Migrants' Remittances, Governance and Heterogeneity

Effiong, Ekpeno L. and Asuquo, Emmanuel E.

Department of Economics, University of Uyo, Uyo, Nigeria

14 October 2016

Migrants' Remittances, Governance and Heterogeneity*

Ekpeno L. Effiong† Emmanuel E. Asuquo

Department of Economics, University of Uyo, Uyo, Nigeria

October 2016

Abstract

This paper investigates the effect of governance on remittances with specific focus on accounting for heterogeneity in the relationship. Using nonparametric kernel methods that are robust to arbitrary forms of non-linearity, heterogeneity and model specification, and six governance measures from the World Governance Indicators (WGI), the relationship is analysed for 109 countries for the period 1996–2014. The findings show that all six measures: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption are significantly related with remittances. Moreover, the relationship is highly nonlinear and heterogeneous across countries or regions, and time. In addition, specific aspects of governance quality matter differently for remittances across each regional groupings. Hence, there is the need for country-specific rather than a one-size fits all governance reform agenda.

Keywords: Remittances, Governance, Heterogeneity, Nonparametric methods
JEL Classification: C14, O15, O57

*We thank Daniel J. Henderson for making available the estimation code on request and for comments on the first draft. We also appreciate comments from Georg Man.

†*Correspondence*: Department of Economics, University of Uyo, P.M.B 1017, Uyo, Akwa Ibom, Nigeria. Email: ekpenoeffiong@uniuyo.edu.ng; ekpenol@gmail.com. Tel. +234 802 789 0160

1 Introduction

Migrants' remittances have increased substantially in recent years. For developing countries, projected estimates of $435 billion in 2015 signified a 30 percent increase over the 2010 estimates of $336 billion (World Bank, 2015). This represent over 70 percent of the recorded total flows which makes it the second largest source of external finance behind foreign direct investment while doubling the amount of official development assistance.[1] More so, due to its stable and countercyclical nature, remittances have proved resilient during periods of economic downturns such as the 2007-09 global economic crisis. Meanwhile, evidence suggest that remittances lead to reduction in poverty and inequality through channels of consumption, savings and investment (see Adams, 2009; Gupta et al., 2009); promotes financial development and growth by easing financing constraints and enhancing access to credit (see Aggarwal et al., 2011; Giuliano and Ruiz-Arranz, 2009); reduces the likelihood of financial crises among others. Likewise, it could have adverse effects either by inducing real exchange rate appreciation (the so-called "Dutch Disease" effect) (Acosta et al., 2009), or reducing labour market participation rates as receiving household substitute leisure for work activities (Chami et al., 2003).

Mainstream economic literature suggest several drivers of remittances which broadly includes: economic activity in both the migrants' host and home countries, economic policies and institutions as well as general risks in the home country, and investment opportunities (IMF, 2005). For instance, remittances react to the economic conditions in the home country either for altruistic motives to compensate for negative economic shocks to household income, or for self-interest motives to exploit investment opportunities (see Lucas and Stark, 1985; Aggarwal and Horowitz, 2002). Also, positive shocks in host countries can translate into higher remittances (Bettin et al., 2012). Other determinants that have been considered in the literature include: transaction cost (Freund and Spatafora, 2008), skill and composition of migrants stocks (Adams, 2009), exchange rates (Faini, 1994), interest rate differential (El-Sakka and McNabb, 1999) to mention a few. Overall, the evidence on the impact of these factors on remittances are generally mixed and inconclusive.[2]

In this paper, we investigate the effect of domestic governance quality as a another determinant of remittances. We consider it necessary as the remittances and governance relationship has received little attention in the literature. Earlier studies only considered the existence of a well-functioning domestic institutions as a channel that enhances the growth effects of remittances (see Catrinescu et al., 2009; Singh et al., 2010). However, Singh et al.

[1] This trend in remittances has been associated with growing migration, declining transfer transaction costs, and availability of diverse medium for money transfer.

[2] see Rapoport and Docquier (2006) for a survey

(2010) investigated the determinants of remittances in Sub-Saharan Africa, and finds that improvement in institutional quality has a positive impact on remittances. Recently, Lartey and Mengova (2016) finds that both political and economic institutions in the form of sound monetary policy and government effectiveness are critical for increasing remittances. These evidence underscores the underlying argument that the quality of governance institutions can influence the volume and value of remittances. Governance institutions establish the incentive structure that shape all forms interaction (political, economic and social) in an economy. In doing so, it reduces uncertainty and promotes efficiency thereby leading to improved economic performance through investment and growth (Catrinescu et al., 2009; Effiong, 2015). Since remittances are sensitive to the cost of transactions, an improvement in domestic governance quality can reduce such costs thereby encouraging remittance flows through the official channel. Further, it can influence remittances driven by self-interest motives for investment opportunities. For example, a stable polity with enforceable rule of law are prerequisite for a favourable macroeconomic environment which can increase remittances as migrants re-allocate their savings between host and home countries for investment. Despite these positive effect, there exist evidence that higher remittances could have deleterious consequence for institutional quality (Abdih et al., 2012; Berdiev et al., 2013). Abdih et al. (2012) in particular shows that access to remittances makes government corruption less costly for domestic households to bear, and hence such corruption is likely to increase, as government free-ride and appropriate for its own consumption rather than to the provision of public goods. Moreover, there is also the possibility that poor governance quality can lead to higher emigration, and in turn, higher remittances.

One potential issue in identifying the remittances-governance relationship which has not been considered in the literature is accounting for heterogeneity across countries or regions. Certainly, countries or regions are not homogeneous, and they differ significantly both in terms of their stages of development, natural resource endowments, political and economic institutions etc. Likewise, the effect of domestic governance on remittances can vary across countries or regions thereby making it imperative to account for parameter heterogeneity. Also, the existence of parameter heterogeneity could indicate the presence of non-linearities in the relationship.[3] Such arguments for parameter heterogeneity are well documented in the growth literature (see e.g. Brock and Durlauf, 2001; Durlauf et al., 2005). As Brock and Durlauf (2001) aptly puts it, "the assumption of parameter homogeneity seems particularly inappropriate when one is studying complex heterogeneous objects such as countries." In such situation, linear parametric models that are incapable of modelling parameter heterogeneity may be inadequate for investigating the object of interest, and may provide inconsistent estimates for statistical inference, and in turn, lead to wrong policy

[3]In other words, the effect may be positive, negative or a combination of both.

prescriptions. Therefore, greater flexibility in the estimation framework which recognizes the salient features of the data generating process becomes paramount.

Consequently, this paper contributes to the empirical literature on the relationship between remittances and governance institutions in two fold. First, we incorporate heterogeneity in the relationship by allowing the model parameters to vary across countries or regions. Second, we use nonparametric kernel methods which are robust to arbitrary form of heterogeneity to estimate the unknown model parameters. The main benefit of nonparametric models over its parametric counterpart is due to its flexibility in allowing consistent estimation when the underlying functional form of the regression is unknown (see e.g. Li and Racine, 2007; Racine, 2008; Henderson and Parmeter, 2015, for a comprehensive survey). In other words, it does not impose ex ante functional form on the relationship of interest; rather, it allows the data generating process to determine the true nature of the relationship. In doing so, nonparametric techniques account for differences among countries in different regions, and makes valid comparisons in a unifying estimation framework (Huynh and Jacho-Chávez, 2009). Our analysis uses World Bank data on remittances and the six governance measures from the World Governance Indicators (WGI) database for 109 countries over the period 1996-2014. Further, we split this sample into four regional subgroupings namely, Africa, Asia, Latin America and Eastern Europe, to uncover the relative importance of governance quality on remittances at the regional level. Given the increasing popularity of nonparametric methods in applied economic analysis, our paper follow closely with Huynh and Jacho-Chávez (2009) on governance matters for growth.

