pillar 2 – Valuation:** Property valuation aims to establish the connection between the monetary value and the property by producing an estimate of the capital value of the property asset. Valuation capacity in several ECA countries remains weak and mass appraisals are based on ‘cadastral’ values rather than market price. This affects the re-allocation of resources according to market forces (supply and demand).

**Pillar 3 - Financial Services:** The third regulatory pillar involves the delivery and regulation of financial services. This was a challenge for ECA countries transitioning from communism—where this pillar was largely absent—to a market-based system—where this pillar enables the buying, selling, leasing and development of property assets. Moreover, financing mechanisms needed by a market economy require that investment in the property sector will give sufficient returns to warrant the risk. As such, property financing has to compete with other forms of investment. In the market economies, there is a range of financial products and instruments that can be used for property investment. Investment financing (or loans) secured by charges upon the properties are **mortgages** and these are normally protected and regulated by law. These form the principal financing mechanism available to the private investor and in countries such as the USA, the value of mortgages (total outstanding residential to GDP ratio) constituted 86% of the GDP in 2007, and 69% in 2012. For the EU27 countries, these ratios were 49% in 2007, and 52% in 2012.

**C. The Investment Climate Linkage by WDR 2005**

According to the WDR 2005, conducive investment climate has a positive impact on the productivity of investments and hence is key to sustained growth and poverty reduction, where investment climate is defined as “the set of location-specific factors shaping the opportunities and incentives for firms to invest productively, create jobs, and expand.” Investment climate studies shed light on “factors constraining the effective functioning of product markets, financial and non-financial factor markets, and infrastructure services, including, in particular, weaknesses in an economy’s legal, regulatory and institutional framework.”

Literature on investment climate also tries to relate measures of investment climate constraints to firm performance. **Property rights** have been identified as a major investment climate topic, and policy intervention in the area is encouraged. To the extent, property rights can encourage foreign direct investment, they can help create jobs in the short-run, and enable knowledge and technological transfers which accelerate long-term economic growth.

**D. Added Value Through Registration Service Linkage - EBRD**

In most countries mortgages are registered in the same register as the title to the property. This facilitates the search process because any person searching the title can see immediately the mortgages that have been registered. Based on a study by EBRD, the following paragraphs discuss the significance of the economies (and value added) that can be associated with the land registers and in particular through registration of mortgages.
Effect of registration: The aim of registering a mortgage is to confirm the validity of the mortgage in the same way as title registration confirms a transfer of land title. This approach derives from the principle that any person should be able to rely on the accuracy of information shown in the land register. The desired effects of registration of mortgage are (a) to alert third parties that a mortgage exists, or is claimed to exist; and (b) to establish the precise time from which it would have priority.

Registration process is typically associated with bureaucratic forms and long queues, but ECA land projects demonstrated that this need not be so. To ensure this outcome, the process is designed to be simple and rapid, where the requirements are limited to what is necessary to achieve the intended effect. Nowadays, a search process may be completed in a matter of minutes. Most registers are becoming electronic and the possibility of immediate registration is also becoming a reality.

Relying on registration: The reliability of mortgage entries is critically important. A person searching the register needs to rely on the fact that no mortgage can be claimed on the property other than those shown in the register. This case of reliance with the “negative information” given by the register is an essential element in establishing certainty of title.

Access to registered information and search process: The most important function of registration is to publicize the mortgage so as to enable the public to discover that a mortgage is claimed. In most countries, this information is made available to any person, without the need to demonstrate a particular interest. The search process should be simple, fast, and cheap. The move towards electronic registries and the increasing use of the internet greatly facilitate the easy and immediate access to mortgage information and a relatively large group of transition countries have been quick at embracing the technological advances in this respect. Privacy of users is also preserved as access is restricted to basic information.

