THE LANCET Global Health

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Stevens GA, Finucane MM, De-Regil LM, et al. Global, regional, and national trends in haemoglobin concentration and prevalence of total and severe anaemia in children and pregnant and non-pregnant women for 1995–2011: a systematic analysis of population-representative data. *Lancet Glob Health* 2013; **1:** e16–25.

Webappendix 1. Data identification, access and inclusion

The distribution of blood haemoglobin concentration in a population is commonly summarized as a percentage below a threshold, or a prevalence of anaemia. Mean haemoglobin and its standard deviation may also be reported. Anaemia thresholds typically vary by age, sex, and pregnancy status. Studies may also use different haemoglobin thresholds to define anaemia, and may report multiple anaemia severities, such as mild, moderate and severe anaemia. We accessed data in two forms: 1) anonymised individual-level haemoglobin data when available to the authors, and 2) summary statistics, including mean haemoglobin and anaemia prevalences below specific thresholds. We used anaemia prevalences with any definition in our statistical model described in Webappendix 5, which accounts for the specific thresholds used to define anaemia when using the data.

We included data sources if:

- blood haemoglobin was measured;
- the study reported anaemia or mean haemoglobin for pre-school-aged children or women of reproductive age;
- a probabilistic sampling method with a defined sampling frame was used and data were representative of at least three areas within a country;
- the sample size of the survey or study was at least 100 individuals;
- data were collected in or after 1990; and
- data were from the 190 countries and territories listed in Webtable 1.

Measurement of haemoglobin for children younger than 6 months of age is rare in surveys because it requires a puncture to get blood drops. For this reason, our age group of interest for children was 6-59 months of age. We included data for all pre-school children because some sources did not report data separately for children aged 6-59 from those who were below 6 months or between 60 and 71 months of age. Data sources that did not cover the exact age groups of interest were given smaller weights, as described in Webappendix 5.

We excluded data sources if a facility-based sampling scheme was used. We also excluded women's data if only mothers of children < 5 years of age were included in the sample (e.g., Reproductive Health Surveys) because women who have not had a child in the past 5 years and may have systematically different haemoglobin levels. Finally, we excluded subnational datasources if the subnational area was selected on a variable causally related to anaemia prevalence, e.g., malaria endemicity. We manually identified and removed duplicated data accessed from more than one source. If both individual-level and summarized data were available, we used individual-level data. Our last update date was in the first quarter of 2013.

1.1 Individual-level data

We obtained anonymised individual-level data from health-examination surveys and household surveys with haemoglobin measurements. Most of these sources were multi-country surveys including the Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), Reproductive Health Surveys (RHS) and the Malaria Indicator Surveys (MIS). We also searched websites that archive survey data for health examination surveys that met our inclusion criteria; the websites included the Inter-University Consortium for Political and Social Research (ICPSR), the Institute for Health Metrics and Evaluation's Global Health Data Exchange (GHDx), and the RAND corporation. Finally, we used health examination survey data available to the authors through the Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating

Group[1,2,3,4]. From each source, we extracted the following variables: age, sex, haemoglobin concentration, pregnancy status, urban or rural residence, altitude, and survey sample weight, stratum, and primary sampling unit.

We only used data for children aged 6 to 59 months and women aged 15 to 49 years. Some haemoglobin concentrations recorded in survey datasets are biologically implausible. We excluded haemoglobin measurements that were less than 25 g/L or greater than 200 g/L. Finally, we adjusted all haemoglobin data for altitude, as described in Webappendix 3.

1.2 Data accessed as summary statistics

WHO maintains a database on anaemia prevalence. Data are identified via periodic MEDLINE searches and an international network of collaborators, who uncover data sources not reported in routine databases. The search is limited to humans, and the following search terms are used:

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(((national) AND (survey)) OR ((population) AND (prevalence))) AND
((iron status) OR (iron deficiency) OR (anemia) OR (anaemia) OR
(ferritin) OR (hemoglobin) OR (haemoglobin) OR (low iron level) OR
(transferrin receptor) OR (insufficient iron))
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Studies are included in the WHO database if there is a defined population-based sampling frame; a probabilistic sampling procedure is used; and sample size is at least 100 individuals.

We accessed and further screened these summary data using our exclusion criteria (Webappendix 1; Figure 1 in the main paper). Consistent with our inclusion and exclusion criteria, we excluded summarized data sources if:

- blood haemoglobin concentration was not measured, and another measure such as serum ferritin, haematocrit, or previously diagnosed anaemia was reported;
- data were collected prior to 1990 or in a country or territory not listed in Webtable 1;
- we had access to the same data as individual-level records;
- they were not representative of the general population (e.g., were refugees), or non-random sampling methods were used, or sampling methods were not adequately described;
- they used a facility-based surveillance method;
- they were representative of fewer than three areas within a country;
- we were unable to determine whether the data were adjusted for altitude and the data were collected in a high-altitude country;
- data for pre-school aged children were summarized together with data for children older than six years of age without reporting summary statistics in smaller age bands; or data for women of reproductive age were combined with data for children under 10 years of age without reporting summary statistics in smaller age bands; or
- the study did not have data on haemoglobin concentration or anaemia prevalence in children aged 6-59 months or women aged 15-49 years.

In some cases, the sample size was not reported in the WHO anaemia database. We checked all data sources for which sample size was not reported. If we could not find any information on the sample size, we conservatively assumed a sample size of 100.

We also provided a list of data sources in the WHO anaemia database to WHO country offices and to WHO's network of international collaborators, and requested that additional data to be provided. We extracted additional data from reports obtained through this data request, from preliminary DHS reports for surveys that were not yet available as individual-level records, and from reports archived on the Malaria Indicator Surveys.

Webappendix 2. Pregnancy status in data from household surveys

Blood haemoglobin concentration decreases, initially sharply, during the first trimester of pregnancy as part of a physiological process that occurs in both well-nourished and undernourished women (Webfigure 1).

Most household surveys ask women whether they are pregnant. Data on self-reported pregnancy and reported duration of the pregnancy show that many women do not report pregnancy during the first trimester. Specifically, we would expect more 6-week pregnancies than 8-month pregnancies, since not all pregnancies progress. However, comparison of reported pregnancies of different durations in 43 DHS surveys indicates that approximately 25% of women with a 6-week pregnancy report that they are pregnant, vs. 75% of women with a 10-week pregnancy. In addition to this reporting behaviour, the final 32 weeks of pregnancy coincide with the time during which blood haemoglobin has had its sharpest decline, in low-and-middle-income as well as high-income countries (Webfigure 1). Therefore, our operational definition of pregnancy status was one that began in the eighth week, which minimizes bias in self-reported status with relatively small effect on the role of pregnancy in haemoglobin level. This also meant that in calculating the proportion of women in a country who were pregnant at any time, as below, we used an average pregnancy duration of 32 weeks (gestational weeks 8-40).

We excluded all individual-record observations for women of reproductive age who reported that they did not know their pregnancy status (0.5% of all observations). Five surveys with individual-level data did not record pregnancy status as a part of their design. In these cases, we did not use individual-level data; rather, we calculated summary statistics for the whole sample and used the source in the same manner as data accessed directly as summary statistics, as described below.

When available, we used summary data separately by pregnancy status. Some summarized data were reported for pregnant and non-pregnant women together. Our statistical model used such data as a combination of pregnant and non-pregnant women, as described in Webappendix 5, with the proportion of pregnant women approximated by that of the national population. We calculated the proportion of women in the population of the given country and in a given year who were pregnant at the time of survey, using country- and age-specific data on live births (from the UN Population Division's 2010 Revision) and stillbirths[5], using our operational definition of pregnancy above.

Webappendix 3. Methods for adjusting haemoglobin for altitude

Haemoglobin needs are greater for those living at high altitudes due to the lower concentration of oxygen in the atmosphere[6]. When altitude measurements corresponding to individual-level observations were available us, we adjusted haemoglobin concentrations using a formula developed by the US Centers for Disease Control and Prevention[6,7] and commonly used in studies worldwide:

$$Hb_{adjusted} = Hb_{unadjusted} + 0.32 \cdot (altitude \cdot 0.0033) - 0.22 \cdot (altitude \cdot 0.0033)^2 \quad (1)$$

where haemoglobin is measured in g/L and altitude is measured in meters above sea level (m.a.s.l.). The adjustment is only applied to individuals living at altitudes over 1,000 m.a.s.l.

We were unable to obtain altitude information for individual subjects for some surveys with individual record data. When the proportion of population living at altitudes above 1500 m.a.s.l. (an altitude at which there is 3 g/L effect on haemoglobin concentration) was less than 5% of total population (hereafter termed low-altitude countries), we included the source. Data sources in this category were from the United States, United Kingdom, Thailand, El Salvador, and Honduras. Data from one individual-record data source without individual-level altitude in a country where more than than 5% of total population lived above 1500 m.a.s.l (2011 Angola Malaria Indicators Survey) were converted to summary statistics and adjusted as described below.

For data available as summary statistics, we determined whether the data were from a low- or high-altitude country. If data were from a low-altitude country, we used the data regardless of adjustment for altitude. We developed regression equations to correct unadjusted summary statistics from high-altitude countries. We pooled data from 31 DHS surveys in countries with some population living over 1000 m.a.s.l. We extracted both adjusted and unadjusted haemoglobin data for all survey participants (both women and children). We calculated mean haemoglobin and prevalence of anaemia (using each of the cutoffs 70, 100, 110, 120, and 130 g/L) using both adjusted and unadjusted data for each of the surveys. We then related altitude-adjusted mean haemoglobin concentration and prevalence of anaemia to the corresponding unadjusted values using separate regressions for each of the six metrics. In particular, for each metric we regressed the adjusted values against the unadjusted values, including as additional covariates the percent of population living over 1,000 m.a.s.l., the percent of population living over 2,000 m.a.s.l., and an interaction between the two. This regression specification was intended to mimic the quadratic relationship in the CDC adjustment (Eq. 1). In the regression for mean haemoglobin, we fixed the coefficient of unadjusted haemoglobin at one to reflect the relationship in (Eq. 1).

We used these regression relationships to predict adjusted mean haemoglobin concentration and adjusted prevalence of anaemia based on unadjusted summary statistics from high-altitude countries. We accounted for uncertainty of this step by calculating the standard regression prediction variance, which accounts for both uncertainty in estimating the regression relationship and variability of individual values around the regression line. This variability from the effect of predicting adjusted country-level metrics was then included in the statistical modeling as an added variance in the likelihood for each summary statistic from these sources.