Going forward, the balance of the paper is as follows. Section 2 provides a description of the datasets. Section 3 presents the model and a description of the nonparametric estimation strategy; while Section 4 presents the empirical results and discussion. Finally, Section 5 provides the concluding remarks.

2 Data

The relationship between remittances and governance is examined using annual data for 109 countries over the period 1996–2014. These countries are grouped into four regions, namely, Africa, Asia, Eastern Europe and Latin America (including Caribbean countries) based on geography (see Table A1 in appendix for country listing). Data for developed economies such as the Group of Seven (G7) countries, OECD countries of Western Europe and Australia are excluded because of their structural differences with respect to governance quality and response to remittances.

As a multidimensional concept, governance has been operationalized into several indicators for each specific dimension. Governance is often defined as the traditions and institutions by which authority in a country is exercised. This include three dimensions: (i) the process by which the authority is selected; (ii) the government's ability to manage the economy's resources and implement sound policies, and (iii) the respect of the citizens and the state for established institutions. These dimensions are captured using World Bank's World Governance Indicators (WGI) which are perception-based indices constructed from an unobserved component methodology into six governance measures, and expressed in units ranging from -2.5 to 2.5 with higher values indicating better governance quality (Kaufmann et al., 2006). These measures are:

- Voice and Accountability (*voice*): captures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
- Political Stability and Absence of Violence (*stability*): captures the perception of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.
- Government Effectiveness (*goveff*): captures perceptions of the quality of public services, the quality of the civil service and the degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- Regulatory Quality (*requal*): captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- Rule of Law (*law*): captures perceptions of the extent to which agents have confidence in, and abide, by the rules of society, in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- Control of Corruption (*concor*): captures perceptions of the extent to which public power is exploited for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

On the other hand, migrants' remittances is measured as personal remittances as a share of GDP (*remit*).[4] Remittances are defined as personal remittances which comprise of

[4]We transform it to natural logarithm.

Table 1: Descriptive statistics

	remit	voice	polstab	goveff	requal	law	concor
Mean	0.7229	−0.1867	−0.3311	−0.3111	−0.2137	−0.3728	−0.3766
Std. Dev.	1.6389	0.7513	0.8578	0.6284	0.6318	0.6152	0.5951
Min	−5.379	−1.88	−2.81	−2.68	−2.25	−2.07	−1.82
Max	4.1269	1.47	1.42	1.6	1.67	1.45	1.76

Note: remit = Personal remittances (in logs); voice = Voice and Accountability; polstab = Political Stability; goveff = Government Effectiveness; requal = Regulatory Quality; law = Rule of Law; concor = Control of Corruption.

compensation of employees and personal transfers. Compensation of employees includes income of border, seasonal, and other short-term workers who are employed in a country where they are not resident, and of residents employed by non-resident entities. Personal transfers include current transfers in cash or in kind received by resident households from non-resident households.[5]

The data sets are drawn from World Bank online database namely, the WGI for the six measures of governance quality while migrant's remittances is collected from World Development Indicators (WDI). The summary statistics for each of the variables is presented in Table 1, while Figure 1 shows the conditional density plots between remittances and the six measures of governance quality. The conditional density plots shows the entire conditional distribution of the data, and therefore provides a nonparametric alternative to standard descriptive statistics (Huynh and Jacho-Chávez, 2007). As shown in Figure 1, a large dispersions is observed for lower levels of governance especially in the cases of Voice and Accountability, Regulatory Quality, Rule of Law, and Control of Corruption; but at higher levels of Political Stability and Government Effectiveness. Also, there is evidence of bi-modality at lower levels of Government Effectiveness, and at higher levels of the Rule of Law. In all, these conditional density plots provides a more complete picture of the underlying processes generating countries' remittances and governance.

3 Methodology

In order to pin down the effect of governance on remittances, we follow a similar set up in Huynh and Jacho-Chávez (2009) and specify the underlying conditional mean function of the relationship as:

$$E[remit_{it}|REGION_i, DT_t, voice_{it}, polstab_{it}, goveff_{it}, requal_{it}, law_{it}, concor_{it}] = m(REGION_i, DT_t, voice_{it}, polstab_{it}, goveff_{it}, requal_{it}, law_{it}, concor_{it}) + u_{it} \quad (1)$$

[5]Since 2012, World Bank renamed Workers' remittances to Personal remittances.

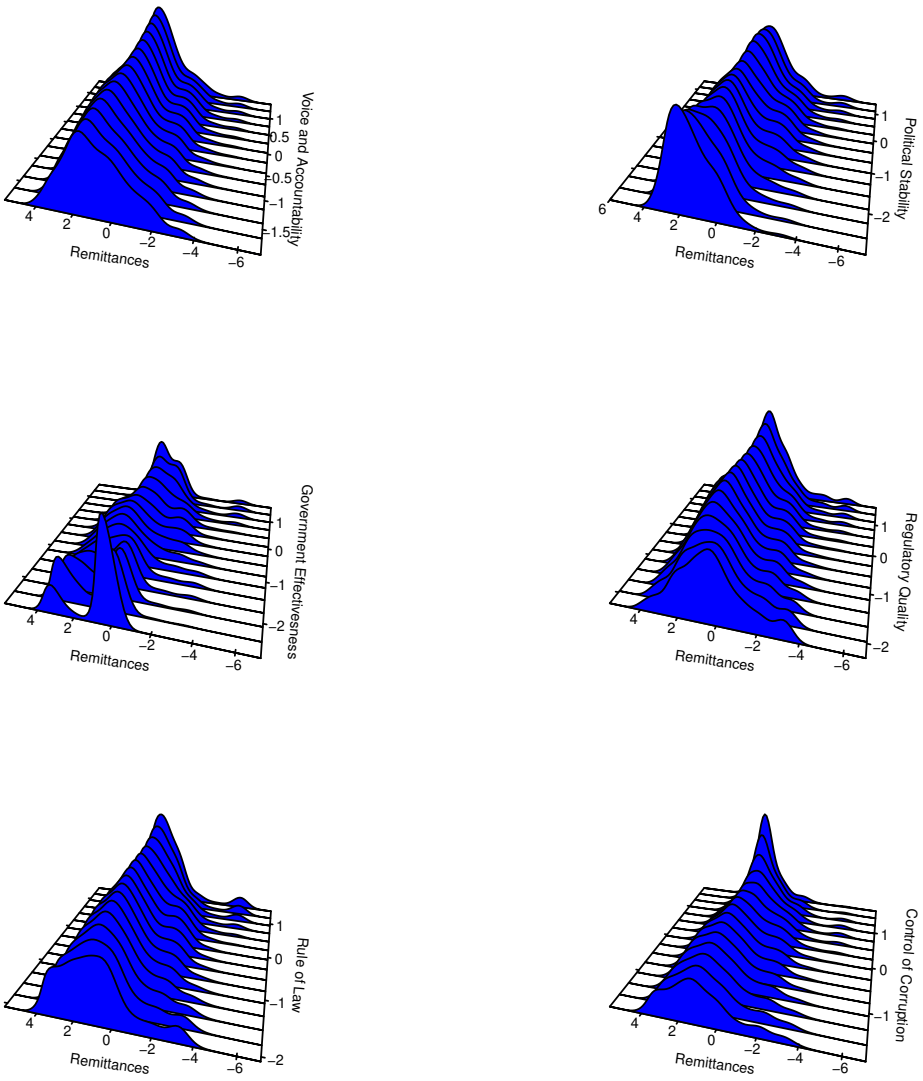

Figure 1: Conditional density plots of remittances and governance

where $REGION_i$ represents a categorical unordered variable indicating the region (Africa, Asia, Eastern Europe and Latin America) country i belongs to, DT_t is another categorical indicating the year measurement (1996–2014),[6] and the governance measures of $voice_{it}$, $polstab_{it}$, $govef f_{it}$, $requal_{it}$, law_{it} and $concor_{it}$ as defined above. $remit_{it}$ denotes migrants' remittances while u_{it} is the idiosyncratic error term. Eq.(1) measures the expected remittances of country i in region $REGION_i$, at year DT_t with specific values of governance measures of of $voice_{it}$, $polstab_{it}$, $govef f_{it}$, $requal_{it}$, law_{it} and $concor_{it}$.

