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On the Development of Public–Private Partnerships in Transitional Economies: An Explanatory Framework

This article develops a generic framework to explain the environment for public–private partnership (PPP) development in transitional economies. The framework stands on a tripod that includes the market, the operating environment, and the government, each containing several factors that support aspects of PPPs. The authors apply the framework to analyze the results of a multi-country survey in an effort to identify key factors that facilitate PPP development in transition countries. The identified factors are market potential, institutional guarantee, government credibility, financial accessibility, government capacity, consolidated management, and corruption control. The framework and identified factors may serve as effective tools to diagnose and monitor PPP development in a broader array of countries. The framework is applied in analyzing data from four transitional economies and several advanced economies. The efficacy of the framework is further justified by its explanatory power of PPPs' practicality and is largely confirmed by results from a sensitivity test.

Public–private partnerships (PPPs) are long-term cooperative relationships that are established between the public and private sectors for the purposes of planning, designing, financing, constructing, and managing projects that are traditionally within the realm of the public sector (Ho 2006). PPPs are situated along a complex continuum of hybrid forms (Perry and Rainey 1988; Koppell 2003) between complete public ownership on one side and complete privatization on the other side. Under contractual agreements, public and private entities jointly provide public services and share both risks and benefits (Forrer et al. 2010). Such partnerships afford synergetic advantages: private enterprises benefit from government-supported strategies to harvest stable and reasonable returns on their investments (Scharle 2002), while public agencies benefit from the professional and cost-efficient operation of private enterprises in service

delivery (Savas 2000). Since their creation, the use of PPPs has spread from traditional hard infrastructure (transit, railways, bridges, and highways) to soft infrastructure (education, health care, and emergency service) (Hodge and Greve 2007). Today, PPPs are an important means by which governments deliver public services.

Public–private partnerships have been widely and successfully adopted in many advanced market economies, such as Australia, Hong Kong, and the United States, because of their mature legal systems, transparent policy making and regulations, stable economies, strong financing capabilities, and adherence to risk-sharing principles. In the United States, municipalities have observed a dramatic rise in the mixed public-private delivery (joint contracting) of city services (Warner and Hefetz 2008). In recent years, transitional economies that previously relied on government expenditures have also begun to adopt PPPs as a supplemental strategy, particularly at the local level to finance hard infrastructure (Grimsey and Lewis 2004). Major barriers to the development of PPPs in transitional economies, such as underdevelopment, unstable macroeconomic environments, and the absence of necessary institutions, are the inverses of the conditions that are favorable to the development of PPPs in advanced economies. However, given their strong demand for facilities and services (Jamali 2004), transitional economies have great potential in terms of creating PPPs for public service delivery.

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to identify key factors that facilitate PPP development in transition countries. The framework and identified critical factors may serve as effective tools to diagnose and monitor PPP development in a broader array of countries.

This article is organized as follows: First, we review the literature on critical factors, theoretical frameworks, methodology, and sampling. The next section presents our framework and hypotheses. Then we discuss research design and follow with a discussion of the empirical results. The article concludes with a summary and directions for future research.

Literature Review

The scholarly literature on PPP development has grown rapidly since the 1990s. Most studies, however, are about advanced economies; research on PPPs in transitional economies is increasing, but at a much slower pace.

Critical Factors

Many studies have discussed key factors that influence the adoption of PPPs (Chan et al. 2010; Field and Peck 2004; Jamali 2004; Rosenea 1999; Van Slyke 2003; Zhang 2005). Some studies offer insight into the overall environment in which PPPs operate. One major stream of research discusses key factors that motivate the formation of PPPs. Alter and Hage (1993) study public-private collaboration in health service delivery in the United States and argue that a collaborative partnership can start when players in the two sectors both perceive the need and are willing to collaborate. Miller (2000) attributes the proliferation of PPPs to the desire for performance improvement, cost reduction, environmental protection, and increasing competition. Samii, Van Wassenhove, and Bhattacharya (2002) highlight key requirements for the formation of effective PPPs, which include resource dependency, commitment symmetry, common goal symmetry, intensive communication, alignment of cooperation learning capability, and converging working cultures.