2. Land Registration Projects and Economic Impact: Observations and Lessons from ECA

This section reviews the Project Appraisal Documents (PADs) and ICRs of the 13 land registration projects with respect to the projects’ principal economic outcomes and impact. The paper relies on PADs and ICRs for two reasons. First, projects’ results frameworks have been relatively consistent across PADs and ICRs, allowing for a relevant comparison. Second, the issue of attribution of the economic benefits of land registration projects is somewhat mitigated by data from PADs and ICRs because they consider both the “without” and “with” project scenarios. A much greater weight will be ascribed to the ICRs since they discuss the project’s outcome results and achievements rather than plans and objectives. However, since a land registration project’s impact spans into the long-run, it is important to note that the full extent of benefits is not captured in ICRs as they assess the project’s impact at the time of the project’s close.

The Armenia Land Titling Project was implemented between 1999 and 2004 (loan value US$ 8.0 million). The project’s aim was to “promote private sector development” by establishing a transparent and reliable register for land and property rights. The key channels for achieving this aim were securing property rights, facilitating land consolidation, and improving the efficiency of land markets by reducing transactions costs and by making property available as collateral for loans. The primary beneficiaries of this project were envisioned to be private farmers, small and medium sized enterprises (SMEs), and urban
property owners who had not yet registered their properties. The project successfully achieved its goals: almost all of Armenia’s private land parcels and buildings were registered, and an efficient registration system was established for subsequent registration with the average registration time between 1-3 days. The project made an immediate impact in the land and property market, which more than doubled in volume during the project period. The growth in mortgages was volatile in the beginning reflecting macro market developments, but saw rapid growth in 2002 (38% growth) and in 2003 (48%). Most mortgages were registered in urban areas, but the land-based agricultural mortgages constituted one-fifth of all registered mortgages in 2003. Loan interest rates dropped to between 10-16 percent from 40 percent over the course of the project. While the interest rate drop is not fully attributable to the project, the reliable registration system played an important role in the decrease.

The **Azerbaijan Agricultural Development and Credit Project** was implemented between 1999 and 2005 (US$ 5.44 million part of the loan was used for the real estate registration component). Its objective was to restore the productivity of farming areas under the new system characterized by private family and group farms. One of the ways the project was going to achieve this objective was through the nationwide development of an accessible, secure, and unified property registration system. The project achieved its goal of establishing ten regional cadaster centers, which decentralized the system and expedited the issuance of land titles. The regional centers issued around 50,000 titles and 98% of the land certificates for private household plots. This led to an increase in the volume of secondary land market transactions, improved transparency of the registration system, and efficiency gains whereby transaction time went down from 30 days to less than 10 days over the course of the project.

The **Bosnia and Herzegovina Land Registration Project** was implemented between 2006 and 2012 (loan value US$ 15.0 million). Its objective was to facilitate the development of transparent land markets through the registration of land and property rights and adoption of policies that enable secure and efficient transactions. The project outcomes were to be measured by a number of indicators including volume of transactions, reduction in time to register a transaction, number of mortgages, change in property values, and increase in property tax related income for the government. The project concluded with impressive results, especially in terms of increasing the efficiency of land registration. The project helped to remarkably reduce the amount of time to register properties. At the time of project close, in the Federation of Bosnia and Herzegovina, the majority of registration requests was completed in 5 days and 39% within one day; and in Republika Srpska 53% of the transactions were completed within one day. The progress is demonstrated in Sarajevo where registration time reduced from years to just a matter of days during the project period. Between 2007 and 2011, the number of registered mortgages increased by 44 percent in the Federation of Bosnia and Herzegovina and 137 percent in the Republika Srpska. The fiscal impact of the project was estimated at US$ 12.52 million (present value of the increased property tax collection at the start of the project).