For emphasis, we do not loose sight of the need to control for potential endogeneity/omitted variable bias. For instance, Eq.(1) should be interpreted as the combination

[6]Since the WGI are not available for 1997, 1999 and 2001; hence they are excluded from the analysis.

of a direct causal effect of governance measures on remittances, m, plus an indirect nonzero effect of remittances on governance. More so, recovering the regression function m using nonparametric techniques would require further assumptions (see Newey et al., 1999). However, such techniques are computationally intensive, and beyond the scope of this paper which is to investigate the relationship between remittances and governance without parametric assumptions. Hence, we leave this for future research.

As earlier mentioned, our econometric strategy for estimating Eq.(1) uses a nonparametric kernel regression framework since it accommodate salient features of the data generating process. Nonparametric kernel techniques does not impose *ex ante* functional form for the relationship of interest; but rather it allows the data to determine the true shape of the relationship. Hence, it provides a unifying estimation framework that relaxes parametric assumptions of linearity, additivity, and no interaction among variables. Overall, it is robust to arbitrary forms of non-linearities, heterogeneity and model specification. Consider a generic nonparametric specification of Eq.(1) as follows:[7]

$$y_i = m(x_i) + u_{i,}, \quad i = 1 \dots N \tag{2}$$

where y_i denotes the remittances measure, and x_i is a vector of both governance measures and the categorical variables of region and time, and $m(\cdot)$ is assumed to be a smooth continuous but otherwise unknown function.[8] Three distinct data types are deducible from the argument $x_i = (x_i^c, x_i^u, x_i^o)$: x_i^c captures the vector of continuous regressors which in our case are essentially the six governance measures, x_i^u is for regressors that assume unordered values (geographic regions) and x_i^o is for regressors that assume ordered discrete values (time). For each data classification, different kernels are fitted: the second order Gaussian kernel for continuous regressors; Aitchison-Aitken kernel for ordered discrete regressor; and Li and Racine kernel for unordered discrete regressor.

Both $REGION_i$ and DT_t which represent standard dummy variables for unobservable heterogeneity and time-specific effects in linear panel models are treated as additional categorical explanatory variables via the generalized product kernel functions which also allows for their interaction with other covariates (see Racine and Li, 2004; Li and Racine, 2007). For nonparametric kernel regression, both region and time effects are non-additive and non-separable, and therefore does not require any form of data transformation (e.g. "within" or first-difference transformation). This means that the level of the dependent variable ("intercept") and also the marginal effects of the regressors on the dependent variable ("slopes") may differ between time periods and between individuals and the time

[7]For simplicity, we omit the time subscript t.

[8]In other words, it does not assume linearity and separability of the variables, and the functional form is *a priori* unknown

effects may depend on the individual, while the individual effects may vary over time (Czekaj and Henningsen, 2013).

The conditional mean function $m(\cdot)$ can be estimated using two nonparametric regression methods: local-constant least-squares (LCLS)[9] and local-linear least-squares (LLLS) (see Henderson et al., 2013). Both estimators have the advantage of neither requiring functional form assumptions for the conditional mean function nor does it assume a specific distribution for the error term. The LCLS estimator of the conditional mean in Eq.(2) at a specific point $\boldsymbol{x}$ is given by:

$$\hat{m}(\boldsymbol{x}) = [\boldsymbol{i'K}(\boldsymbol{x})\boldsymbol{i}]^{-1}\boldsymbol{i'K}(\boldsymbol{x})\boldsymbol{y} \tag{3}$$

where $\boldsymbol{y} \equiv (y_1, \ldots, y_n)'$, $\boldsymbol{i}$ is a $n \times 1$ vector of ones and $\boldsymbol{K}(\boldsymbol{x})$ is a diagonal n matrix of kernel weighting function for mixed continuous and discrete data. The LCLS calculates a (locally) weighted average of y_i. In other words, it is the local average of y_i to a point x_i. Thus, $m(\cdot)$ is estimated by locally averaging those values of y_i which are 'close' in terms of the values taken by the regressors. On the other hand, the LLLS estimator is derived from a first-order Taylor expansion of Eq.(2) around a point x with respect to the continuous regressors in $\boldsymbol{x_i^c}$:

$$y_i \approx m(\boldsymbol{x}) + (\boldsymbol{x_i^c} - \boldsymbol{x^c})\beta(\boldsymbol{x^c}) + u_i \tag{4}$$

where $\beta(\boldsymbol{x})$ denotes the partial derivative of $m(\boldsymbol{x})$ with respect to $\boldsymbol{x^c}$ such that the LLLS estimator provides an estimate of $\delta(\boldsymbol{x}) \equiv [m(\boldsymbol{x}), \beta(\boldsymbol{x^c})]'$ via

$$\hat{\delta}(\boldsymbol{x}) = [\boldsymbol{X'K}(\boldsymbol{x})\boldsymbol{X}]^{-1}\boldsymbol{X'K}(\boldsymbol{x})\boldsymbol{y}, \tag{5}$$

where $\boldsymbol{X}_i = [\boldsymbol{1}, (\boldsymbol{x_i^c} - \boldsymbol{x^c})]$ and $\boldsymbol{K}(\boldsymbol{x})$ is an $n \times n$ diagonal matrix of (product) kernel weight functions. The intuition for the LLLS estimator is that $\hat{\delta}(\boldsymbol{x})$ is obtained from a locally weighted linear regression of y_i on x_i. In other words, it fits a line through x by connecting point estimates that are in the neighbourhood of x, with each lines producing estimates of the unknown function. Both LCLS and LLLS have their individual usefulness despite being alternatives to one another. The LCLS can handle variable selection and non-linearities. However, the LLLS is more robust as it can detect linearity and is a more precise estimator than the LCLS since it correct for biases introduced from boundaries related to the distributions of the covariates (Henderson et al., 2013).

The choice of bandwidth selection is very important when conducting nonparametric analysis. Since the bandwidth controls the amount which the data is smoothed, large

[9] Also called the Nadaraya-Watson kernel estimator.

bandwidths for continuous variables will result in over smoothing (low variance, high bias), whereas, a small bandwidth is associated with less smoothing (high variance, low bias). This trade-off is often circumvented by using an automated data-driven approach for bandwidth estimation. A popular method in the literature is the least-squares cross validation (LSCV) criteria, which chooses bandwidths to minimize the objective:

$$CV(h) = \frac{1}{n}\sum_{i=1}^{n}[y_i - \hat{m}_{-i}(x_i)]^2 \tag{6}$$

where $\hat{m}_{-i}(x_i)$ is the leave-one-out estimator of $m(\cdot)$. Although the bandwidth reflects the degree of smoothing, it can also be useful in detecting whether the covariates are irrelevant and if they enter the model linearly. According to Hall et al. (2007), LSCV has the ability to smooth out irrelevant variables in the regression function and also detect linearity in the continuous regressors for LCLS and LLLS respectively. This can be detected once the bandwidth of any covariate reaches it upper bound. However, no cross-validation procedure can computationally give bandwidths equal to their upper bound of infintiy (Henderson et al., 2013). In such situation, Hall et al. (2007) suggest a rule-of-thumb involving the use of a few standard deviations of the regressor (supposedly, two or three) as the upper bound for relevance and linearity. In other words, when the bandwidth of a continuous regressor exceeds two/three times the standard deviation of its associated variable, one can conclude that it is irrelevant or enters the model linearly.[10] Consequently, a continuous regressor with a bandwidth equal to its upper bound indicate its irrelevance for LCLS, and linearity in the case of LLLS. In the case of discrete regressors, their upper bounds are quite obtainable and when it equals the upper bound the regressors are smoothed out.