Prominent in this literature are studies that dissect impediments to or facilitators of PPP implementation. Bovaird (2004) and Hofmeister and Borchert (2004) argue that PPPs cannot function in the absence of good governance, which is interpreted as and decomposed into accountability, responsiveness, transparency, equity, and participation. A PPP project with good governance should establish an institutional framework and incentive structure to reconcile private sector participation with public value and long-term sustainability (Koppenjan and Enserink 2009). Jamali (2004) emphasizes the importance of a sound legal and regulatory system to provide a fair and transparent operating environment and a strong administrative structure to steer and guide policy implementation. Using a factor analysis with 18 factors that are critical for the success of PPPs, Li, Edwards, and Hardcastle (2005) identify five factor groupings for PPP projects: effective procurement, project implementability, government guarantees, favorable economic conditions, and financial market availability.

Bloomfield (2006) echoes the emphasis on governance from the government side. To successfully complete long-term PPP contracts, partnering governments must invest

in specialized expertise and effective contract management. Kettl (1993) and Field and Peck (2004) interpret this capability as selecting contractual partners, forecasting the future operating environment, negotiating the form and content of contracts, and managing, monitoring, and enforcing contracts. Without investment in adequate expertise as a proxy for capabilities, localities are unable to regulate, monitor, and control long-term contractual relations; thus, the introduction of PPPs would be likely to fail and undermine public interests (Aworti 2004). Hodge and Greve (2007) find that many PPP relationships become strained after the contracts are signed. There have been reports of such frustrations in Latin American countries, where approximately half of the concession contracts signed since the mid-1980s eventually were renegotiated (Guasch 2004). One of the adverse consequences of such cases is the decrease of private investment in public infrastructure in transition countries (Noel and Brzeski 2004).

In transition countries, despite the apparently enormous potential for private involvement in the financing and operation of hard infrastructure, the actual application of PPPs has been slow and limited. Queiroz (2007) attributes this phenomenon to the lack of an appropriate legal framework, economic and political instability, and, consequently, high perceived risk. Some scholars have concluded that PPP development in transition countries requires rapid development in procedures, market awareness, institutional acceptance, and risk taking (Snelson 2007). The performance of PPP projects in transition countries is also affected by the political will of senior leadership, incentive mechanisms, contract enforceability, and regulatory capabilities (Mnard and Shirley 2002). Despite wide discussions about factors influencing PPP adoption, these factors have not been integrated into a coherent conceptual framework that allows for systematic examination of PPP development. Thus, simply listing key factors without a coherent theoretical framework will not provide explanatory power.

Theoretical Frameworks

Previous studies have attempted to formulate frameworks to explain the adoption of PPPs. In the conceptual framework of Bavoli et al. (1997), three components are crucial: operating environment, partnership structure, and nature of the activities. More recently, Field and Peck (2004) distinguish internal drivers from external enablers for successful public-private collaboration. Internal drivers reside with relevant parties that perceive the need and have the intention to collaborate. External enablers refer to the operating environment and the ability of parties to collaborate. Brown, Potoski, and Van Slyke (2006) note that public service contracting should align public values, institutions, and service market conditions across three phases in contracting: deciding to make or buy, selecting vendors, and deploying tools to oversee contract implementation.

Because PPPs are relatively new in transition countries, few frameworks have been proposed. Zhang's (2005) study of PPP adoption examines five successful factors, but these factors do not compose a consistent framework. Similarly, Chan et al. (2010) assemble a net of six potential PPP obstacles that also fall short of a coherent framework. In summary, despite an apparent flourishing of research on

> Despite an apparent flourishing of research on individual elements, there has been a general lack of frameworks for holistic studies [of PPPs].

Opening an identi ed market to PPPs demands a fa orable en iron-
ment to ens re that pri ate partners can operate ith a (lo) le el
of prod ction costs and a red ction in p blic sector restraints.   e
operating en ironment is composed of at least t o essential ele-
ments. First and foremost is the presence (or e pectation) of la s

For a transitional econom , the three pillars ma not de elop
eq all , partic larl in the earl stages of transition; ho e er, the
o erall trend is mo ing to ard balance and
coordination. D ring the transition process,
the de elopment of the *government* and the
operating environment often lags behind that
of the *market.*   e transition process enhances
the capacit and credibilit of the go ernment
and creates a fairer and more transparent and
e cient operating en ironment as the last t o
stages de ned b the IMF (2000), restr c-
t ring and pri ati ation, as ell as legal and instit tional reforms.
Placing the frame ork in the conte t of the transition process more
adeq atel e plains the case of transitional economies   m t al
amelioration and coordinated e ol tion among the three pillars.