Webappendix 4. Accounting for complex survey design

As described in the main paper and Webappendix 5, our statistical model used individual-level data when available and summary statistics when not to estimate the full distributions of blood haemoglobin concentration by country and year.

All of the individual-level data in our analysis came from surveys that used complex survey designs. Specifically, in designing a representative survey, the target populations were usually divided into strata based on geographical regions within the country, whether place of residence was rural or urban, and/or the socioeconomic characteristics of the place of residence; within each stratum, a number of clusters were randomly selected. Clusters may be villages, administrative units, or census units. Households or participants were then randomly sampled within each cluster. Because total population may differ among strata and clusters, individuals or households in smaller units have a higher probability of being selected than those in larger units. To account for the differences in probability of being sampled, each observation is assigned a sample weight. These weights are calculated to make the survey data representative of the total population.

An implication of the sampling method is that the so-called effective sample size of the survey (ESS) is different from its actual sample size. This occurs primarily because the sampled individuals are from a clusters that are representative but do not cover the entire country, and hence contain less information than they would, had they been a true random sample of the population.

To reflect the true availability of information in each survey and in the individual level data that it provided to the statistical model, we estimated ESS based on the `estat effects` command of the Stata version 10.1 `svy` suite of commands (StataCorp, 2009). In particular, this command generates the design effect (DEFF), which is the ratio between the (usually smaller) ESS and the real sample size, e.g. a survey with 1000 subjects with a DEFF of 2.0 has an ESS of 500. The DEFF may differ by summary statistic metrics (mean vs. prevalence below 100 g/L vs. prevalence below 120 g/L) depending on how these indicators, and the metrics are distributed across the strata and clusters. Following previous work[8], for each survey, we calculated the DEFF as the median of those from a range of metrics, specifically, mean haemoglobin concentration and prevalence below $90, 100, 110, 120, 130$ g/L. ESS was then calculated as sample size divided by DEFF.

In our statistical model, we accounted for the difference between the real and effective sample sizes and for the difference in weights for each observation by scaling the weights across all observations in a study to sum to the ESS. These scaled weights were then used to weight the likelihood contributions from each individual. In addition, surveys may over- or under-sample pregnant women relative to their fraction of the population. To account for this, in the statistical model for women, we scaled the weights for each individual such that the sum of the weights for pregnant women was equal to the total ESS for the study multiplied by the proportion of pregnant women in the study; we did the same for and non-pregnant women. This ensured that the sum of weights across all women was equal to the ESS for the study and that the relative weighting of pregnant and non-pregnant women reflected the number of women in each category in the study.

Data sources providing only summary statistics were also from surveys that used complex survey designs, but sample sizes recorded for these data sources are actual sample sizes and not the effective sample sizes. To ensure that the sample sizes used for these sources in the statistical modeling also reflect the complex survey design, we estimated ESS for each study as the actual sample size multiplied by an estimate of the DEFF. Calculating the DEFF requires individual-level data, which by definition is not available for these data sources. Following previous work[8], we used the median DEFF from all surveys with individual-level data. We then used the estimated ESS for each study in deriving the joint normal likelihood for the summary statistics from each study.

Webappendix 5. Bayesian hierarchical mixture model

5.1 Overview of the statistical model

We estimated the complete distributions of blood haemoglobin concentration in each country-year for pregnant women, non-pregnant women, and children, taking a population-based (vs. high-risk-only) approach to risk factors. This approach allows making coherent inference on mean haemoglobin and on the prevalence of anaemia at all levels of severity.

The methods used followed the estimation of the distributions of other nutritional indicators, reported elsewhere[8] with two modifications. First, we used the individual-level data in a weighted likelihood, with weights determined as described in Webappendix 4. This approach accounted for complex survey design while avoiding additional uncertainty introduced by resampling as done in previous work[8]. Second, for women, we fitted a model that stratifies based on pregnancy status. The differences in haemoglobin distributions between pregnant and non-pregnant women are specified by a country-level intercept that is allowed to change linearly over time, reflecting the fact that the difference can changed based on nutrition and antenatal care. We also included an additional study-specific error term for the difference in haemoglobin between pregnant and non-pregnant women, which accounted for the deviation of this difference in each study from the country pattern, for example due to specific design and measurement features of a specific survey. Using this specification, country- and year-specific data on haemoglobin concentrations stratified by pregnancy status inform estimation of the difference between pregnant and non-pregnant women. In years and countries where separate data by pregnancy status were lacking, the difference was informed based on other sources, especially those in the same country or in the same region, with data in similar time periods.

This gives us the following model for women, with g an indicator differentiating pregnant and non-pregnant strata within a study:

$$f_{gi}(z) = \sum_{m=1}^{M+1} w_{mgi}\, \mathcal{N}\left(z \mid \theta_m, \sigma_m^2\right) \tag{2}$$

$$w_{mgi} = \begin{cases} \Phi(\alpha_{mgi}) \prod_{u=1}^{m-1}(1-\Phi(\alpha_{ugi})) & \text{if } m \leq M \\ \prod_{u=1}^{M}(1-\Phi(\alpha_{mgi})) & \text{if } m = M+1 \end{cases} \tag{3}$$

$$\alpha_{mgi} = \delta^c_{mj[i]} + (\varphi\delta^c)_{mj[i]} t_i + u_{mj[i]t_i} + \beta_m x_i + a_{mi} + b_{mi} + I_{gi}(\gamma^c_{mj[i]} + (\varphi\gamma^c)_{mj[i]} t_i + c_{mi}) \tag{4}$$

Details on the model specifications and features are provided elsewhere[8]. Briefly, equation 2 describes a finite mixture of $M+1$ normal ($\mathcal{N}$) distributions (or mixture components), where the weights (w) on the constituent normal distributions vary across studies. We specified a probit stick-breaking model for the w's in equation 3. This transformation uses the standard normal cumulative distribution function (Φ) to transform α's that range between -∞ and ∞ to w's that range between 0 and 1. Specifically, the α's determine the relative weights assigned to each cluster in the following manner: starting with a 'stick' of length one, $\Phi(\alpha_{1gi})$ is the proportion of the stick that we break off and assign to w_{1gi}; $\Phi(\alpha_{2gi})$ is the proportion of the remaining stick of length $(1-w_{1gi})$ that we break off and allocate to w_{2i}; and so on. Larger values of α_{mgi} thus correspond to higher weights on the m^{th} mixture component for stratum g in study i. The probit stick-breaking transformation therefore allows placing a flexible model on the α's, while ensuring that the w's still add to one, in such a way that large mass in one part of the haemoglobin distribution is balanced by smaller mass in others parts, and vice versa, through exchanges among the constituent mixture components.

In equation 4, α_{mgi} is defined to leverage all available information in making estimates for each country-year-stratum. $\delta^c_{mj[i]}$ is a country-by-component interaction term, determining the baseline weight placed on each of the $M+1$ normal distributions in country j. $(\varphi\delta^c)_{mj[i]}$ is a country- and component-specific linear

time effect, determining the linear parts of country j's time trend. Letting $T = 22$ be the total number of analysis years $(1990, 1991, \cdots, 2011)$, the T-vector $u_{mj[i]}$ captures smooth nonlinear change over time in country j and mixture component m. β_m is the effect of time-varying country-level covariates x (described in the main paper) in mixture component m. The a's are study-specific random effects, and the b's capture the extra variance of studies that included women under age 15 or over age 50 (or those that did not cover exactly 6-59 months of age in the model for children). The difference between the models for women and children is that for the former, the model includes the additional terms that are multiplied by I_{gi}, which is an indicator variable that takes the value one when stratum g contains pregnant women and -1 when stratum g contains non-pregnant women. This indicator multiples a country- and component-specific term, $\gamma^c_{mj[i]}$, that quantifies the overall difference between pregnant and non-pregnant women, a linear time effect for the pregnant/non-pregnant difference, $(\varphi\gamma^c)_{mj[i]}$, and study-specific errors, c_{mi}, in the difference. The difference in haemoglobin between pregnant and non-pregnant women was modelled as linear for simplicity and because there are insufficient data to reliably estimate more complex trends in difference.

The hierarchical prior distributions for the country-specific terms and specifications of the study-specific error terms are described in detail in Stevens et al.[8], with the additional terms introduced here, $\gamma^c_{mj[i]}$, $(\varphi\gamma^c)_{mj[i]}$, and c_{mi}, treated analogously to δ^c_{mj}, $(\varphi\delta^c)_{mj}$, and a_{mi}, respectively.

For data accessed as summary statistics for which pregnant and non-pregnant women are not distinguished, we took the mixture densities for pregnant and for non-pregnant women and combined them into a $(2M + 2)$-component mixture, weighting by the proportion of pregnant women estimated for that country-year, as described earlier.

5.2 Computation and inference

We fitted the models via Markov chain Monte Carlo (MCMC), programming the sampler using the statistical computing language R. For parameters without standard conditional distributions, we implemented an adaptive Metropolis within Gibbs algorithm due to Shaby and Wells[9] that tunes proposal covariances automatically to mimic scaled posterior covariances and that scales adapted proposal covariance matrices to obtain theoretically-optimal acceptance rates. To make estimates at the region and global levels for a given year, we calculated population-weighted averages of each region's constituent country-level values. For each model, we ran 10 chains in parallel for 100,000 iterations each, starting from dispersed starting values, discarding the first 40,000 iterations from each chain for burn-in and retaining one in every 240 of the remaining iterations (to reduce storage needs) from each chain for a total of 2,500 iterations with which to generate results. We assessed convergence to the target distribution and mixing of the samplers using standard MCMC diagnostics applied to the primary inferential quantities of interest (the country-year draws of mean haemoglobin and anaemia and severe anaemia prevalences), including estimation of the effective sample size (ESS), a measure of the number of effectively-independent draws from the posterior. 98% of ESS values were above 500. Of those below 500, 67 of the 39,330 values were between 124 and 200, all for pregnant women and mostly for severe anaemia prevalence. The 95% uncertainty intervals for each quantity of interest were calculated as the 2.5th-97.5th percentiles of the 2,500 draws of the quantity.

References

1. M.M. Finucane, G.A. Stevens, M.J. Cowan, G. Danaei, J.K. Lin, C.J. Paciorek, G.M. Singh, H.R. Gutierrez, Y. Lu, A.N. Bahalim, et al. National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9· 1 million participants. *The Lancet*, 377(9765):557–567, 2011.