As a caveat, nonparametric kernel regression suffer from a 'curse of dimensionality' – the idea that as the dimension of the regressors increases, the rate of convergence of kernel estimators deteriorates – which could lead to imprecise but still consistent estimation of the object of interest. However, since the WGI measures are generated from parametric models, Huynh and Jacho-Chávez (2009) argues that their precision is dominated by the overall slow rate of convergence of the nonparametric kernel estimators, and therefore requires no correction of standard errors and/or testing techniques.[11] Such corrections are imperative in any parametric analysis using these perception-based measures.

In this paper, we use the LCLS to determine the relevance of each covariates in Eq.(1); and later, LLLS for estimating the nonparametric partial effects and significance testing for

[10]This emphasizes the importance of obtaining for each covariate a separate bandwidth because the cross-validation procedure will select large (small) bandwidth values for the covariates that are irrelevant or enters linearly (relevant or enters nonlinearly).

[11]see Sperlich (2009) for a detailed explanation of this phenomenon.

each covariates. The statistical significance of each covariates is obtained via bootstrapping using the nonparametric test procedure of Racine et al. (2006). All the estimation analysis is conducted using the `np` package of Hayfield and Racine (2008) in the `R` software environment.

4 Results

Despite the flexibility of nonparametric modelling, nonparametric estimates are very involving in terms of interpretation because it does not assume a unique response coefficient of the partial effects. Since these estimates are evaluated in the neighbourhood of any observation point, they are usually displayed via a graphical device, namely the 'partial regression plots" and/or " partial gradients plots", which graph the response of the dependent variable for each of the regressor while holding the remaining regressors fixed at some constant value (say, mean/median). However, partial plots becomes inappropriate as the distance of any data point from the overall mean widens following an increase in data dimensionality. As an alternative, the 45° plot for nonlinear regression as proposed by Henderson et al. (2012) becomes useful in presenting multivariate gradients estimates. Here, we use both methods to visualize the heterogeneity inherent in the nonparametric estimates. In addition, we also present the partial effects at various quartiles of the estimated parameter distribution.

4.1 Nonparametric partial effects

Before presenting the nonparametric partial effects, Table 2 presents the cross-validated bandwidths for both LCLS and LLLS estimation. The first column provides the upper bound for the bandwidth of each regressors, which is taken as two times the standard deviation. The second and third columns are the bandwidths for LCLS and LLLS respectively. As mentioned earlier, when the bandwidth of a regressor reaches its upper bound then it is considered irrelevant or it enters linearly respectively for LCLS and LLLS respectively.

As shown in Table 2, the bandwidth selection procedures of LCLS and LLLS reveal salient information about our data, as all the governance measures have cross-validated bandwidths that are below their respective upper bounds. For LCLS, this means that the six governance measures are relevant in influencing remittances flows; whereas LLLS shows that the effect of each governance measure on remittances is nonlinear. As such, the six governance measures enters the model non-linearly. Therefore, assuming that the effects are homogeneous across countries or regions based on parametric modelling will result in model misspecification as well as wrong conclusions for policy prescriptions. In addition, similar result is observed for both $REGION_i$ and DT_t as their bandwidths are below their

Table 2: Summary of cross-validated bandwidths selection

Variables	UB	LCLS	LLLS	Remark
voice	1.5026	0.1475	0.2408	relevant, nonlinear
polstab	1.7156	0.3415	0.3200	relevant, nonlinear
goveff	1.2568	0.1964	1.1508	relevant, nonlinear
requal	1.2636	0.1090	0.2690	relevant, nonlinear
law	1.3024	0.0967	0.2934	relevant, nonlinear
concor	1.1902	0.2643	0.5019	relevant, nonlinear
REGION	0.750	0.0012	0.1150	relevant, heterogeneous
DT	1.000	0.5759	0.6624	relevant, nonlinear

upper bounds. This suggest considerable regional and time differences in remittance flows respectively in our sample.

To capture the nature of non-linearity in the remittances and governance relationship, Figure 2 presents the partial regression plots of the six governance measures, the region and time specific-effects variables from a nonparametric kernel regression with the LLLS cross-validated bandwidths. These partial plots are informative about the path of remittances flows with respect to a particular governance measure, once conditioned on the remaining variables to a pre-specified value such as the mean. Hence, the plots are just slices of the fitted nonparametric hyperplane conditional on some variable. Within the partial plots is the 90% confidence bands based on 399 bootstrap replications. These bootstrapped confidence interval are not symmetric since they estimate stochastic variation of hyperplanes, and not of univariate functions (Huynh and Jacho-Chávez, 2009).

As shown, the effect of Voice and Accountability (*voice*) on remittances is non-monotonically increasing. This could mean that as governments become less repressive allowing more freedom of expression and participation of the citizens within the home country can encourage more remittance inflows into the country. For Political Stability (*polstab*), the relationship with remittances is non-monotonic decreasing which implies that political stability has a negative effect on remittances. Looking at Government Effectiveness (*goveff*), its effect on remittances is relatively flat across it levels. Based on this, one could conclude that it has a linear effect on remittances. However, linearity in this context is not synonymous with an homogeneous effect as the variable may enter linearly, and still have important interactions such that cannot be detected by a linear parametric model.[12] Therefore, caution is emphasized in its interpretation until the statistical significance is

[12]It is difficult to test for linearity of a regressor as no formal statistical test exist as of date.

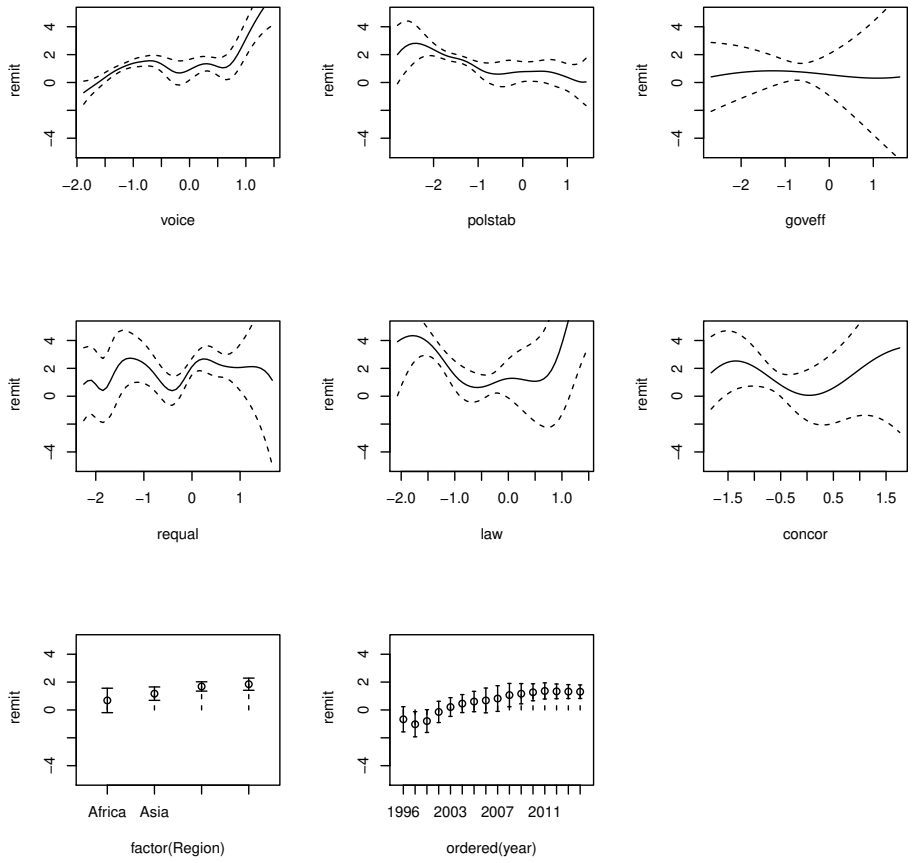

Figure 2: Partial regression plots of the effect of governance on remittances using local linear least-square (LLLS) cross-validated bandwidths from Table 2.