Working Hypotheses

In this s bsection, e de elop orking h potheses on the contrib -
tors to PPP de elopment in transitional economies based on the
foregoing frame ork. From the three pillars, e de elop three major
h potheses, each associated ith t o or three s pplemental h poth-
eses.   en e de elop three more h potheses abo t the transition
process.

Ma

e pro tabilit of a speci c PPP market is an essential considera-
tion for pri ate enterprises (Scharle 2002), for   hich the nat ral
monopol of p blic goods and stable ret rns on in estment are the
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increases the possibility of public agency rent seeking (Bloomfield 2006; Romzek and Johnston 2002). A lack of mature institutions and corruption are common in PPP operations in transition countries. Although it can be argued that corruption sometimes eases the approval and enforcement of PPP contracts, it also damages fair competition and investor confidence in the long term. Therefore, the ability of governments to prevent, control, and eliminate corruption is crucial in safeguarding a fair market. This point leads to our second hypothesis:

Hypothesis 2: The existence (or expectation) of a favorable, supporting environment with political endorsement is positively related to PPP adoption.

Hypothesis 2a: The presence of mature or improving legal institutions contributes to PPP adoption.

Hypothesis 2b: Mechanisms of consolidated government participation are positive with regard to PPP adoption.

Hypothesis 2c: Anticorruption measures benefit PPP adoption.

G

PPP-related government capacity refers to the expertise, knowledge, and information that government agencies possess with regard to negotiating, operating, and supervising PPP projects. Such capacity is a prerequisite for public agencies to successfully initiate, contract, and manage PPP projects (Brown and Potoski 2003a, 2003b), which, in turn, guarantees that the provision of public services by the private sector will not sacrifice or compromise public interests (Inkpen and Beamish 1997; Yan and Gray 1994).

Government credibility is related to and equally important as technical capacity. Government credibility is crucial for the protection of private investment in public facilities and services in transition countries, given that their market is not mature and their regulatory and legal systems are far from firmly established. Studies have shown that undermining government credibility increases uncertainty and risk in PPP operations (Levy and Spiller 1994). It is important to enhance government credibility in PPP projects by strengthening rule-based administration in an effort to secure the interests of private partners (Stasavage 2002). Thus, we present our third hypothesis:

Hypothesis 3: Government capacity and credibility are positively related to PPP adoption.

Hypothesis 3a: Stronger technical capacity better positions the government in contracting and operating PPPs.

Hypothesis 3b: Higher credibility boosts the confidence of private partners, protects their interest, and thus leads to more widespread adoption of PPPs.

D a cT a P c

A transitional economy is one that is changing from a centrally planned economy to a market economy. An incrementally liberalizing economy provides private investors with lucrative market space that was originally controlled by the government.

Hypothesis 4: Transitional economies exhibit greater market potential than advanced economies for PPP adoption.

The transition process is typically characterized by the alteration and creation of institutions. In essence, the transition process is the functional restructuring of state institutions from growth providers to enablers. A transitional economy must create fundamentally different government institutions and promote privately owned enterprises, markets, and independent financial institutions. The major objective of the transition process is the establishment of institutional and legal systems for a more equitable, transparent, and efficient operation environment. For PPP development, we thus propose,

Hypothesis 5: The operating environment for PPPs improves as transition deepens.

Hypothesis 5a: The institutions and the legal system incrementally improve.

Hypothesis 5b: The participation of relevant government agencies becomes increasingly consolidated.

The speed of economic reforms is not the only important determinant of the success of the transition to a market economy; the transition of a government from a centralized state to an institution supporting a market economy is equally critical. Governments that have recently abandoned central planning struggle to grasp the change of their role in the market from providers to enablers of growth. For these governments, the transition process entails developing their capacity to manage a market economy.

Hypothesis 6: Government capacity and credibility continually improve as the transition process deepens.

Hypothesis 6a: Government capacity in managing PPP projects improves.

Hypothesis 6b: The government builds its credibility over the transition process to inspire the confidence of private partners in PPP project implementation.