The **Bulgaria Registration and Cadastre Project** was implemented between 2001 and 2009 (loan amount US$ 37.0 million). The project’s objective was to facilitate the secure tenure of property rights and the development of efficient property markets by improving the coverage, completeness, accuracy and responsiveness of the cadaster and property registration system. Despite some difficulties with project implementation, the project closed with the establishment of a joint ICT system, which had become one of the few integrated web-based systems in ECA that had been introduced nationwide at the time. It is still one of the most successful ICT systems in a Bank supported project in the region. The land and
property market players (notaries, bankers, real estate agents, surveyors, etc.) and the public enjoy a one stop shop due to integration of the two systems. This was a revolutionary result compared to the dispersed and cumbersome property registration system that existed at the start of the project. As a result of the project, the registration time of sales and mortgages fell from seven days to just one day. During the project period, transactions increased by 376% and mortgages 380%. The size of the mortgage market quadrupled from EUR 1 billion in 2005 to EUR 4 billion in 2008 notwithstanding the global financial crisis. Also, the share of foreign direct investments (FDI) in the construction sector increased from 0.5% of FDI before the project to 12% at the close (2007). Finally, another important development in Bulgaria was the introduction in 2004 of real estate investment trusts (REITs). Given their international character and complex ownership structure REITs would not have been possible without the security of tenure that the registration system facilitated.

The **Croatia Real Property Registration and Cadastre Project** was implemented between 2002 and 2010 (loan value loan US$ 36.0 million). The objective of the project was to build an efficient land administration system which would contribute to the development of efficient land and property markets. The project beneficiaries were land and property owners, farmers, lenders, investors, financial institutions etc. The project achieved its objective by not only addressing the issues with the system (backlogs, improved access to information, reduced transaction time) but also making additional improvements (online data access to a variety of land and spatial records). The number of property transactions increased from 101,000 in 2002 to 145,000 in 2007 (only to dip to 75,000 in 2009 when the global financial crisis hit the Croatian economy). The ICR estimated that without the crisis, the number of transactions would have increased by 60-70% during the project period. At the same time, the crash in the land and property market could have been more pronounced without the efforts of the project. Some of the other significant achievements of the project included: 84% reduction in backlog; reduction in national average for mortgage registration from 58 days to 6 days; reduction in time to register transactions from 100+ days to within 7 days; and an incremental property tax collection of EUR 4.74 million.

The **Kazakhstan Real Estate Registration Pilot Project** was implemented between 1997 and 1999 (loan amount US$ 10 million). The aim of the project was to support, on a pilot basis, the country’s efforts to establish a national registration system which could guarantee the security of property rights, facilitate land and property transactions, and promote the development of credit markets. The project met the project objectives and beyond. Registration offices were established nationwide and not just in regions selected for the pilot. They were also financially sustainable, freeing up government spending. Additionally, land and property market activity, including sales and mortgages, increased by 29% over the course of the project.

The **Kyrgyzstan Land and Real Estate Registration Project** was implemented between 2000 and 2008 (loan amount US$ 9.42 million). The objective was to support the development of land and property markets and the more intensive and effective use of land and property through the introduction of a reliable and well-functioning system for registration of rights. It was understood that key indicators for this objective would be an increased level of activity in sales and mortgage markets even though this was not explicitly mentioned. The project successfully achieved its objective. The number of mortgages, which was nil prior to the project, reached a cumulative annual total of 22,400 in 2002, the first year when most of the registration offices were operational, and doubled to 45,300 in 2007. The cumulative value of
mortgages registered within a one period increased by more than 10 times between 2002 and 2007 to reach US$1.1 billion, roughly one-third the value of GDP of Kyrgyzstan. The Project had set out to register 600,000 properties but closed with an impressive 2.5 million properties. The cost of registration per property was US$ 2.75 compared to the ECA range of US$ 5-120 per parcel. The Doing Business survey reported a total of 8 days to register property in the country; this is well ahead of the 30 day average for OECD countries.