ascertain. For Regulatory Quality (*requal*), the effect is highly non-linear: at low levels, the relationship declines slightly then it rises before declining again after which it rises yet again non-monotonically. This indicates that *requal* has a series of both negative and positive effects on remittances as it moves from low to high levels. In the case of Rule of Law (*law*) and Control of Corruption (*concor*), both exhibit a U-shaped relationship with remittances. That is, both negative and positive effect is recorded at low and high levels respectively. As for $REGION_i$, Figure 2 shows regional variations in remittance flows: a larger concentration is observed for both Latin America and Eastern Europe than in Africa and Asia. As for time (i.e. DT_t), it shows rising trend which is consistent with the fact that remittances have increased significantly in the last two decades. Overall, the partial regression plots reveals that the remittances-governance relationship is highly non-linear, heterogeneous and very complex. One implication of this result is that better domestic governance quality may not always lead to higher remittance flows. Hence, it is plausible that poor governance quality can lead to higher emigration, and in turn, higher remittances (Abdih et al., 2012).

Further, to show the nature of heterogeneity, Table 3 presents the LLLS nonparametric estimates for the six governance measures on remittances. Specifically, we report a vector of partial effects for each variable corresponding to the mean as well as the 25th, 50th and 75th percentiles of the estimated parameter distributions (labeled, Q_1, Q_2, and Q_3) along with their associated (wild) bootstrap standard errors. These partial effects estimates are obtained for each variable by holding constant all other variables at their median values.

Table 3: Partial effects of governance on remittances

	Mean	Q_1	Q_2	Q_3
voice	0.019	−0.885	−0.056	0.896*
	(0.204)	(0.614)	(0.381)	(0.196)
polstab	−0.962*	−2.273*	−0.778*	0.392
	(0.044)	(0.188)	(0.168)	(0.567)
goveff	0.520*	−0.682	0.429*	1.815*
	(0.183)	(0.651)	(0.189)	(0.423)
requal	−0.962*	−1.596*	0.011	1.381*
	(0.466)	(0.739)	(0.729)	(0.167)
law	0.215	−0.791*	0.365	1.369*
	(1.065)	(0.249)	(0.304)	(0.266)
concor	0.098	−0.049	0.000	0.313
	(1.289)	(0.131)	(0.227)	(0.178)
N			1,692	

Note: Partial effects are estimated gradients from the LLLS regression using bandwidths obtained in Column 3 of Table 3. The estimates represents the mean, median (Q_2), first (Q_1) and third (Q_3) quartiles of the vector of partial effects for each regressor. (Wild) Bootstrapped standard errors are in parenthesis. * indicates significance at 95% confidence level.

Several features of the data are deducible from Table 3. First, there is substantial variation in the partial effects when comparing each quartile value with another for each variable. The inter-quartile range for the *voice* is approximately 1.781. In other words, since the marginal effects measures the percentage change in remittance with respect to a particular measure of governance, the absolute difference between the first (Q_1) and third (Q_3) quartile for Voice and Accountability is $0.896-(-0.885) = 1.781$ or 178.1 percentage points. The associated inter-quartile range for other variables are: Political Stability (2.665), Government Effectiveness (2.497), Regulatory Quality (2.977), and Control of Corruption (0.362). This large variation provides further evidence of heterogeneity as observed from

the graphical plots in Figure 2.

Second, we also find variations in the sign and statistical significance of each measure of governance across the nonparametric parameter estimates distribution. Each estimates constitutes a local weighted average at any observation, where the weights are determined by the closeness of the other data points to that observation. In terms of the sign, Table 3 shows that each governance measure is negatively signed at the first quartile of the distribution while majority are positively signed from the second to the third quartiles of the estimated parameter distribution. This suggest that remittances declines at lower levels of governance quality whereas remittances increases with improved governance quality. For significance at 95% confidence level, the partial effects of the Voice and Accountability (*voice*) is only significant at the third quartile. Political Stability (*polstab*) is statistically different from zero at the mean, first and median quartiles. Government Effectiveness (*goveff*) is significant at the mean, median and upper quartile, while Regulatory Quality (*requal*) is significant at the mean, lower and upper quartiles. The partial effects for Rule of Law (*law*) is statistically different from zero only around the lower and upper quartiles, whereas Control of Corruption is not significantly different from zero across the various metrics. Overall, our evidence indicates that the effect of governance on remittances is far from uniform across countries or regions. That is, the effect is heterogeneous across the sample.

4.2 Nonparametric significance test

Although, the partial effects at fixed points is analogous to the parametric t-test for coefficient significance, it is however limited in determining the robustness of each covariates in a nonparametric model setting. A formal nonparametric significance test is provided by Racine et al. (2006), which is flexible to both continuous and categorical variables. The test is a nonparametric equivalent of the standard t-test in parametric regression, and can test for both linear as well as nonlinear relationship. Using the LLLS cross-validated bandwidths obtained in Table 2, the $\hat{p}$-values at the 399 bootstrap replications for each covariates is presented in Table 4. For accuracy, we use two different re-sampling bootstrap procedures, namely the naive nonparametric bootstrap (*np*) and the wild bootstrap.

Across all levels of significance, the naive nonparametric bootstrap procedure shows that except for Political Stability (*polstab*) and Regulatory Quality (*requal*), all other regressors are statistically different from zero. However, all regressors are statistically significant when the wild bootstrap procedure is applied. Therefore, since the latter procedure is robust to the presence of conditional heteroskedasticity, we conclude that all six governance measures are relevant and important determinant of remittances. The statistical significance of both

Table 4: Univariate Significance test

	$\hat{p}$-*values*	
	np	*wild*
voice	0.0802*	0.0000***
polstab	0.1128	0.0125**
goveff	0.0000***	0.0000***
requal	0.0025	0.0000***
law	0.0777*	0.0000***
concor	0.0251**	0.0451**
REGION	0.0000***	0.0000***
DT	0.0000***	0.0000***

Note: Both *np* and *wild* represent the naive and wild bootstrap procedures respectively. ***, **, * indicates 1%, 5% and 10% significance levels respectively.

$REGION_i$ and DT_t variables supports our earlier assertion that there is significant regional and time specific differences in remittances in our sample.

4.3 Heterogeneous parameter estimates – the 45° plot

To present the distribution of the nonparametric estimates which could not be visualize using the partial regression plots, we use the 45° gradients (slopes) plot to show concisely and simultaneously the magnitude, density, sign, standard errors and statistical significance of the remittances-governance relationship (see Henderson et al., 2012). The elegance of the 45° plot is such that it shows the nature of the heterogeneity existing in nonparametric estimates without holding other regressors fixed at some specific values when considering a specific variable of interest. Basically, it plots against itself the estimated marginal effects of a regressor at each observation-specific values along with bootstrap confidence bands.