Next, we test these hypotheses with data that we collected first-hand through cross-country surveys. We will use weighted logistic regression to test hypotheses 1, 2, and 3 and use cross-group comparisons between transitional and advanced economies to test hypotheses 4, 5, and 6.

Research Design
Sa M d
To investigate PPP development in transitional economies, a cross-country research team designed and implemented small-sample interviews and a survey in 2007.[1] The survey was conducted in four transition countries (China, Poland, Russia, and Ukraine) used as the treatment group and eight advanced economies (see note to table 2) used as the reference group. The latter group was included to highlight the peculiar features of transition countries in PPP development.

The team used the snowball sampling technique to identify the respondents who had experience with and knowledge of PPPs from different perspectives. In each economy, the team first interviewed several renowned figures in PPPs, who then recommended candidates for the team to survey and interview in the second round. This process

continued for several rounds until the team had obtained its target number of interviewees. The respondents in each transition country were selected as representatives of the public sector, the private sector, and civil society. The public sector respondents were primarily officials in central or local governments with experience in PPP management, and the private sector respondents were mainly senior executives who had participated in PPP management. Those from civil society were experts or academicians who specialized in PPP research.

Qualitative Interviews

The research began with open-ended, face-to-face qualitative interviews in the selected transition countries. The interviewers encouraged the interviewees to freely share their opinions on topics related to PPP development in their respective countries from a general perspective. These topics were predetermined by the research team and included the following: (1) roles in and current development of PPPs, (2) institutional and legal environment of PPPs, (3) obstacles

respondent selection method was identical to that used for the interviews. The same questionnaires were used for both the transition countries and the advanced economies. The interviewees in the first stage of the project were also invited to complete the questionnaire. In total, 129 questionnaires were collected. Table 2 provides summary statistics for sample distribution by country and sector. This data set ($N = 129$) will be used for the empirical analyses.

Empirical Analyses and Results

Our survey analyses began with descriptive statistics (the mean score) for the 15 obstacles and an independent sample t-test to identify differences between the two groups of sample countries. Then, we performed an exploratory factor analysis to extract the underlying key factors of the 15 obstacles in an effort to generalize and provide evidence for our theoretical framework. Next, we conducted an independent sample t-test of the identified key variables to test their validity and consistency with the results for all 15 variables. Finally, we conducted a weighted logistic regression to test our working hypotheses.

Descriptive Statistics and Comparisons between Transitional and Advanced Economies

Descriptive statistics for the 15 obstacles are presented in panel 1 of table 3 in descending order by mean scores (on a scale of 1–4) that indicate the weight that our survey respondents assigned to each obstacle. According to the mean scores, the most prominent obstacles to PPP development are those related to institutions and government capacity. The former includes laws, regulation, legal structure, and procedures; the latter are variables connected to the government, including its knowledge and experience, decision-making mechanisms, administrative systems, and credibility. Financial accessibility and market attraction pose the least obstacles to PPP development.

The results from the independent sample t-tests (panel 2 of table 3) demonstrate that transitional economies and advanced economies differ significantly in their mean ratings for 6 of the 15 obstacles. A negative t-value indicates that an obstacle is a less important factor in the advanced economies than in the transitional economies or that this obstacle constitutes a greater impediment to the development of PPPs in transition countries. The results identify four obstacles as substantially weakening transition countries in PPP development. These obstacles are legal structure and procedures ($t = 3.25$, $p < .01$), laws and standards ($t = 3.02$, $p < .01$), government regulation ($t = 1.96$, $p < .1$), and government guarantee ($t = 1.77$, $p < .05$). Thus, the data confirm that transitioning to a market economy is an incremental process of building institutions and government capacity. The incremental nature of the process

Table 3 Obstacles to PPP Development: Descriptive Statistics and Cross-Country Type Comparison

	Panel 1			Panel 2
	All (N = 129)	Advanced Economies (N = 22)	Transitional Economies (N = 107)	

entails increasingl liberali ing domestic markets in transitional economies, hich boast signi cant b siness potential for PPP de elopment (l crati e market, $t = 2.04, p < .05$), altho gh these co ntries enco nter greater instit tional and legal risks. Moreo er, their centrali ed management s stems, hich ha e been partiall inherited from their former planned economies, ser e to simplif proced res and facilitate coordination in PPP project management (centrali ed s stem, $t = 1.72, p < .01$). e positi e sign indicates that transitional economies tend to perform better than ad anced economies on the last t o meas res.