The Moldova First Cadastre Project was implemented between 1998 and 2007 (loan value US$ 18.9 million). The project objective was to develop and implement a national unified land and property registration system to establish clear and enforceable property rights so as to promote the privatization of land and the development of land and property markets. The project successfully achieved this objective which in turn led to the following benefits: security of rights, increased number of transactions, increased mortgage market activity, and improved property tax collection. Moreover, 82% of the plots in Moldova were registered and selective registrations based on transactions amounted to 1.1 million. The number of property transactions more than quintupled from 201,000 to 1,103,000 over the nine years of project implementation. Over this period, the number of inquiries related to the land register (integrated to the cadastre) increased from 25,000 to 200,000, representing an eight-fold increase.

The Romania General Cadastre and Land Registration Project was implemented between 1997 and 2006 (loan value US$ 25.5 million). The project objectives were to establish an efficient system for securing land titles of land and property owners; create a general cadastre system which clearly defines terms for implementation; and set up simple, safe, and cost effective procedures for land transactions. The project achieved all its objectives. The time to register a mortgage dropped from 50 to 30 days reducing the opportunity cost for banks and resulting in savings of US$ 4.5 million a year. Moreover, the economic value of time saved in the registration process was estimated at US$ 1.65 million a year.

The Russia Cadastre Development Project was implemented between 2005 and 2011 (loan value US$ 100 million). The project objective was to improve the information flow and rationalize normative and operational procedures for the Unified State Cadastre so as to facilitate the development of property markets, improve the quality of service, and strengthen the Cadastre’s ties with other organizations like Ministry of Justice and Tax Authorities. The key indicators for the project were: (a) reduction in time to complete transactions; (b) elimination of surveys for secondary transactions; and (c) market competition in the provision of survey services. The project achieved each of its objectives and showed impressive results. The average time for processing new property surveys by the Cadastre Agency decreased from 1 month in 2007 to 20 days in 2011. The average time for completion property transaction reduced from 35 days and 29 days to 19.6 days and 19.4 days for individuals and legal entities, respectively. At the time of project closing, each cadaster employee was processing 95 transactions more per year than before; in 2007 the processing efficiency at the Cadastre Agency was 1,323 transactions per employee in 2007 and in 2011 it was 1,418 transactions per employee. The elimination of obligational surveys from property transactions led to a saving of US$ 340 million over the life of the project. The project increased market competition and laid the foundations for further expansion in production and access to spatial data for improvements in urban and spatial planning as well as other e-services.

The Serbia Real Estate Cadastre and Registration Project was implemented between 2004 and 2012 (loan value US$ 30.0 million). The project objective was to increase confidence and lower transaction
costs by building an efficient property registration and cadaster system with the purpose of contributing to the development of effective land and property markets. The main outcome indicators were increased transactions, increased volume of mortgages, and increased satisfaction with services provided by the registry and cadastre system. Over the life of the project number of transactions increased by 28% and number of sales recorded by the Tax Authority increased by 8%. The volume of mortgages increased by almost 400%. The number of days to register transactions also fell. The project also saw an increase in the customer satisfaction levels with the work of the Geodetic Authority (the agency hosting the legal land registry and cadastre).

The Slovenia Real Estate Modernization Project was implemented between 2000 and 2005 (loan value € 14.05 million). The project objective was to increase the efficiency and effectiveness of land and property administration systems in Slovenia by improving the land registration system, upgrading the legal framework for land and property transactions, establishing an agricultural land use monitoring system to meet EU accession requirements, and designing and testing a market-based property tax and valuation system. Of the six key performance indicators established at the start of the project, several have exceeded their targets and only one, relating to transaction processing times in the land registries, was not fully met. The project successfully upgraded the legal and regulatory framework for property transactions, and put in place the infrastructure to ensure a more efficient and effective land administration system, more optimal spatial planning and management, an effective land use monitoring system, and a mass appraisal system for effective property taxation meeting the EU accession requirements. More specifically, the ICR noted that the project investment was likely to have resulted in at least a 1% decrease in mortgage lending rates which reflects a lower risk premium as well as lower transaction costs. While the issue of attribution is difficult, the ICR’s estimate is based on very conservative assumptions.