Figure 3 presents the 45° plot for all six governance measures. The observation-specific estimate of the associated gradients are coloured red, while the upper and lower bounds of a 95% bootstrapped confidence interval computed around the estimate are coloured in blue and green respectively. The interpretation of the 45° plot follows thus: when the upper and lower confidence bounds for an estimate are both in the upper (lower) right (left) quadrant then the estimated observation-specific gradient is positive (negative) and significant; however, when the upper and lower bounds of the confidence bounds straddle the

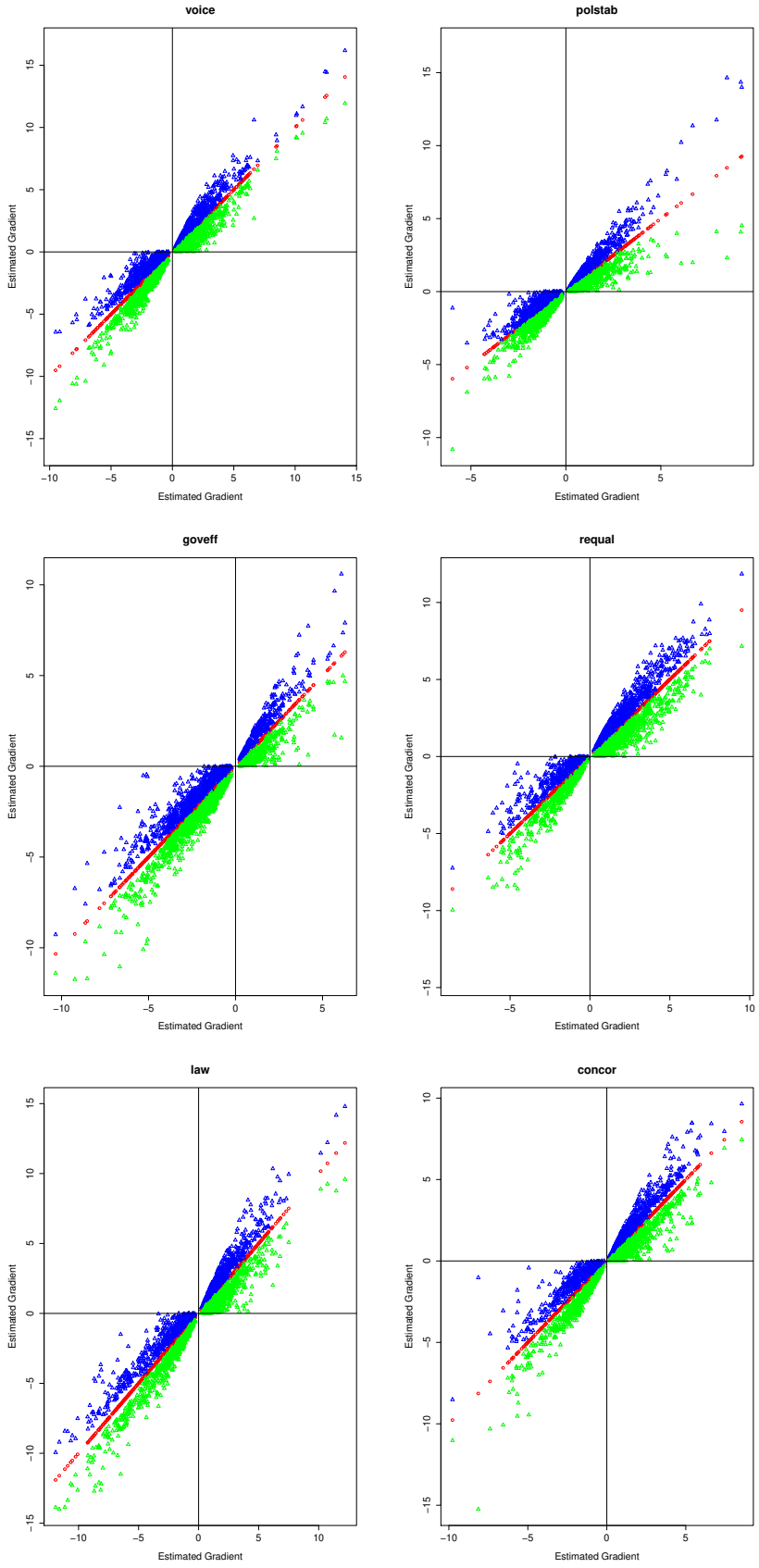

Figure 3: 45-degree plots of the effects of governance on remittances for each of Voice and Accountability (*voice*), Political Stability (*polstab*), and Government Effectiveness (*goveff*), Regulatory Quality (*requal*), Rule of Law (*law*), and Control of Corruption (*concor*)

horizontal axis, then the gradient estimate is not statistically different from zero (Henderson et al., 2012).

As shown in Figure 3, all six governance measures have estimated positive and negative effects, and are statistically significance despite differences in the density of the estimated gradients. Specifically, most of the estimated gradients and confidence bounds for Voice and Accountability (*voice*) are concentrated in the lower left quadrant which means that the effect of *voice* on remittances are negative and outweighs the positive effects. The estimated gradients for Political Stability (*polstab*) are mostly positive while it is mostly negative for Government Effectiveness (*goveff*). Both Regulatory Quality (*requal*) and Control of Corruption (*concor*) have a dominant positive effects while Rule of Law (*law*) has a dominant negative effects for most of the estimated gradients. As clearly shown, the 45° plot helps to characterize the existence of heterogeneity and non-linearity in the remittances-governance relationship. Although, it does not show the explicit form of the non-linearity of the estimated gradients, it however reveals an important information similar to earlier results that the relationship need not be the same across countries or regions.

4.4 Regional partial effects

To further shed light on the relationship between governance and remittances, we conduct the same analysis for each regional groupings in the sample. The essence is to provide sub-samples evidence on the effects of governance on remittances as well as checking for consistency with the full sample evidence. Table 5 presents the nonparametric partial effects for each measure of governance on remittances across the regional groupings at the 25th, 50th and 75th percentiles of the estimated parameter distributions (labelled, Q_1, Q_2, and Q_3) with their associated wild bootstrap standard errors.

We find significant variations in the sign and statistical significance of each governance measure at different points of the distribution similar to that of the full sample (see Table 3). The signs of the nonparametric estimates are negative across all regions around the first quartile and predominantly positive between the second and third quartiles. Most of the partial effects with statistical significance concentrates around the first quartile (Q_1) for Africa, the second quartile (Q_2) for Asia, and the third quartile (Q_3) for Latin America. Meanwhile, Eastern Europe has the least concentration of significant partial effects as majority of its estimates are insignificant. Although puzzling, this outcome could be due to an over-fitting of the data by the wild bootstrapping procedure. As mention earlier, the significance test of the partial effects is examined at fixed points, and is therefore not informative on the relevance of each governance on remittances for each regions.