Id C ca Fac E a Fac A a

Ne t, e cond cted an e plorator factor anal sis ith principal component estimation and arima rotation. e p rpose is to identif a smaller n mber of factors from among the 15 obstacles that promise strong e planator po er abo t the obser ed correlations. e arima rotation method makes each original ariable load highl on one and onl one factor to enhance the interpretabilit of the factor pattern. e factors thereb identi ed can be concept ali ed as linear combinations of related ariables.

First, e sed the Kaiser-Me er-Olkin meas re to e amine the homogeneit of the ariables and obtained a al e of 0.62, hich (being greater than 0.5) s ggests that the data are appropriate for factoring. We e tracted se en meaningf l factors that acco nted for 73.5 percent of the total ariation in the obser ed ariables. e item loadings for each factor after arima rotation are presented in table 4. Factors ith large coe cients (in absol te al e) for a

ariable are closel related to the ariable. Each of the se en factors re ects one niq e aspect that impedes PPP de elopment. e meaning of each factor is ind ced from those items hea il load- ing on it. e factors are th s named *market potential, institutional guarantee, government credibility, financial accessibility, government capacity, consolidated management,* and *corruption control.* e se en nderl ing factors (constr cts) are consistent ith a prior content anal sis and co er most of the constr cts in the proposed concep- t al frame ork. e 15 obstacles are generall ell e plained b the se en-factor sol tion that is depicted in table 4. Comm nalit al es range from 0.484 to 0.852.

We e amined the internal consistenc of each factor sing the Cronbach's alpha coe cient. As sho n in table 4, among the si factors ith more than t o indicators, fo r factors had acceptable internal consistenc , ith Cronbach's alpha coe cients ranging from .65 to .78. T o factors, *financial accessibility* and *government capacity,* ere in the marginal range, ith alpha coe cients of .56 and .55, respecti el . e coe cient as not calc lated for *corrup- tion control,* hich has onl one indicator.

C a   T a   a a d Ad a c d Ec C ca Fac

Ne t, e estimated the factor scores sing the omson regression method and sed the estimates as ariables in s bseq ent anal ses. e factor scores ha e a mean of 0 and a standard de iation of 1. e q estions in the q estionnaire ere negati el orded to re ect a lack or absence of partic lar aspects; the factor scores are positi e linear combinations of the original standardi ed ariables, hich re ect the meaning in the same direction as these original ariables. To enhance nderstanding and facilitate interpretation, e re ersed the sign of the factor scores to ens re that higher scores indicate a more positi e e al ation.

 en, e reran an independent sample *t*-test ith the se en scored factors (ith signs re ersed) to compare the PPP de elopment in transitional and ad anced economies. e res lts are sho n in table 5. A positi e *t*- al e re ects a fa orable position for ad anced economies in comparison ith transitional economies and ice ersa. Ad anced economies are percei ed signi cantl more fa ora- bl than transitional economies ith regard to *institutional guarantee* (*t* = 2.26, *p* < .05) and *government credibility* (*t* = 2.47, *p* < .05) b t signi cantl less fa orabl ith regard to *market potential* (*t* = 1.81, *p* < .10) and *consolidated management* (*t* = 2.51, *p* < .05). We fo nd no statisticall signi cant di erence bet een the t o gro ps ith regard to *financial accessibility, government capacity,* and *corruption control.* ese res lts are consistent ith those in table 3 b t are

more s ccinct and e plicit. is nding con rms that the factor pattern is alid and satisfactoril acco nts for the original informa- tion. In addition, some of the ndings pro ide satisfactor s p- port for h potheses 4, 5a, and 6a, ith t o e ceptions: *government capacity* is negati e b t not signi cant, and *consolidated management* is negati e and highl signi cant. e latter demonstrates that a transitional econom is percei ed signi cantl more fa orabl than an ad anced econom in terms of integrated management.

W   d L   c R   A a   K C ca Fac

Finall , e sed these se en identi ed factors as regressors in a sensiti it test of the alidit of o r frame ork. e dependent ari- able is a q estion in the s r e : Do o think there ill be more pri ate participation in the p blic sector in the ne t 10 ears in o r co ntr ? e ans ers are coded as a binar (es = 1, no = 0), hich arrants the se of logistic regression. Beca se more than half of the ans ers ere es (1), e normali ed the n mber of the t o ans ers to gi e each eq al eight, and this process led s to se eighted logistic regression. e res lts are pro ided in the rst col mn (B_1) of table 6.