Over the course of the project, the volume of mortgages loans increased by more than 200% in real terms, going from US$ 29.8 million in 1999 to US$ 101.6 million in 2005 (expressed in constant prices).

The Ukraine Rural Land Titling Project was implemented between 2004 and 2012 (loan value US$ 82.05 million). The project objectives were: (a) privatization of the lands of state and communal farm enterprises, agencies and organizations through transfer to the employees of these enterprises, agencies and organizations as well as retirees from among them, designating for each of them a land parcel (share); (b) allocating land parcels to owners of land parcels (shares) in kind (on site) and issuing state deeds to them; and (c) establishing a land cadastre. The project went through several hurdles and implementation issues. Regardless, the project’s objectives were achieved and even exceeded in some cases. A national electronic cadaster was rolled out which is a big achievement in a country of 45 million people. The project had set out to issue 6.5 million deeds but exceeded the target almost three times and the final number of deeds was close to 17 million. There were efficiency gains both in terms of reduced property transaction time and decreased transaction cost: the time to process a land plot for cadastral registration was reduced from several weeks to just 21 minutes, and at the same time the costs of obtaining a land parcel registration and cadastral extract were reduced by 66% and 50% respectively.
This section presents both the quantitative and qualitative economic impact of the thirteen ECA land registration projects. The economic impact of ECA land registration projects is summarized in the table below:

<table>
<thead>
<tr>
<th>Country and Project</th>
<th>Anticipated Main Outcomes and Impacts (PADs)</th>
<th>Realized Main Outcomes and Impacts (ICRs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia Land Titling Project</td>
<td>Secure property rights, increase efficiency of real estate markets</td>
<td>Property rights registered, increased mortgage activities, lower interest rates</td>
</tr>
<tr>
<td>Azerbaijan Real Estate Registration</td>
<td>Restore farm productivity through nationwide property registration</td>
<td>Regional cadastre offices established, increased secondary land market transactions, 66% reduction time to register property</td>
</tr>
<tr>
<td>Bosnia and Herzegovina Land Registration Project</td>
<td>Develop transparent land markets</td>
<td>Significant reduction in time to register property, increase in mortgage market activity, fiscal impact of US$13 million</td>
</tr>
<tr>
<td>Bulgaria Registration and Cadastre Project</td>
<td>Secure property rights, develop efficiency property markets</td>
<td>Established joint ICT system for land and property registration, reduced transaction cost and time, close to 400% increase in number of transactions and mortgages</td>
</tr>
<tr>
<td>Croatia Real property Registration and Cadastre Project</td>
<td>Develop efficient real estate markets</td>
<td>84% reduction in land register backlog, 90% reduction in time to register a mortgage, 93% reduction in time to register a transaction, increase in property tax collection of EUR 4.74 million</td>
</tr>
<tr>
<td>Kazakhstan Real Estate Registration Pilot Project</td>
<td>Secure property rights, develop real estate market</td>
<td>Secured property rights, increased land and property market activity by 29%, and promoted the development of credit markets through an increase in mortgages</td>
</tr>
<tr>
<td>Kyrgyzstan Land and Real Estate Registration Project</td>
<td>Develop and promote real estate markets</td>
<td>2.5 million properties registered, time and cost to register property reduced</td>
</tr>
<tr>
<td>Moldova First Cadastre Project</td>
<td>Develop and implement a national unified real estate registration system</td>
<td>Secured property rights, increased mortgages and number of transactions, increased tax revenues, number of property transactions quintupled, number of register inquires increased by eight-fold</td>
</tr>
</tbody>
</table>

3. Summary of Economic Impact of ECA Land Registration Projects
### Romania General Cadastre and Land Registration
- Establish efficient registration system, set up cost effective procedures for transactions
- Reduced time to register mortgages, reduced cost to banks