2. G. Danaei, M.M. Finucane, Y. Lu, G.M. Singh, M.J. Cowan, C.J. Paciorek, J.K. Lin, F. Farzadfar, Y.H. Khang, G.A. Stevens, et al. National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with 370 country-years and 2· 7 million participants. *The Lancet*, 378(9785):31–40, 2011.

3. G. Danaei, M.M. Finucane, J.K. Lin, G.M. Singh, C.J. Paciorek, M.J. Cowan, F. Farzadfar, G.A. Stevens, S.S. Lim, L.M. Riley, et al. National, regional, and global trends in systolic blood pressure since 1980: systematic analysis of health examination surveys and epidemiological studies with 786 country-years and 5· 4 million participants. *The Lancet*, 377(9765):568–577, 2011.

4. F. Farzadfar, M.M. Finucane, G. Danaei, P.M. Pelizzari, M.J. Cowan, C.J. Paciorek, G.M. Singh, J.K. Lin, G.A. Stevens, L.M. Riley, et al. National, regional, and global trends in serum total cholesterol since 1980: systematic analysis of health examination surveys and epidemiological studies with 321 country-years and 3· 0 million participants. *The Lancet*, 377(9765):578–586, 2011.

5. S. Cousens, H. Blencowe, C. Stanton, D. Chou, S. Ahmed, L. Steinhardt, A.A. Creanga, Ö. Tunçalp, Z.P. Balsara, S. Gupta, et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. *The Lancet*, 377(9774):1319–1330, 2011.

6. W. Dowdle. CDC criteria for anemia in children and childbearing-aged women. *Morbidity and Mortality Weekly Report*, 38(22):400–404, 1989.

7. World Health Organization. *Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity*. World Health Organization, 2011. URL `http://www.who.int/vmnis/indicators/haemoglobin.pdf`.

8. G.A. Stevens, M.M. Finucane, C.J. Paciorek, S.R. Flaxman, R.A. White, A.J. Donner, and M. Ezzati. Trends in mild, moderate, and severe stunting and underweight, and progress towards MDG 1 in 141 developing countries: a systematic analysis of population representative data. *The Lancet*, 378:31–40, 2012.

9. B. Shaby and M.T Wells. Exploring an adaptive metropolis algorithm. Technical Report 11-14, Duke University, Department of Statistical Science, 2011.

Webtable 1. Countries and territories in analysis regions.

Region	Countries
High-income region	Andorra, Australia, Austria, Belgium, Brunei Darussalam, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Republic of Korea, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States of America
Central and Eastern Europe	Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia (Former Yugoslav Republic of), Moldova, Montenegro, Poland, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Ukraine
East and Southeast Asia	Cambodia, China, China (Hong Kong SAR), China (Macao SAR), Democratic People's Republic of Korea, Indonesia, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Philippines, Sri Lanka, Taiwan, Thailand, Timor-Leste, Viet Nam
Oceania	Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu
South Asia	Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan
Central Asia, Middle East, and North Africa	Algeria, Armenia, Azerbaijan, Bahrain, Egypt, Georgia, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Libya, Mongolia, Morocco, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen
Central and West Africa	Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Central African Republic, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, São Tomé and Príncipe, Togo
East Africa	Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Somalia, Sudan, Uganda, United Republic of Tanzania, Zambia
Southern Africa	Botswana, Lesotho, Namibia, South Africa, Swaziland, Zimbabwe
Andean and Central Latin America and Caribbean	Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Bolivia, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Venezuela (Bolivarian Republic of)
Southern and Tropical Latin America	Argentina, Brazil, Chile, Paraguay, Uruguay

Webtable 2. Characteristics of data sources.

Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
Afghanistan	2004	National	2012	2	6-59	15-50	Ministry of Public Health of the Islamic Republic of Afghanistan, UNICEF, Centers for Disease Control and Prevention, National Institute for Research on Food and Nutrition. Summary Report of the National Nutrition Survey, Afghanistan, 2004. Afghanistan, Ministry of Public Health of the Islamic Republic of Afghanistan, 2005
Albania	2008-2009	National	9010	1	6-59	15-49	DHS
Angola	2006-2007	National	5262	1	6-59	15-49	MIS
Angola	2011	National	3485	3, 4	6-59		Cosep Consultoria, Consaúde e ICF Macro. Inquérito de Indicadores de Malária em Angola de 2011. Calverton MD, Cosep Consultoria, Consaúde e ICF Macro, 2011
Argentina	2007	National	40781	3	6-72	10-49	Ministerio de Salud. Encuesta Nacional de Nutrición y Salud: Documento de Resultados. Buenos Aires, Ministerio de Salud, 2007
Armenia	2000	National	7471	2	6-59	15-50	National Statistical Service [Armenia], Ministry of Health [Armenia], ORC Macro Inc. Armenia Demographic and Health Survey 2000. Calverton, MD, National Statistical Service, 2001
Armenia	2005	National	7224	1	6-59	15-49	DHS
Azerbaijan	2006	National	10049	1	6-59	15-49	DHS
Bahrain	2002	National	384	3		14-50	Al-Dallal ZS, Hussain KM. Impact of the national flour fortification program on the prevalence of iron deficiency and anemia among women at reproductive age in the Kingdom of Bahrain. Kingdom of Bahrain, Ministry of Health, Public Health Directorate, Nutrition Section, 2003
Bangladesh	2011	National	8285	1	6-59	15-49	DHS
Benin	2001	National	5475	1	6-59	15-49	DHS
Benin	2006	National	9516	1	6-59	15-49	DHS
Benin	2011-2012	National	8724	2	6-59	15-49	Enquête Démographique et de Santé et à Indicateurs Multiples du Benin EDS-MICS-IV 2011-2012, Rapport Préliminaire
Bhutan	2002	National	3600	2	6-61	16-46	Royal Government of Bhutan- Ministry of Health and Education. Anemia among men, women and children in Bhutan: How big is the problem?. Bhutan, Ministry of Health and Education, 2003
Bolivia	1998	National	5379	1	6-59	15-49	DHS
Bolivia	2003	National	9073	1	6-59	15-49	DHS
Bolivia	2008	National	8443	1	6-59	15-49	DHS
Botswana	1994	National	464	3	6-59	15-50	Ministry of Health [Botswana], UNICEF. Micronutrient malnutrition in Botswana. A national survey to assess the status of iodine, iron, and vitamin A. Gaborone, Ministry of Health, 1996
Brazil	2006	National	3455	2	6-59		MINISTÉRIO DA SAÚDE CENTRO BRASILEIRO DE ANÁLISE E PLANEJAMENTO
Brunei Darussalam	1996-1997	National	668	2		15-50	Ministry of Health. National Nutritional Status Survey - 1997. Negara, Ministry of Health, 1997
Burkina Faso	2003	National	7019	1	6-59	15-49	DHS
Burkina Faso	2010	National	14782	1	6-59	15-49	DHS
Burundi	2003	National	2276	2, 4	0-59	15+	Kimboka S. Burundi National Anaemia Survey. Bujumbura, Burundi, Minstere de la Sante Publique, 2004
Burundi	2010	National	7857	1	6-59	15-49	DHS
Cambodia	2000	National	5211	1	6-59	15-49	DHS
Cambodia	2005	National	11903	1	6-59	15-49	DHS
Cambodia	2010	National	13231	1	6-59	15-49	DHS
Cameroon	2004	National	8933	1	6-59	15-49	DHS
Cameroon	2011	National	13503	1	6-59	15-49	DHS
Central African Republic	1999	National	3781	3	6-36	15-50	Ministere Delegue a l'Economie au Plan et a la Cooperation Internationale, Ministere de la Sante et de la Population, UNICEF. Enquête nationale sur l'avitaminose A, la carence en fer et la consommation du sel iode [rapport final]. Republique Centrafricaine, 2000
Chile	2003	National	910	1		16-49	Encuesta Nacional de Salud
China	1992	National	16898	3, 4	0-59	15-44	China National Health Survey

Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
China	2002	National	62429	3	0-59	15-44	China National Health Survey
Colombia	2005	National	9720	1	12-48	15-49	Encuesta Nacional de Salud
Colombia	2009-2010	National	20927	3	6-59	13-49	Encuesta Nacional de la Situacion Nutricional en Colombia 2010
Congo	2005	National	5347	1	6-59	15-49	DHS
Congo	2011-2012	National	9458	2	6-59	15-49	Enquête Démographique et de Santé du Congo EDSC-II 2011-2012, Rapport Préliminaire
Costa Rica	1996	National	820	3		15-45	Rodriguez S, Blanco A, Cunningham L, Ascencio M, Chavez M, Munoz L. Prevalencia de las anemias nutricionales de mujeres en edad fértil, Costa Rica: encuesta nacional de nutrición, 1996 [Prevalence of nutritional anemia in women of reproductive age, Costa Rica: national nutrition survey, 1996]. Archivos Latinoamericanos de Nutrición, 2001, 51 -1 :19-24.
Costa Rica	1996	National	590	3	12-59		Cunningham L, Blanco A, Rodriguez S, Ascencio M. Prevalencia de anemia, deficiencia de hierro y folatos en niños menores de siete años: Costa Rica, 1996 [Prevalence of anemia, iron and folate deficiency in children smaller than seven years : Costa Rica, 1996]. Archivos Latinoamericanos de Nutrición, 2001, 51 -1 :37-43.
Côte d'Ivoire	2009	National	1071	2	6-59	15-49	Enquête nationale sur l'anémie et les carences en vitamine A et fer en Côte d'Ivoire. "Projet Ivoirien de Promotion des Aliments Fortifiés » PIPAF. Rapport final
Côte d'Ivoire	2011-2012	National	8034	2	6-59	15-49	Enquête Démographique et de Santé et à Indicateurs Multiples EDSCI-III, Côte d'Ivoire 2011-2012, Rapport Préliminaire
Democratic People's Republic of Korea	1998	National	72	3		15-50	UNICEF, DPRK. The Multiple Indicator Cluster Survey in the Democratic People's Republic of Korea, 1998. Pyongyang, United Nations Children's Fund, 1998
Democratic People's Republic of Korea	2004	National	1185	2		20-35	Central Bureau of Statistics, Institute of Child Nutrition. DPRK 2004 Nutrition assessment report of survey results. Democratic People's Republic of Korea, Central Bureau of Statistics, Institute of Child Nutrition, 2005
Democratic Republic of the Congo	2007	National	8275	1	6-59	15-49	DHS
Egypt	1997	National	276	2		16-20	El-Sahn F, Sallam S, Mandil A, Galal O. Anaemia among Egyptian adolescents: prevalence and determinants. Eastern Mediterranean Health Journal, 2000, 6 (5/6) :1017-1025.
Egypt	2000	National	12440	1	6-59	15-49	DHS
Egypt	2005	National	10284	1	6-59	15-49	DHS
El Salvador	1998	National	5069	1	7-59		RHS
El Salvador	2002-2003	National	4261	1	6-59		RHS
El Salvador	2008	National	3837	1	6-59		RHS
Equatorial Guinea	2004	National	523	2	0-59		Nutritional status and its correlates in Equatorial Guinean preschool children: Results form a nationally representative survey.
Equatorial Guinea	2011	National	NR	2	6-59	15-49	Guinée Équatoriale Enquête Démographique et de Santé 2011, Rapport de synthese
Ethiopia	1990-1994	Subnational	1449	2, 4		15-50	Haidar J, Nekatibeb H, Urga K. Iron deficiency anaemia in pregnant and lactating mothers in rural Ethiopia. East African Medical Journal, 1999, 76 -11 :618-622.
Ethiopia	2005	National	9606	1	6-59	15-49	DHS
Ethiopia	2011	National	25244	1	6-59	15-49	DHS
Fiji	1993	National	1605	3	6-59	15-50	Saito S. 1993 national nutrition survey [main report]. Suva, National Food and Nutrition Committee, 1995
Fiji	2004	National	749	3		15-44	2004 National Nutrition Survey