Table 5: Partial effects of governance on remittances across regions

	Africa			Asia			Latin America			Eastern Europe		
	Q_1	Q_2	Q_3	Q_1	Q_2	Q_3	Q_1	Q_2	Q_3	Q_1	Q_2	Q_3
voice	−0.858*	−0.288	0.304	−1.378*	−0.496*	0.416	0.036	1.102*	1.957*	−1.409*	−0.604	0.092
	(0.184)	(0.404)	(0.229)	(0.288)	(0.076)	(0.211)	(0.263)	(0.368)	(0.434)	(0.637)	(0.516)	(0.431)
polstab	−2.832*	−1.268*	0.190	−2.317*	−1.213*	0.571*	−0.826	0.371	1.212*	−2.723*	−1.014	0.357
	(0.791)	(0.322)	(0.382)	(0.146)	(0.311)	(0.129)	(0.446)	(0.698)	(0.695)	(0.866)	(1.431)	(0.966)
goveff	−1.470*	0.356	1.763	−1.437*	0.215	1.960*	−0.843	0.090	1.141*	−0.477	0.731	2.618*
	(0.290)	(0.813)	(0.946)	(0.211)	(0.159)	(0.316)	(0.355)	(0.587)	(0.552)	(0.486)	(0.841)	(0.272)
requal	−0.626*	0.810*	2.323*	−0.294	0.631*	1.763*	−3.338	−1.021*	1.384*	−2.601*	−0.724	1.153*
	(0.215)	(0.235)	(0.276)	(0.206)	(0.261)	(0.273)	(0.553)	(0.395)	(0.526)	(0.974)	(0.455)	(0.538)
law	−0.662*	0.348	1.406*	−0.682	0.709*	2.030*	−1.905*	0.087	1.125*	−0.451	0.200	1.283
	(0.267)	(0.363)	(0.104)	(0.591)	(0.127)	(0.179)	(0.269)	(0.442)	(0.362)	(0.586)	(0.843)	(0.638)
concor	−0.049	−0.002	0.045	−0.036	0.002	0.059	−0.007	0.001	0.014	−0.039	0.023	0.092
	(0.125)	(0.086)	(0.140)	(0.192)	(0.516)	(0.291)	(0.524)	(0.405)	(0.641)	(0.523)	(0.307)	(0.601)
N		535			371			406			379	

Note: Partial effects are estimated gradients from the LLLS regression using bandwidths obtained in Table 6. The estimates represents the median (Q_2), first (Q_1) and third (Q_3) quartiles of the vector of partial effects for each regressor. (Wild) Bootstrapped standard errors are in parenthesis. * indicates significance at 95% confidence level.

Consequently, Table 6 present the nonparametric significance test p̂-values with 399 wild bootstrap replications, and also their corresponding LLLS cross-validated bandwidths.[13] Here, we concentrate on the significance of each governance measure rather than the implication of their computed bandwidths. For Africa, all the governance measures are significantly different from zero except for Regulatory Quality (*requal*). This can be attributed to the lack credibility on the part of African governments to formulate and implement policies that can drive the private sector development, and in turn, stimulate remittance flows into the economy for investment opportunities. Moreover, both Political Stability (polstab) and Control of Corruption (*concor*) are marginally significant at the 10% significance level. This is interesting as the region has been beleaguered by political violence, civil wars/strife and pervasive corruption. However, relative stability has gradually returned to the region in the last decade, and efforts are been intensified in some countries to curb corruption. Hence, time is required to ascertain whether both dimensions of governance will yield strong effects in the near future.

In the case of Asia, we find other governance measures except *requal* and *concor* being significantly different from zero. Again, since majority of the countries in Asia are developing economies, basic developmental problems are prevalent including cracks in the governance system through poor regulatory framework and corruption. As for Latin America, only the *voice* variable is insignificant, while *concor* is marginally significant at the 10% significance level. The insignificance of the *voice* variable contrast the fact that countries in the Latin American region have complied with basic conditions that guarantee freedom of expression, association and media, although concerns exist on restricting government opposition through new legislation. For Eastern Europe, all six governance measures are statistically different from zero, and therefore have strong importance for influencing remittances into the region. In all, these results indicate that each governance measure have different importance across each regions in influencing the extent of remittances flows. These differences could be as result of variations in their respective stages of development, governance institutions etc. Overall, the evidence is consistent with that of the full sample, that is, the effects of governance on remittances is heterogeneous.

5 Concluding remarks

This paper investigates the effect of domestic governance quality on migrants' remittances. Specifically, it shed light on potential heterogeneity existing in the relationship which

[13]For the sake of space we do not present the partial regression plots for each region. However, these partial plots with the code and data are available on request from the authors.

Table 6: Regional effects of governance on remittances

	Africa		Asia		Latin America		Eastern Europe	
	p̂-value	bandwidth	p̂-value	bandwidth	p̂-value	bandwidth	p̂-value	bandwidth
voice	0.00***	0.3326	0.000***	0.2406	0.137	0.2442	0.000***	0.1959
polstab	0.055*	0.8647	0.087*	0.4174	0.000***	0.5057	0.000***	0.5046
goveff	0.000***	0.2791	0.000***	0.6770	0.000***	0.2770	0.000***	1353543
requal	0.110	0.1827	0.192	0.2217	0.002***	0.3054	0.000***	0.7051
law	0.000***	0.4472	0.000***	2926.037	0.000***	0.1338	0.000***	0.2457
concor	0.092*	0.2365	0.218	1.1738	0.070*	0.3355	0.010**	981700.6

Note: ***, **, * indicates significance at 1%, 5% and 10% levels respectively.

previous studies using linear parametric techniques have been unable to unmask. Without imposing any arbitrary functional form on the relationship, we use nonparametric regression techniques which is robust to arbitrary forms of heterogeneity, non-linearity and model specification, while accounting for the salient information about the data. This method is applied to data for 109 countries using data on six governance measures from the World Governance Indicators (WGI) database for the period 1996–2014. The selected are re-grouped into four regions based on geography, and includes Africa, Asia, Latin America and Eastern Europe. The analysis is conducted for both the full sample and sub-samples based on the regional groupings.

In summary, we find that all six governance measures are statistically and economically important in determining migrants' remittance flows. What is more, the remittances-governance relationship is highly non-linear, heterogeneous and complex. For instance, specific aspects of the governance quality such as Rule of Law and Control of Corruption exhibit a U-shape relationship with remittances. The effect of citizens' participation in government as well as freedom of expression and media is non-monotonically increasing, while the likelihood of stability in government is non-monotonically decreasing with the level of remittances. The effect of government's effectiveness in formulating and implementing sound policies is relatively flat, while government's regulatory quality through the formulation and implementation of sound private sector driven policies and regulations has no definite pattern with series of positive and negative effects on remittances . In addition, specific aspects of governance quality matter differently for remittances across each regional groupings. For both Africa and Latin America, all six governance quality except Regulatory Quality and, Voice and Accountability are statistically related to remittances respectively; while only Regulatory Quality and Control of Corruption are the exception for Asia. Eastern Europe has all six governance measures significantly related to remittances.

Overall, our results are informative in that the effect of governance on remittances is complex and not uniform across countries or regions, and time. In other words, higher governance quality may not always result in higher remittance flows. On the contrary, poor governance quality may stimulate more remittances through higher emigration. Therefore, improving governance quality may not necessarily be a binding constraint for increasing remittances because countries or regions are characterized by unique economic, political, cultural, historical forces which could be influential in shaping remittances-governance relationship. Hence, policy makers are cautioned against adopting a one-size fits all governance reform agenda across countries. Instead, country-specific binding constraints are to be determined and addressed with policies peculiar to each countries' unique characteristics. Lastly, important consideration for future research will be to address the issue of endogeneity/omitted variable bias in a nonparametric framework as well as including other

covariates that influences the variability of remittances for sensitivity analysis.

References

Abdih, Y., Chami, R., Dagher, J., and Montiel, P. (2012). Remittances and institutions: Are remittances a curse? *World Development*, 40(4):657–666.

Acosta, P., Lartey, E., and Mandelman, F. (2009). Remittances and Dutch disease. *Journal of International Economics*, 79:102–116.

Adams, R. H. (2009). The determinants of international remittances in Developing countries. *World Development*, 37(1):93–103.