### Russia Cadastre Development Project
- Improve procedures of Unified State Cadastre, reduce time to complete transactions
- Reduced time to process transactions, increased efficiency in terms of transactions per employee, expansion of e-services

### Serbia Real Estate Cadastre and Registration
- Build a more efficient property registration system
- Increased number of transactions and mortgages, increased customer satisfaction

### Slovenia Real Estate Registration Modernization
- Increase efficiency of real estate registration system, upgrade legal framework
- Developed mass appraisal system, increased efficiency of registration system, volume of mortgage loans increased by over 200%

### Ukraine Rural Land Titling Project
- Secure property rights, establish a nationwide land cadastre
- Issued 17 million deeds, launched automated system for registration, reduced time and cost of registration

As for the quantitative economic impact, the total investment in these ECA land registration projects amounted to a total of US$ 483 million, which includes funding from the World Bank, client government, and co-financiers. Based on the analysis in the ICRs, the total short-term and some of the longer-term economic impact of these projects is estimated at US$ 1,072 million. This is a 2.22x increase over the initial project costs and implies a return on investment (ROI) of 122%. Furthermore, assessing the economic impact of projects that specifically targeted first registration, the estimated total short-term and long-term benefit to the economy of a single registration is estimated at US$ 16.13. In other words, registering one million properties in the ECA region leads to an estimated economic benefit of just over US$ 16 million in the target country.

However, note that these are preliminary findings of an on-going analysis and there a number of caveats to consider including poor data availability and reliability, inability to attribute economic impact to land projects alone, and difficulty in measuring certain impacts associated with productivity and efficiency gains. The authors will continue to develop the analysis to further isolate the benefits of land projects with more precise data, and aim to present a more detailed quantitative analysis in the conclusive publication of this series.

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13 Excludes the project in Kazakhstan due to the lack of adequate data on the project’s economic impact.
14 Excludes the project in Kazakhstan due to the lack of adequate data on the project’s economic impact. In the case of Moldova, the economic impact is defined based on the economic impact per registration derived from data for six countries: Armenia, Azerbaijan, Kyrgyzstan, Romania, Slovenia, and Ukraine. All other numbers retrieved from respective project ICRs.
15 This estimate is based on project data for six countries: Armenia, Azerbaijan, Kyrgyzstan, Romania, Slovenia, and Ukraine.
As for the qualitative impact, this paper introduced four conceptual frameworks: an extended Byamugisha model, Dale and Baldwin, investment climate linkage, and added value through registration. In this section, the paper applies the extended Byamugisha model, selected because it presents the widest view of the economic impact of land registration projects among the frameworks. Not only do the Byamugisha linkages cover direct benefits from security of property rights and the resulting development of the mortgage market (which is reinforced by the other models), but it also shows the indirect benefits such as labor mobility and improved tax collection, which present a relatively complete picture.

Thus the following table presents an illustrative summary of the project impact according to the extended Byamugisha linkages as in the PADs and ICRs of the thirteen ECA land registration projects. The table illustrates that the ECA land projects’ impacts to investments and land and property markets are tangible and explicit while the impact to credit markets is more implied but still universal. Other impacts are less universal in ECA land projects. However, this is maybe more the case that impacts beyond the land markets and investments are harder to measure and thus they are less captured in the project ICRs.

![Table with linkages and impacts]
4. Conclusions

Both theoretical investigations as well as empirical evidence point to the high rates of return from ECA land registration projects. The World Bank’s ECA experience in supporting land registration projects clearly indicates that secure tenure and efficient land and property registration systems are of basic importance for economic growth and prosperity. It is thus not surprising that in a recent report, the European Parliament deemed “registered property rights and secure land rights to be a catalyst for economic growth, provided that land can be used as collateral and enhance access to capital, and therefore stimulate productivity and investment.” Improved income and increased assets for the beneficiaries, and reduced costs are the primary economic benefits accruing from land registration projects. In due course, these improvements are usually reflected in national accounts as economic growth. While land and property registration projects contribute to financial deepening, economic growth and prosperity, they are subject to cyclical movements to which the economies are exposed. Thus, measuring the tangible economic impact of land registration projects remains a challenge.