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Fiji	2010	National	869	3		15-44	Impact of iron fortified flour in child bearing age women in Fiji 2010 report
Gabon	2012	National	8837	2	6-59	15-49	Enquête Démographique et de Santé, Gabon 2012, Rapport Préliminaire
Gambia	1999	National	2084	2	12-72	15-50	Bah A, Semega-Janneh I, Prentice A, Bates C. Nationwide survey on the prevalence of vitamin A and iron deficiency in women and children in the Gambia. Banjul, National Nutrition Agency, 2001
Georgia	2005	National	2651	1		15-49	MICS
Ghana	2003	National	8628	1	6-59	15-49	DHS
Ghana	2008	National	7292	1	6-59	15-49	DHS
Guatemala	1995	National	3211	2	12-59	15-45	Ministerio de Salud Publica y Asistencia Social. Encuesta Nacional de Micronutrientes. Guatemala City, Ministerio de Salud Publica y Asistencia Social, 1996
Guatemala	2002	National	5545	1	6-59		RHS
Guatemala	2008-2009	National	8952	1	6-59		RHS
Guinea	2000	National	3624	3	6-59	15-50	Ministère de la Santé Publique [Guinee]. Enquête nationale sur l'anémie ferriprive en Guinée. Rapport Final: résumé. 2001
Guinea	2005	National	6421	1	6-59	15-49	DHS
Guinea	2012	National	7972	2	6-59	15-49	Enquête Démographique et de Santé et à Indicateurs Multiples EDS-MICS-IV, GUINÉE 2012, Rapport Préliminaire
Guyana	1996-1997	National	403	3	0-59	15-31	Ministry of Health [Guyana], WHO Pan American Health Organization, Caribbean Food and Nutrition Institute. Executive summary micronutrient study report - Guyana. An assessment of the vitamin A, E, beta-carotene, iron and iodine status in the population. Georgetown, Ministry of Health, 1997
Guyana	2009	National	6233	1	6-59	15-49	DHS
Haiti	2000	National	7656	1	6-59	15-49	DHS
Haiti	2005-2006	National	7883	1	6-59	15-49	DHS
Haiti	2012	National	13385	2	6-59	15-49	Enquête Mortalité, Morbidité et Utilisation des Services EMMUS-V, Haiti 2012, Rapport Préliminaire
Honduras	2001	National	4609	1	11-59		RHS
Honduras	2005	National	28192	1	6-59	15-49	DHS
India	1998-1999	National	99910	1	6-35	15-49	DHS
India	2001-2003	Subnational	9480	3	12-59	15-50	National Institute of Nutrition, Indian Council of Medical Research. Prevalence of Micronutrient Deficiencies. National Nutrition Monitoring Bureau (NNMB) Technical Report No. 22. Hyderabad, India, National Institute of Nutrition, 2003
India	2005-2006	National	152434	1	6-59	15-49	DHS
Indonesia	1997	Subnational	9713	1	6-59	15-49	IFLS 2
Indonesia	2000	Subnational	12919	1	8-59	15-49	IFLS 3
Indonesia	2008	Subnational	14472	1	6-59	15-49	IFLS 4
Iran (Islamic Republic of)	1994-1995	National	1430	2		15-50	Ministry of Health and Medical Education, UNICEF. Multi-centre study on iron deficiency anemia among 15 to 49 year old women in the Islamic Republic of Iran. Nutrition Department, Ministry of Health and Medical Education, 1995
Iran (Islamic Republic of)	2001	National	8765	1	13-59	15-49	Iran Micronutrient Survey 2001
Japan	1992	National	NR	3		30-50	The National Nutrition Survey (1992, 1993, 1994, 1995) Japan., National Institute of Health and Nutrition.
Japan	1993	National	NR	3		30-50	The National Nutrition Survey (1992, 1993, 1994, 1995) Japan., National Institute of Health and Nutrition.
Japan	1994	National	NR	3		20-50	The National Nutrition Survey (1992, 1993, 1994, 1995) Japan., National Institute of Health and Nutrition.
Japan	1995	National	NR	3		20-50	The National Nutrition Survey (1992, 1993, 1994, 1995) Japan., National Institute of Health and Nutrition.
Japan	2001	National	1398	3		20-50	National Nutrition Survey of Japan in 2001 and 2002., National Institute of Health and Nutrition.

Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
Japan	2002	National	1164	3		20-50	National Nutrition Survey of Japan in 2001 and 2002., National Institute of Health and Nutrition.
Japan	2007	National	1028	3		20-54	National Health and Nutrition Survey
Jordan	2002	National	2481	3	12-59	15-50	Ministry of Health [Jordan], WHO, UNICEF, Centers for Disease Control and Prevention. National baseline survey on iron deficiency anemia and vitamin A deficiency. Amman, Ministry of Health, 2002
Jordan	2002	National	4424	1	6-59	15-49	DHS
Jordan	2007	National	13512	1	6-59	15-49	DHS
Jordan	2009	National	11320	1	6-59	15-49	DHS
Jordan	2010	National	2932	2	12-59	15-49	Jordan Ministry of Health. National Micronutrient Survey Jordan 2010. Amman, Jordan Ministry of Health, 2011
Kazakhstan	1995	National	4398	2, 4	6-36	15-50	National Institute of Nutrition [Kazakstan], Academy of Preventive Medicine [Kazakstan], Macro International Inc. Kazakhstan Demographic and Health Survey, 1995. Calverton, MD, National Institute of Nutrition/Macro International Inc, 1996
Kazakhstan	1999	National	2738	1	6-59	15-49	DHS
Kenya	1999	National	6253	3	2-72	15-51	Mwaniki DL, Omwega AM, Muniu EM, Mutunga JN, Akelola R, Shako BR, Gotink MH, Pertet AM. Anaemia and status of iron, vitamin A and zinc in Kenya. The 1999 National Survey. Nairobi, Ministry of Health, 2002
Kenya	2010	National	3940	3	3-59		Kenya Malaria Indicator Survey 2010. Preliminary Report
Kuwait	1995	National	980	2		14-46	Al-Awadi F, Amine EK, Goulam Z. Assessment of the nutritional status of vulnerable groups in Kuwait, part 4: anaemia among adult females in Kuwait. Kuwait, Ministry of Health, Food and Nutrition Administration, 1995
Kyrgyzstan	1997	National	4582	1	6-35	15-49	DHS
Lao People's Democratic Republic	2000	National	NR	2	0-72		Ministry of Health [Lao People's Democratic Republic]. Report on national health survey: health status of the People of LAO PDR. Vientiane, Ministry of Health, 2001
Lao People's Democratic Republic	2005	National	803	1		15-49	MICS
Lebanon	1997-1998	National	828	3	12-72	15-50	Hwalla N, Adra N. Prevalence and selected determinant of iron deficiency anemia in women and under five children in Lebanon. 1998
Lesotho	2004	National	4430	1	6-59	15-49	DHS
Lesotho	2009	National	6021	1	6-59	15-49	DHS
Liberia	1999	National	2283	3	6-36	14-50	Mulder-Sibanda M, Dahn B, Duworko M, Flomo-Hall M, Benson A, Ortiz J. National Micronutrient Survey. A national prevalence study on vitamin A deficiency, iron deficiency anemia, iodine deficiency. Monrovia, Ministry of Health and Social Welfare, Family Health Division, United Nations Children's Fund, 1999
Liberia	2009	National	4057	1	6-59		MIS
Liberia	2011	National	3207	1	6-59		MIS
Macedonia (Former Yugoslav Republic of)	1999	National	2097	3	6-59	15-46	Branca F, Pastore G, Rossi L, Sette S, Stojanovska Ancevska B, Janeva N, Kolevska L, Peova S, Muratovska O, Venovska K. Multiple indicator cluster survey in FYR Macedonia with micronutrient component. Rome, National Institute of Nutrition, 2000
Macedonia (Former Yugoslav Republic of)	2011	National	5195	2	6-59	15-49	Institute for Public Health. Macedonia National Nutrition Survey 2011. Skopje, Institute for Public Health, 2011
Madagascar	1997	National	5389	1	6-35	15-49	DHS
Madagascar	2003-2004	National	4202	1	6-59	15-49	DHS
Madagascar	2008-2009	National	13842	1	6-59	15-49	DHS
Madagascar	2011	National	6226	1	6-59		MIS

Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
Malawi	2004	National	5033	1	6-59	15-49	DHS
Malawi	2010	National	2161	3	0-59		Malawi MIS 2010
Malawi	2010	National	11856	1	6-59	15-49	DHS
Maldives	1994	National	3666	3	6-59	15+	Ministry of Health and Welfare, Department of Public Health. Nutritional status and child feeding practices of Maldivian children - Report of the National Nutrition Survey. 1994
Maldives	2001	National	1361	2		15-50	Minister of Health, Republic of Maldives. Multiple Indicator Cluster Survey (MICS 2), Maldives. Malé, Ministry of Health, 2001
Maldives	2007	National	2504	3	6-59	15-49	Ministry of Health & Family and UNICEF Maldives. Project Report: National Micronutrient Survey 2007. Male', Ministry of Health & Family,
Mali	2001	National	6474	1	6-59	15-49	DHS
Mali	2006	National	8296	1	6-59	15-49	DHS
Mali	2010	National	1760	1	6-59		DHS
Marshall Islands	1994-1995	Subnational	904	2	12-72		Palafox NA, Gamble MV, Dancheck B, Ricks MO, Briand K, Semba RD. Vitamin A deficiency, iron deficiency, and anemia among preschool children in the Republic of the Marshall Islands. Nutrition, 2003, 19 -5 :405-408.
Mauritius	1995	National	628	3		15-51	Ministry of Health [Mauritius]. A survey of nutrition in Mauritius and Rodrigues (1995) [final report]. Port Louis, Ministry of Health, 1995
Mexico	1999	National	20623	1	6-59	15-49	Mexico ENN 1999
Mexico	2002	National	10022	1	12-48	15-49	Mexican Family Life Survey
Mexico	2005-2006	National	24191	1	12-59	15-49	ENSANUT
Mexico	2012	National	26323	2	12-59	12-49	Ensanut 2012
Micronesia (Federated States of)	1993	Subnational	355	3	24-48		Auerbach SB. Maternal-Child Health Survey: Pohnpei, Federated States of Micronesia, 1993 [summary table]. Palikir, Pohnpei, US Public Health Service/Department of Health Services [Federated States of Micronesia], 1993
Micronesia (Federated States of)	2000	Subnational	849	3	24-59	15-50	Socorro P, Gonzaga C. Results of vitamin A, anemia and blood lead survey among 2-4 year old children and reproductive-aged women in Yap proper and Kosrae State, Federated States of Micronesia. Atlanta, Centers for Disease Control and Prevention, 2000
Moldova	2005	National	8467	1	6-59	15-49	DHS
Mongolia	2004	National	1462	3	6-59	15-50	Enkhbat S. Third National Nutrition Survey 2004 [personal communication]. Mongolia, Ministry of Health, 2004
Morocco	2000	National	3732	3, 4	6-59	15-50	Ministère de la Santé [Maroc]. Enquête nationale sur la carence en fer l'utilisation du sel iodé et la supplémentation par la vitamine A, 2000. 2000
Mozambique	1998	Subnational	3611	2	12-72	15-50	Fildalgo L, Ismael C, Khan S, Ministerio de Saude. Avaliação da deficiencia em micronutrientes a nivel das provincias de C. Delgado, Manica, Gaza e Maputo [Evaluation of micronutrient deficiency in the provinces of C. Delgado, Manica, Gaza and Maputo]. Maputo, Ministerio de Saude, 1999
Mozambique	2001-2002	National	1414	2	6-59	15+	Ministério da Saúde, Direcção Nacional de Saúde. Inquérito nacional seovre a deficiência de vitamina A, prevalência de anemia e malária em crianças dos 6-59 meses e respectivas mães. Maputo, Instituto Nacional de Saúde, 2003
Mozambique	2007	National	4285	3	0-59	15-49	Mozambique MIS 2007
Mozambique	2011	National	18459	2	6-59	15-49	Mozambique Demographic and Health Survey 2011. Preliminary Report.
Myanmar	2001	National	1200	2		15-45	National Nutrition Center, Ministry of Health. A study on hemoglobin status and food practices of Myanmar women. Myanmar, National Nutrition Center, Department of Health, 2001
Nepal	1997-1998	National	7518	2	6-59	15-50	Ministry of Health [Nepal], Child Health Division, New ERA, The Micronutrient Initiative, UNICEF [Nepal], WHO. Nepal Micronutrient Status Survey 1998. Kathmandu, Ministry of Health, 1999
Nepal	2006	National	15961	1	6-59	15-49	DHS
Nepal	2011	National	8490	1	6-59	15-49	DHS

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New Zealand	1996-1997	National	1088	3		15-45	Russell D, Parnell W, Wilson N, Faed J, Ferguson E, Herbison P, Horwath C, Nye T, Reid P, Walker R, Wilson B, Tukuitonga C. NZ Food: NZ People: key results of the 1997 National Nutrition Survey. New Zealand, Ministry of Health, 1999
Nicaragua	1993	National	3506	3	12-59	15+	Ministerio de Salud, Direccion General de Promocion de la Salud, Direccion de Nutricion. Encuesta nacional sobre deficiencia de micronutrientes en Nicaragua 1993: resumen ejecutivo [National survey of micronutrient deficiencies in Nicaragua 1993: executive summary]. Managua, Ministerio de Salud, 1994
Nicaragua	2000	National	4453	3	6-59	15-50	Ministerio de Salud. Encuesta nacional de micronutrientes (ENM 2000) [National survey of micronutrients (ENM 2000)]. Managua, Ministerio de Salud, 2002
Nicaragua	2003-2005	National	2712	3	6-59	15-49	Sistema integrado de vigilancia de intervenciones nutricionales (SIVIN)
Niger	2006	National	7590	1	6-59	15-49	DHS
Niger	2012	National	10025	2	6-59	15-49	Enquête Démographique et de Santé et à Indicateurs Multiples du NIger EDSN-MICS-IV 2012, Rapport Préliminaire
Nigeria	1992-1993	National	1316	2		15-46	Federal Government of Nigeria, UNICEF. The nutritional status of women and children in Nigeria. Lagos, 1994
Nigeria	1993	National	5013	3	6-72	15-46	Federal Ministry of Health and Social Services, United States Agency for International Development, Vitamin A Field Support Project, Opportunities for Micronutrient Interventions. Nigeria National Micronutrient Survey, 1993. Nigeria, Federal Ministry of Health and Social Services, 1996
Nigeria	2010	National	4930	1	6-59		MIS
Occupied Palestinian Territory	2003	National	1106	2	12-59		Salman R. Prevalence of vitamin A deficiency among children, aged 12-59 months, in the West Bank and Gaza Strip. 2004
Oman	1992	National	1691	2	6-72	16+	Musaiger AO. Health and nutritional status of Omani families. 1992
Oman	1995	National	5015	3	0-59		Al-Riyami A, Ebrahim GJ. Genetic Blood Disorders Survey in the Sultanate of Oman. Journal of Tropical Pediatrics, 2003, 49 :i1-20.
Oman	2000	National	1025	2		15-20	Al-Riyami A, Afifi M, Al-Kharusi H, Morsi M. National Health Survey, 2000. Volume II-Reproductive Health Study. Ministry of Health the Sultanate of Oman, 2000
Oman	2004	National	623	3	6-59	15-50	Ministry of Health of the Sultanate of Oman, UNICEF Muscat, WHO Eastern Mediterranean Regional Office. National micronutrient status and fortified food coverage survey, Oman, 2004. Muscat, Oman, Department of Nutrition, Ministry of Health of the Sultanate of Oman, 2006
Pakistan	2001	National	8216	2, 4	6-59	15+	Pakistan Institute of Development Economics, Micronutrient Laboratories Aga Khan University, Medical Centre. National Nutrition Survey 2001-2002. Islamabad, Government of Pakistan, Planning Commission, 2003
Pakistan	2011	National	19405	1	6-59	16-49	Pakistan Nutritional Survey 2011
Panama	1992	National	999	2	12-59		Ministerio de Salud, Departamento de Nutricion y Dietetica. Encuesta nacional de vitamina A 1992 [National survey on vitamin A 1992]. Panamá City, Ministerio de Salud, 1992
Panama	1999	National	2676	3	12-59	15+	Ministerio de Salud, UNICEF. Encuesta nacional de vitamina A y anemia por deficiencia de hierro [National survey of vitamin A and iron deficiency anemia]. Panama City, Ministerio de Salud, 2000
Peru	1996	National	3377	1	6-59	15-49	DHS
Peru	2000	National	8545	1	6-59	15-49	DHS
Peru	2003	National	5698	3	12-36	15+	Informe nacional de niveles de hemoglobina y prevalencia de anemia en niños de 12 a 36 meses y mujeres en edad fertil 2003., Instituto Nacional de Salud, Centro Nacional de Alimentación y Nutritción, Dirección Ejecutiva de Vigilancia Alimentar
Peru	2004	National	30808	2	0-59	15-50	Ministerio de Salud Publica, Instituto Nacional de Salud. Monitoreo nacional de indicadores nutricionales 2004. Lima, Peru, Ministerio de Salud Publica, Instituto Nacional de Salud., 2004