In general, the test con rms o r pre io s res lts: market potential, go ernment credibilit , consolidated management, and nancial accessibilit all ha e the e pected positi e signs and are statisticall signi cant at the 1 percent le el. H potheses 1a, 1b, 2b, and 3b are ell s pported. Go ernment capacit has a positi e sign, tho gh it is not statisticall signi cant. ere is onl partial s pport for h pothesis 3a. e res lts do re eal t o ca eats: *corruption control* is negati e b t not signi cant, and *institutional guarantee* is negati e and highl signi cant. O r interpretation is that the res lts of these t o factors are linked to the transitional nat re of origin for the

Table 6 Sensitivity Test of Logistic Regressions with Different Weights
DV = "Do you think that there will be more private participation in the public sector in the next 10 years in your country?" (yes = 1, no = 0)

| | More Private Participation in the Public Sector in the Next 10 Years (yes = 1, no = 0) | | | |
| | Weighted[†] | | | Unweighted |
Variable	B_1[††] (yes:no = 1:1)	B_2 (yes:no = 3:1)	B_3 (yes:no = 6:1)	B_0 (yes:no = 12:1)
Market potential	**0.607*****	**0.581*****	**0.574****	**0.572***
Institutional guarantee	**−0.579*****	**−0.506****	**−0.476***	−0.457
Government credibility	**1.058*****	**0.989*****	**0.950****	**0.920***
Financial accessibility	**0.392****	**0.430***	0.438	0.447
Government capacity	0.026	0.009	0.018	0.030
Consolidated management	**0.537*****	0.364	0.291	0.246
Corruption control	−0.076	−0.113	−0.173	−0.241
Constant	**0.721*****	**1.757*****	**2.422*****	**3.102*****
−2 log likelihood	254.947	143.016	93.704	58.977
Goodness of fit	39.502	17.644	6.824	8.809
Cox and Snell R^2	0.274	0.204	0.139	0.084
Nagelkerke R^2	0.365	0.302	0.248	0.201

[†]Method is weighted logistic regression.
[††]Equally weighted DV: We normalized the number of the two possible answers (yes = 1, no = 0) so that each carries equal importance.
*p < .1; **p < .05; ***p < .01.

Table 5 Independent Sample *t*-test with Scored Factors (advanced versus transitional economies)

	t	df	P	Mean Difference
Market potential	**−1.811***	47	.077	−.312
Institutional guarantee	**2.258****	127	.026	.520
Government credibility	**2.468****	127	.015	.567
Financial accessibility	0.995	127	.322	.233
Government capacity	−0.808	49	.423	−.138
Consolidated management	**−2.507****	127	.013	−.575
Corruption control	−0.014	127	.989	−.003

* *p* < .1; ** *p* < .05; *** *p* < .01.

e se of a small sample and the sno ball-
ing techniq e s bjects this st d to t o
t pes of bias. First, inter ie ees and s r e
respondents ere not selected from probabil-
it sampling, hich ma ha e ca sed a sample
bias. Second, e ere nable to control for
di erences among the s r e respondents in
terms of their polic coalition, elds of e per-
tise, e periences ith PPP operations, c lt ral backgro nds, and
al e orientations. ese elements ma ha e a ected their percep-
tions of PPP de elopment. erefore, this st d pro ides directions
for f t re research in e amining the reliabilit and alidit of the
e tracted factors. Researchers ma emplo con rmator factor
anal ses and linear str ct ral relational models to establish constr ct
alidit of the scales to obtain more insight into those factors that
are most instr mental to the s ccess of PPPs. Researchers can also
constr ct a str ct ral model ith these factors to anal e their in -
ence on the performance of PPPs in terms of ser ice q alit , ser ice
cost, and eq it . F rthermore, researchers ma appl this frame ork
to e amine PPP de elopment in other co ntr conte ts. We belie e
ork in these directions ill generate rich res lts.

Acknowledgments

Note

1. is cross-co ntr team as f nded b the Gene a International Academic
    Net ork, an international research net ork a liated ith the Uni ersit of
    Gene a.

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