This paper presented and discussed four different frameworks all of which aim to establish relationship between land registries and the anticipated impact from developing these registries. The first framework consisted of Byamugisha’s view on the financial development and growth linkages (also discussed below). Secondly, Dale and Baldwin’s approach was introduced, highlighting the significance of registration as a district pillar in the context of land market development, which is a more common and more visible type of impact from land administration projects. The third framework involved investment climate linkage, supporting the approach taken by Byamugisha and emphasizing private sector led development and growth. Another testimony of this linkage is that property registration is one of the ten critical domains underlying the World Bank’s Doing Business survey. Finally, the paper discussed the linkage on added value through registration, which accentuates the key role played by land administration in the facilitation of mortgages. This is a vital linkage because the correlation between mortgage market and registries is well established in the literature, and the mortgage market simply does not emerge if there is no secure property rights that would enable contract enforcements associated with mortgages. Therefore, although each of these frameworks has taken a somewhat different logical route, they seem mutually reinforcing, and perhaps even complementary.

Yet, for the sake of simplicity in measuring impact in a consistent and comparable manner, the paper adhered to an expanded Byamugisha’s framework of originally five financial and development and economic growth linkages of: (a) land tenure security and investment incentives linkage; (b) land title, collateral and credit linkage; (c) the land markets, transactions and efficiency linkage; (d) the labor mobility efficiency linkage; and (e) the land liquidity, deposit mobilization and investment linkage, and (f) the fiscal and tax linkage, which the authors suggested to add to the application of this framework. The framework remains relevant and valid, but the translation of savings into tangible economic impacts is still challenging mainly due to the issues presented below.

Attributing and quantifying perceived benefits of (ECA) land registration projects as measured by improvements in the general base indicators discussed above is hard. The reasons are:

17 http://www.doingbusiness.org/
Inherent difficulty is quantifying the impact of land administration projects - as they affect almost all facets of life

Gradual emergence and long term character of the impact of land administration project.

Divergence between intended and actual results - usually outcomes exceeding expectations – and causing problems in properly identifying resulting project benefits.

Predecessor and successor projects - it is hard to establish causality and where the chain of events were first initiated by predecessor projects and followed up by successor projects.

Studying the impact of land administration projects is not a popular scientific pursuit. Many of the important impacts and lessons learned may go unrecorded, and risk being lost to history.

Inadequate M&E systems - and lack of knowledge as to how to go about impact assessment is a hindrance for most land administration project.

Even with all the above caveats, an informed assessment of ECA land projects’ economic impact can be made. Based on the analysis of project ICRs, presented in the previous section, the total impact of ECA land registration projects is estimated at US$ 1.1 billion, the ROI is estimated at 122%, and the total economic benefit per registration of land or property is estimated at US$ 16.13.\textsuperscript{18} However, perhaps the more relevant conclusion is that the World Bank funded ECA land registration projects seem to have smoothened and accelerated the transition process. It is unfortunate that the full impact of the process was temporarily slowed down or stalled due to the ongoing global financial crisis. The greatest and most visible impact is to be sought in the land markets, where there is relatively uniform and comparable data. The EBRD study of 2013 data\textsuperscript{19} shows that with the exceptions of Azerbaijan and Bosnia and Herzegovina, land and property markets have progressed positively in all other 11 case countries of this paper after the completion of land registration projects. Available data on mortgage markets also show a positive trend in the value of residential loans compared to the GDP.

The economic impact analysis of 13 ECA land registration projects will be deepened and completed for the conclusive publication on the lessons learned in 20+ years of ECA land projects, which is due later this year.

\textsuperscript{18} Please refer to Section 3 for details on country assumptions for each figure.