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Peru	2004-2005	National	1505	3		20-50	Cárdenas de Jurado HG, Gutiérrez PAM, Arbieto LR, Tasayco FM. Encuesta Nacional de indicadores nutricionales, bioquimicos, socioeconómicos y culturales rilacionados con las enfermedades crónico degenerativas. Lima, Peru, Ministerio de Salud, 2006
Peru	2004-2005	National	7502	1	6-59	15-49	DHS
Peru	2006-2008	National	26950	1	6-59	15-49	DHS
Peru	2009	National	29588	2	6-59	15-49	Instituto Nacional de Estadística e Informática. Encuesta Demografica y de Salud Familiar-ENDES Continua 2009: Informe principal. Lima, Instituto Nacional de Estadística e Informática, 2010
Peru	2010	National	29484	2	6-59	15-49	Instituto Nacional de Estadística e Informática. Encuesta Demografica y de Salud Familiar-ENDES Continua 2010: Informe principal. Lima, Instituto Nacional de Estadística e Informática, 2011
Peru	2011	National	29523	2	6-59	15-49	Encuesta Demografica y de Salud Familiar-ENDES Continua 2011. Informe principal
Philippines	1993	National	3916	3	6-12	15-60	Fourth National Nutrition Survey, Food and Nutrition Research Institute, Department of Science and Technology
Philippines	1998	National	22737	2	6-72	15-50	Food and Nutrition Research Institute, Department of Science and Technology, UNICEF. Philippine nutrition facts & figures. Manila, Food and Nutrition Research Institute, 2001
Philippines	2003	National	4736	3	6-59	15-50	Food and Nutrition Research Institute, Philippines. The Sixth National Survey 2003 [personal communication]. Manila, 2003
Qatar	1995	National	1195	3	6-24		Amine EK. Nutritional assessment in Qatar; 1995 Oct 20-Nov 3 [assignment report]. Qatar, WHO Regional Office for the Eastern Mediterranean, 1995
Republic of Korea	1993	National	3172	2	6-72	18+	Ministry of Health and Welfare. 1993 National Nutrition Survey Report. 1995
Republic of Korea	1995	National	1835	3		15-50	Ministry of Health and Welfare. 1995 National Nutrition Survey Report. Republic of Korea, Ministry of Health and Welfare, 1997
Republic of Korea	1998	National	3228	1		15-49	Korean NHANES 1998
Republic of Korea	2001	National	4430	2		15-50	Korean Ministry of Health and Welfare. The Second Korea National Health and Nutrition Examination Survey, 2001. Seoul, Korean Ministry of Health and Welfare, 2003
Republic of Korea	2005	National	2038	1		15-49	Korean NHANES 2005
Republic of Korea	2007	National	994	1		15-49	Korean NHANES 2007
Republic of Korea	2008	National	2201	1		15-49	Korean NHANES 2008
Republic of Korea	2009	National	2393	1		15-49	Korean NHANES 2009
Rwanda	1996	National	1130	2, 4	6-59	15-50	Ministère de la Santé, UNICEF, OMS. National Nutrition Survey of Women and Children in Rwanda in 1996 [final report]. Kigali, Ministère de la Santé, 1997
Rwanda	2005	National	9089	1	6-59	15-49	DHS
Rwanda	2008	National	11856	1	6-59	15-49	DHS
Rwanda	2010	National	11122	1	6-59	15-49	DHS
Samoa	1999	National	486	3	0-59	20-50	Mackerras D, Kiernan DM. Samoa national nutritional survey 1999, part 1: anaemia survey [technical report]. Apia, Department of Health, 2002
Senegal	2005	National	6986	1	6-59	15-49	DHS
Senegal	2008	National	10184	1	6-59	15-49	MIS
Senegal	2010-2011	National	9642	1	6-59	15-49	DHS
Serbia	2000	National	1665	2	6-59	15-50	Petrovic O, Popovic D, Simic S, Bjeloglav D, Peart G. Multiple Indicator Cluster Survey II. The report for the Federal Republic of Yugoslavia. Belgrade, United Nations Children's Fund, 2000
Sierra Leone	2008	National	5916	1	6-59	15-49	DHS
Somalia	2001	Subnational	784	2	6-59		UNICEF. Anemia survey in Somaliland [report]. 2001

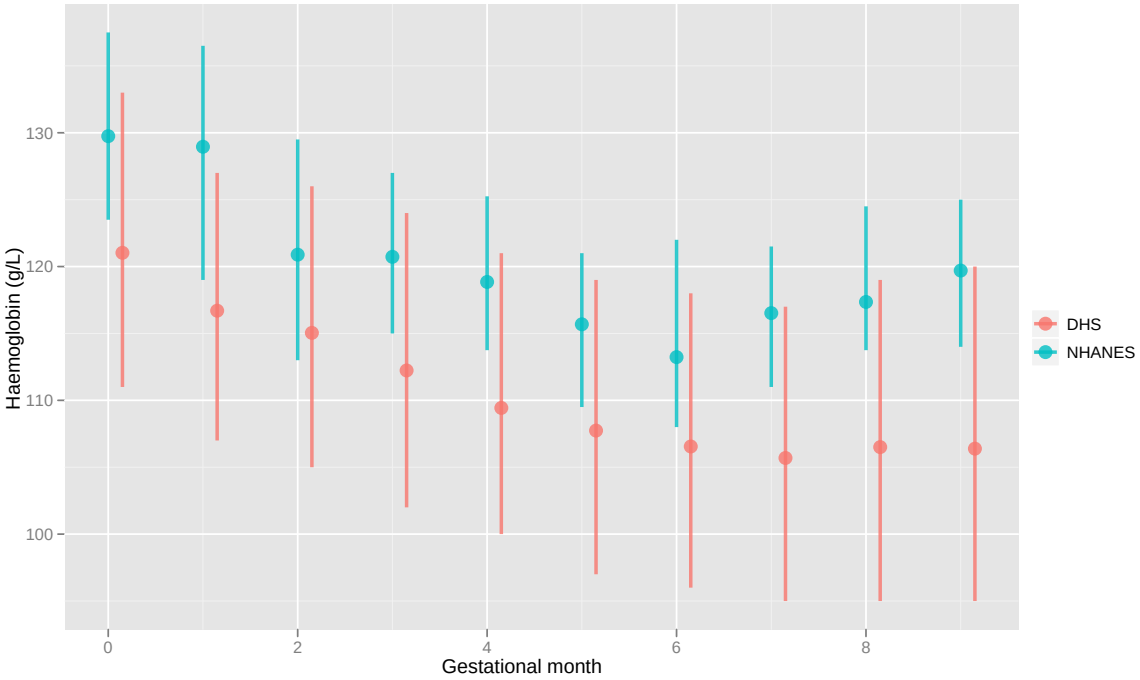
Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
Somalia	2009	National	1634	3	6-59	15-49	National Micronutrient and Anthropometric Nutrition Survey Somalia 2009
South Africa	1994	National	4494	3, 4	6-72		South African Vitamin A Consultation Group (SAVACG). Children aged 6 to 71 months in South Africa, 1994: their anthropometric, vitamin A, iron and immunisation coverage status. Johannesburg, South African Vitamin A Consultative Group, 1995
South Africa	2005	National	2744	3, 4	12-47	15-49	National Food Consumption Survey-Fortification Baseline (NFCS-FB). Department of Health, Republic of South Africa.
Sri Lanka	1994-1995	National	3350	3	3-59	15+	Mudalige R, Nestel P. Prevalence of anaemia in Sri Lanka. Ceylon Journal of Medical Science, 1996, 39 -1 :9-16.
Sri Lanka	2001	National	7849	3	6-59	15-50	Piyasena C, Mahamithawa AMASB. Assessment of anaemia status in Sri Lanka 2001 [survey report]. Colombo, Ministry of Health, Nutrition and Welfare, Department of Health Services, Medical Research Institute, 2003
Sudan	1995	Subnational	2700	2	6-59	15+	Federal Ministry of Health, National Nutrition Department, WHO, Ministries of Health, Nutrition Departments Kassala - S. Darfur - N. Kordofan - Red Sea -Gezira -& Nahr El Neil States. Comprehensive Nutrition Survey. Khartoum, Federal Ministry of Health, National Nutrition Department, 1997
Swaziland	2006	National	8446	1	6-59	15-49	DHS
São Tomé and Príncipe	2008	National	4385	1	6-59	15-49	DHS
Taiwan	1993-1996	National	605	3, 4		19-44	NAHSIT 1993-1996
Taiwan	2005-2008	National	261	3, 4		19-44	NAHSIT 2005-2008
Tajikistan	2003	National	3952	3	6-59	15-50	Branca F, Ferrari M, Rossi L. Micro-nutrient status survey in Tajikistan. Rome, National Institute for Research on Food and Nutrition, Kazakh Academy of Nutrition, 2004
Tajikistan	2009	National	4313	2	6-59	15-49	Micronutrient Status Survey in Tajikistan, 2009
Thailand	1995	National	5271	3	0-72	15-50	Ministry of Public Health, Department of Health. The Fourth National Nutrition Survey of Thailand 1995. Bangkok, Ministry of Public Health, Department of Health, 1998
Thailand	1997	National	1405	1		15-49	Thailand NHES 2
Timor-Leste	2003	National	9323	2	0-59	15-50	Ministry of Health [Timor Leste], University of Newcastle, Australian National University, ACIL. Timor Leste 2003 Demographic and Health Survey. Newcastle, Australia, Ministry of Health/University of Newcastle, 2003
Timor-Leste	2009	National	6735	1	6-59	15-49	DHS
Tunisia	1996-1997	National	2743	2	0-72	20-60	Ministère de la Santé Publique, Institut National de Nutrition. Rapport national: évaluation de l'état nutritionnel de la population tunisienne [National report: evaluation of the nutritional status of the Tunisian population]. Tunis, Ministère de la Santé Publique, 1996
Turkmenistan	2000	National	10664	2	0-59	15-50	Gurbansoltan Eje Clinical Research Center for Maternal and Child Health, Ministry of Health and Medical Industry [Turkmenistan], ORC Macro. Turkmenistan Demographic and Health Survey 2000. Calverton, MD, Gurbansoltan Eje Clinical Research Center for Maternal and Child Health, ORC Macro, 2001
Uganda	2000-2001	National	11941	1	6-59	15-49	DHS
Uganda	2006	National	5310	1	6-59	15-49	DHS
Uganda	2009	National	3623	1	6-59		MIS
Uganda	2011	National	4880	1	6-59	15-49	DHS
United Kingdom	1991	Subnational	1396	1		16-49	UK HSE 1991-1992
United Kingdom	1992-1993	Subnational	951	3	18-55		Gregory JR, Collins DL, Davies PSW, Hughes JM, Clarke PC. National Diet and Nutrition Survey: children aged 1½ to 4½ years. Volume 1: report of the diet and nutrition survey. London, Her Majesty's Stationery Office, 1995
United Kingdom	1993	Subnational	3269	1		16-49	UK HSE 1993
United Kingdom	1994	Subnational	3175	1		16-49	UK HSE 1994
United Kingdom	1995	Subnational	2034	1		20-49	Scottish Health Survey 1995
United Kingdom	1997	Subnational	169	3		15-19	Gregory J, Lowe S, Bates CJ, Prentice A, Jackson LV, Smithers G, Wenlock R, Farron M. National Diet and Nutrition Survey: young people aged 4 to 18 years. Volume 1: report of the diet and nutrition survey. London, Her Majesty's Stationery Office, 2000

Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
United Kingdom	1997	Subnational	212	1		18-24	UK HSE 1997
United Kingdom	1998	Subnational	3034	1		15-49	UK HSE 1998
United Kingdom	1998	Subnational	1876	1		15-49	Scottish Health Survey 1998
United Kingdom	2000-2001	Subnational	486	3		19-50	Ruston D, Hoare J, Henderson L, Gregory J, Bates CJ, Prentice A, Birch M, Swan G, Farron M. The National Diet & Nutrition Survey: adults aged 19 to 64 years. Volume 4: nutritional status (anthropometry and blood analytes), blood pressure and physical activity. London, Her Majesty's Stationery Office, 2004
United Kingdom	2001	Subnational	390	1		15-24	UK HSE 2001
United Kingdom	2002	Subnational	946	1		15-24	UK HSE 2002
United Kingdom	2006	Subnational	1990	1		16-49	UK HSE 2006
United Republic of Tanzania	2004	National	17658	1	6-59	15-49	DHS
United Republic of Tanzania	2007	National	6492	1	6-59		AIS/MIS
United Republic of Tanzania	2010	National	16995	1	6-59	15-49	DHS
United States of America	1988-1991	National	3878	1	12-59	15-49	NHANES III
United States of America	1991-1994	National	4804	1	12-59	15-49	NHANES III
United States of America	1999-2000	National	2368	1	12-59	15-49	NHANES 1999-2000
United States of America	2001-2002	National	2754	1	12-59	15-49	NHANES 2001-2002
United States of America	2003-2004	National	2514	1	12-59	15-49	NHANES 2003-2004
United States of America	2005-2006	National	2740	1	12-59	15-49	NHANES 2005-2006
United States of America	2007-2008	National	2255	1	12-59	15-49	NHANES 2007-2008
United States of	2009-2010	National	2564	1	12-59	15-49	NHANES 2009-2010
Uzbekistan	1996	National	5180	1	6-35	15-49	DHS
Uzbekistan	2002	National	1207	2	6-36		Ministry of Health, Analytical and Information Center [Uzbekistan], Ministry of Macroeconomics and Statistics, State Department of Statistics [Uzbekistan], ORC Macro. Uzbekistan Health Examination Survey 2002. Calverton, MD, ORC Macro, 2004
Vanuatu	1996	National	1919	2		15-50	Harvey P, Carlot M, Menere R. Report of the second national nutrition survey 1996. Port Vila, Department of Health, 1998
Vanuatu	2007	National	904	1	6-59	15-49	MICS
Viet Nam	1995	National	NR	2	26451	15+	Yip R. Final report of the 1995 Viet Nam National Nutrition Anemia and Intestinal Helminth Survey: a recommended plan of action for the control of iron deficiency for Viet Nam. Jakarta, United Nations Children's Fund [Indonesia], 1996
Viet Nam	2000-2001	National	16903	3	0-59	15-50	Khoi HH, Khan NC, Tam NC, Mai LB, Hao LQ, Thuy PV, Ninh NX, Do TT, Quang ND. Report on Vietnam National anemia Survey, 2000. Hanoi, National Institute of Nutrition, 2001
Viet Nam	2010	National	1523	2		15-49	Laillou, A. et al. 2012. Micronutrient deficits are still publich health issues among women and young children in Vietnam. Plos One 7(4):e34906.
Zambia	1998	National	2925	2	6-59	15+	Luo C, Mwela CM, Campbell J. National baseline survey on prevalence and aetiology of anaemia in Zambia: a random cluster community survey involving children, women and men. Lusaka, National Food and Nutrition Commission., 1999

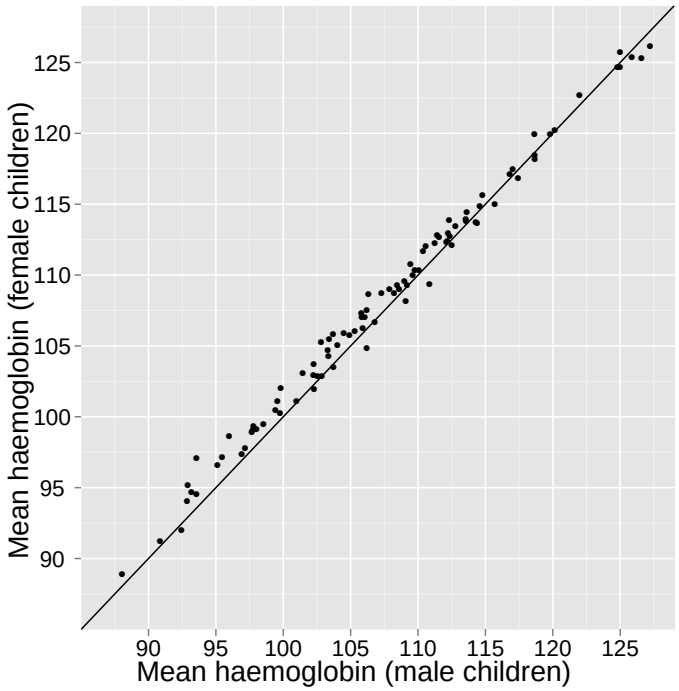
Country	Year	Administrative level	Sample size (women and children)	Notes	Age range (children)	Age range (women)	Survey (when individual level data available) or source (when summary statistics available)
							Micronutrient Operational Strategies and Technologies (MOST), UNICEF, Centers for Disease Control and Prevention, Food and Nutrition Commision of Zambia, University of Zambia. Report of the national survery to evaluate the impact of vitamin A interventions in Zambia, July and November 2003. Zambia, Micronutrient Operational Strategies and Technologies, United
Zambia	2003	National	1347	3	6-59	15-50	States Agency for International Development (USAID) Micronutrient Program, 2003
Zambia	2006	National	1927	3	0-59		Zambia MIS 2006
Zambia	2008	National	3086	3	0-59		Zambia MIS 2008
Zambia	2010	National	3162	3	0-59		Zambia MIS 2010
							Sikosana PLN, Bhebhe S, Katuli S. A prevalence survey of iron deficiency and iron deficiency anaemia in pregnant and lactating women, adult males and pre-school children in Zimbabwe.
Zimbabwe	1997	Subnational	2345	2	12-59	15-50	Central African Journal of Medicine, 1998, 44 -12 :297-305.
							Zimbabwe National Micronutrient Survey: 1999, Ministry of Health and Child Welfare, Nutrition
Zimbabwe	1999	National	1197	2	12-72	15-50	Unit
Zimbabwe	2005-2006	National	11980	1	6-59	15-49	DHS
Zimbabwe	2010-2011	National	12715	1	6-59	15-49	DHS

For the indicator column: 1 = individual record data available, 2 = prevalence of anaemia reported, 3 = mean haemoglobin and prevalence of anaemia reported, 4 = Adjustment for altitude was done on summary statistics (vs. on individual-level data)

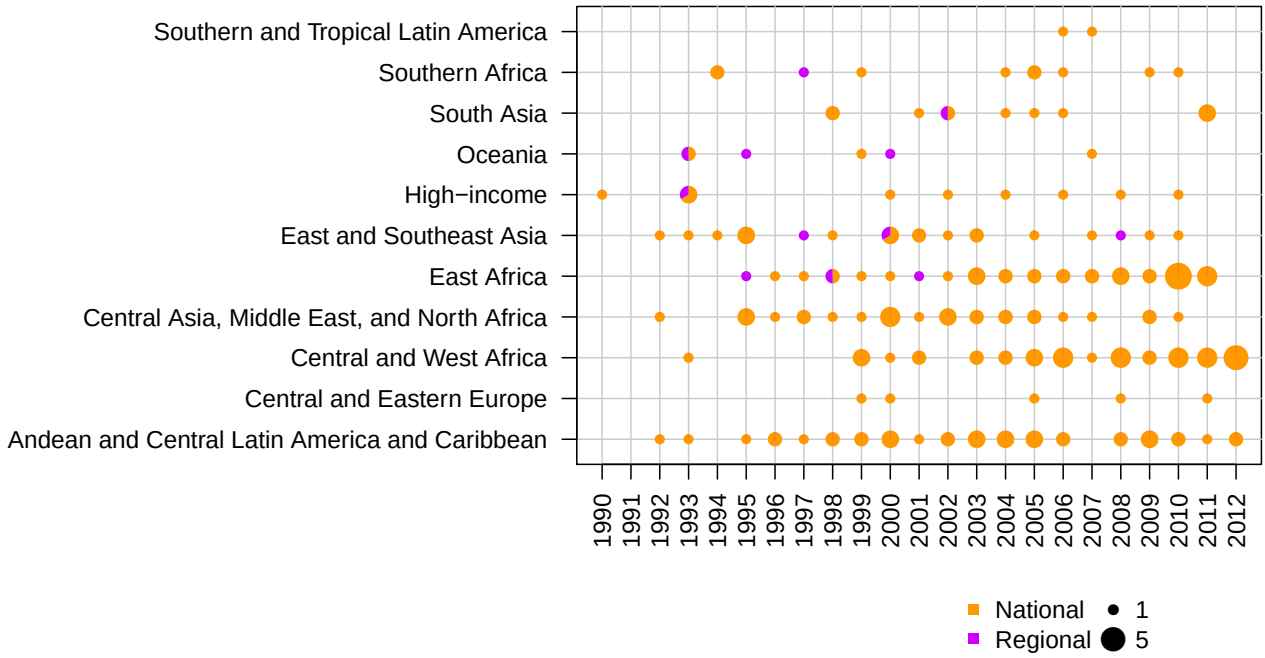
Webfigure 1: The relationship between gestational month and mean haemoglobin concentration. Median haemoglobin concentration and its interquartile range are shown by month of pregnancy, for Demographic and Health Surveys (DHS, from low- and middle-income countries) and the US National Health and Nutrition Examination Survey (NHANES, a high-income country). The graph shows that the shape of the decline in haemoglobin with gestational age is similar between the two populations, even though the NHANES sample has higher haemoglobin than the DHS sample.