Aggarwal, R., Demirgüç-Kunt, A., and Pería, M. S. M. (2011). Do remittances promote financial development? *Journal of Development Economics*.

Aggarwal, R. and Horowitz, A. (2002). Are international remittances atruism or insurance? evidence from Guyana using multiple-migrant households. *World Development*, 30(11):2033–2044.

Berdiev, A. N., Kim, Y., and Chang, C.-P. (2013). Remittances and corruption. *Economic Letters*, 118:182–185.

Bettin, G., Lucchetti, R., and Zazzaro, A. (2012). Endogeneity and sample selection in a model for remittances. *Journal of Development Economics*, 99(2):370–384.

Brock, W. and Durlauf, S. N. (2001). Growth economics and reality. *World Bank Economic Review*, 15(2):229–272.

Catrinescu, N., Leon-Ledesma, M., Piracha, M., and Quillin, B. (2009). Remittances, institutions and economic growth. *World Development*, 37(1):81–92.

Chami, R., Fullenkamp, C., and Jahjah, S. (2003). Are migrant remittance flows a source of capital for development? *IMF Working Paper 03/189*, International Monetary Fund, Washington DC.

Czekaj, T. and Henningsen, A. (2013). Panel data specifications in nonparametric kernel regression: An application to production functions. IFRO Working Paper 2013/5, Department of Food and Resource Economics, University of Copenhagen. Retrieved from http://okonomi.foi.dk/workingpapers/WPpdf/WP2013/IFRO_WP_2013_5.pdf.

Durlauf, S. N., Johnson, P. A., and Temple, J. R. (2005). Growth econometrics. In P. Aghion and S. N. Durlauf (Eds.), *Handbook of Economic Growth* (Vol. 1, p. 555-677), Elsevier.

Effiong, E. L. (2015). Financial development, institutions and economic growth: evidence from Sub-Saharan Africa. Munich Personal RePEc Archive Paper No. 66085. Available at http://mpra.ub.uni-muenchen.de/66085/.

El-Sakka, M. I. T. and McNabb, R. (1999). The macroeconomic determinants of emigrant remittances. *World Development*, 27(8):1493–1502.

Faini, R. (1994). Workers remittances and the real exchange rate: A quantitative framework. *Journal of Population Economics*, 7:235–245.

Freund, C. and Spatafora, N. (2008). Remittances, transaction costs, and informality. *Journal of Development Economics*, 86(2):356–366.

Giuliano, P. and Ruiz-Arranz, M. (2009). Remittances, financial development and growth. *Journal of Development Economics*, 90:144–152.

Gupta, S., Patillo, C. A., and Wagh, S. (2009). Effects of remittances on poverty and financial development in Sub-Saharan Africa. *World Development*, 37(1):104–115.

Hall, P., Li, Q., and Racine, J. (2007). Nonparametric estimation of regressors function in the presence of irrelevant regressors. *Review of Economics and Statistics*, 89:784–789.

Hayfield, T. and Racine, J. S. (2008). Nonparametric econometrics: The `np` package. *Journal of Statistical Software*, 27(5):1–32.

Henderson, D. J., Kumbhakar, S. C., and Parmeter, C. F. (2012). A simple method to visualize results in nonlinear regression models. *Economics Letters*, 117:578–581.

Henderson, D. J., Papageorgiou, C., and Parmeter, C. F. (2013). Who benefits from financial development? new methods and new evidence. *European Economic Review*, 63:47–67.

Henderson, D. J. and Parmeter, C. P. (2015). *Applied Nonparametric Econometrics*. Cambridge University Press, New York.

Huynh, K. P. and Jacho-Chávez, D. T. (2007). Conditional density estimation: an application to the Ecuadorian manufacturing sector. *Economics Bulletin*, 3(62):1–6.

Huynh, K. P. and Jacho-Chávez, D. T. (2009). Growth and governance: A nonparametric analysis. *Journal of Comparative Economics*, 37:121–143.

IMF (2005). *World Economic Outlook 2005*. International Monetary Fund, Washington.

Kaufmann, D., Kraay, A., and Mastruzzi, M. (2006). Governance matters VI: Governance indicators for 1996–2006. World Bank Policy Research Working Paper No. 4280.

Lartey, E. K. and Mengova, E. (2016). Does institutional quality in Developing countries affect remittances? *Journal of Developing Areas*, 50(1):59–76.

Li, Q. and Racine, J. S. (2007). *Nonparametric Econometrics: Theory and Practice*. Princeton University Press, Princeton, NJ.

Lucas, R. E. B. and Stark, O. (1985). Motivations to remit: evidence from Bostwana. *Journal of Political Economy*, 93(5):901–918.

Newey, W., Powell, J., and Vella, F. (1999). Nonparametric techniques of triangular simultaneous equation models. *Econometrica*, 67:565–603.

Racine, J., Hart, J., and Li, Q. (2006). Testing the significance of categorical predictor variables in nonparametric regression models. *Econometric Reviews*, 25:523–544.

Racine, J. S. (2008). Nonparametric econometrics: a primer. *Foundation and Trends in Econometrics*, 3(1):1–88.

Racine, J. S. and Li, Q. (2004). Nonparametric estimation of regression functions with both both categorical and continuous data. *Journal of Econometrics*, 119:99–130.

Rapoport, H. and Docquier, F. (2006). The economics of migrants' remittances. In Kolm, S.-C. and Ythier, J. M., editors, *Handbook of the Economics of Giving, Altruism and Reciprocity*, volume 2, pages 1135 – 1198. Elsevier.

Singh, R. J., Haacker, M., Lee, K. W., and Goff, M. L. (2010). Determinants and macroeconomic impact of remittances in Sub-Saharan Africa. *Journal of African Economies*, 20(2):312–340.

Sperlich, S. (2009). A note on non-parametric estimation with predicted variables. *Econometrics Journal*, 12(2):382–395.

World Bank (2015). Migration and Remittances: Recent developments and outlook. Migration and Development Brief 25, World Bank.

Appendix

Table A1: List of countries

Africa	Swaziland	**Latin America**	Azerbijan
Algeria	Tanzania	Argentina	Belarus
Benin	Togo	Barbados	Bosnia-Herzegovina
Botswana	Tunisia	Belize	Bulgaria
Cameroon	Uganda	Bolivia	Croatia
Cape Verde		Brazil	Czech Rep.
Cote d'Ivoire	**Asia**	Colombia	Estonia
Djibouti	Bangladesh	Costa Rica	Georgia
Egypt	Cambodia	Dominica	Hungary
Ethiopia	China	Dominica Rep.	Kazakhstan
Ghana	Fiji	Ecuador	Kyrgyz Rep.
Guinea	India	El Salvador	Lithuania
Guinea Bissau	Indonesia	Grenada	Macedonia
Kenya	Iran	Guatemala	Moldova
Lesotho	Jordan	Guyana	Poland
Madagascar	Lao DPR	Haiti	Romania
Malawi	Lebanon	Honduras	Russia
Mali	Malaysia	Jamaica	Slovenia
Mauritius	Maldives	Mexico	Slovakia
Mozambique	Mongolia	Nicaragua	Tajikistan
Morocco	Nepal	Panama	Turkey
Namibia	Pakistan	Paraguay	Ukraine
Niger	Papua New Guinea	Peru	
Nigeria	Philippines	St. Lucia	
Rwanda	Samoa	St. Vincent	
Sao Tome & Principe	Solomon Island	Suriname	
Senegal	Sri Lanka	Venezuela	
Seychelles	Thailand		
Sierra Leone	Vanuatu	**Eastern Europe**	
South Africa	West Bank & Gaza	Albania	
Sudan	Yemen	Armenia	