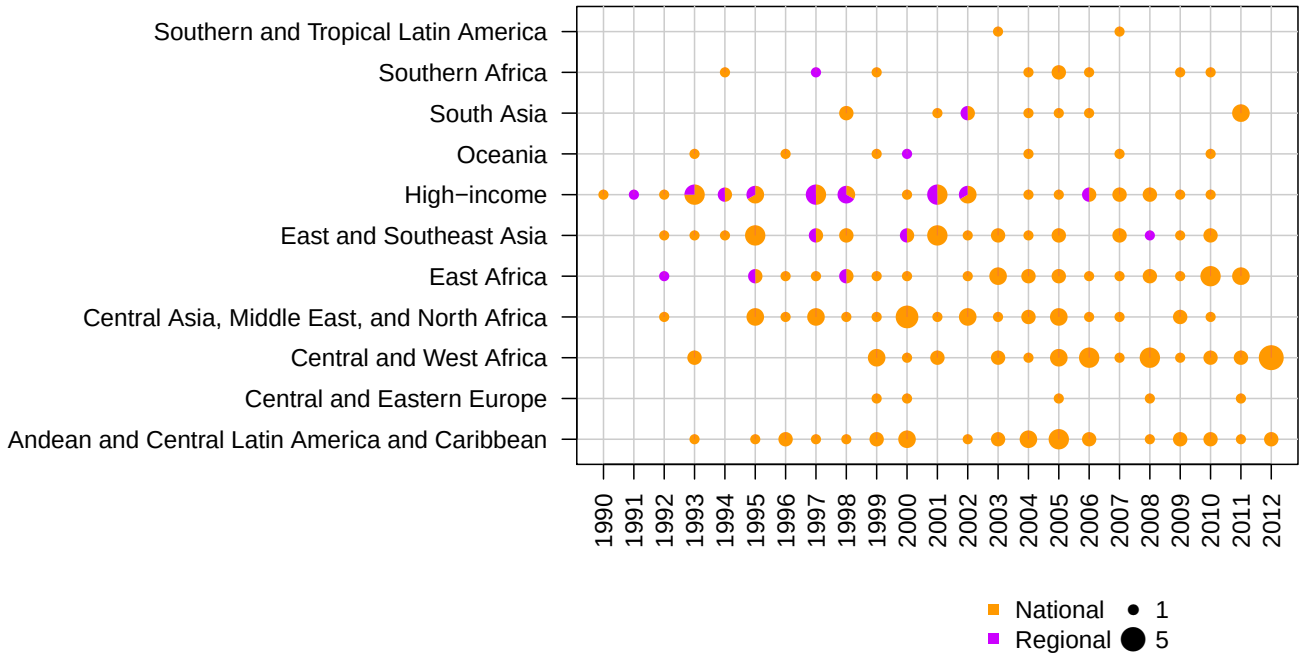
Webfigure 2: Comparison of mean haemoglobin concentration in male vs. female children under 5 years of age.



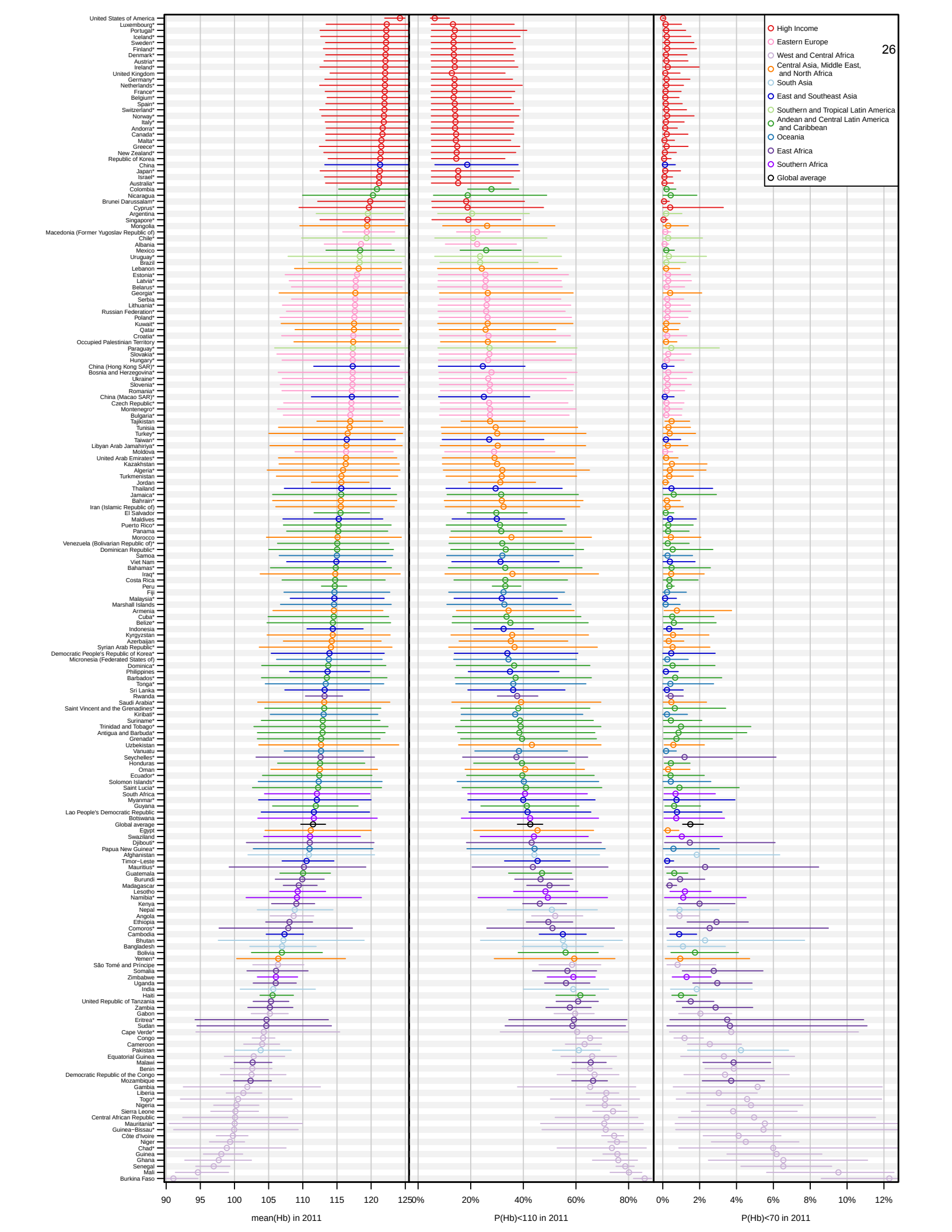
Webfigure 3: Data sources available by region, year, and the level of representativeness (national vs. regional) for children.



Webfigure 4: Data sources available by region, year, and the level of representativeness (national vs. regional) for women of reproductive age.



Webfigure 5: Mean haemoglobin concentration and prevalences of anaemia and of severe anaemia by country, children 6-59 months, 2011. The horizontal line shows the uncertainty interval; as defined in Methods, the uncertainty intervals represent the 2.5th-97.5th percentiles of the 2,500 posterior MCMC draws. *Countries with no data for which the estimates are based on data in all other countries and on the country-specific covariates that are used in the model.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Andean and Central Latin America and Caribbean
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Mali
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100
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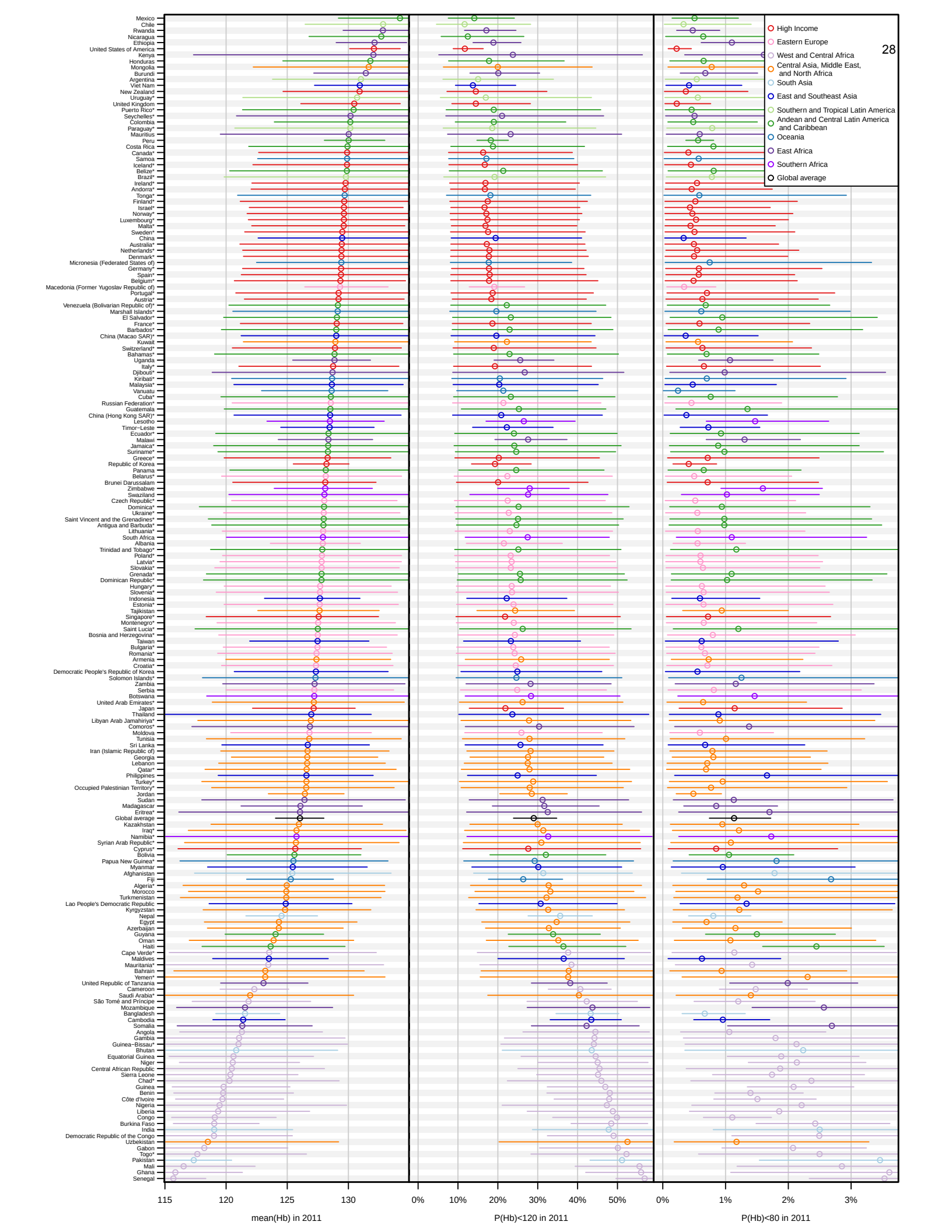
110
115
120
125
mean(Hb) in 2011
0%
20%
40%
60%
80%
P(Hb)<110 in 2011
0%
2%
4%
6%
8%
10%
12%
P(Hb)<70 in 2011

Webfigure 6a: Mean haemoglobin concentration and prevalences of anaemia and of severe anaemia by country, non-pregnant women 15-49 years, 2011. The horizontal line shows the uncertainty interval; as defined in Methods, the uncertainty intervals represent the 2.5th-97.5th percentiles of the 2,500 posterior MCMC draws. *Countries with no data for which the estimates are based on data in all other countries and on the country-specific covariates that are used in the model.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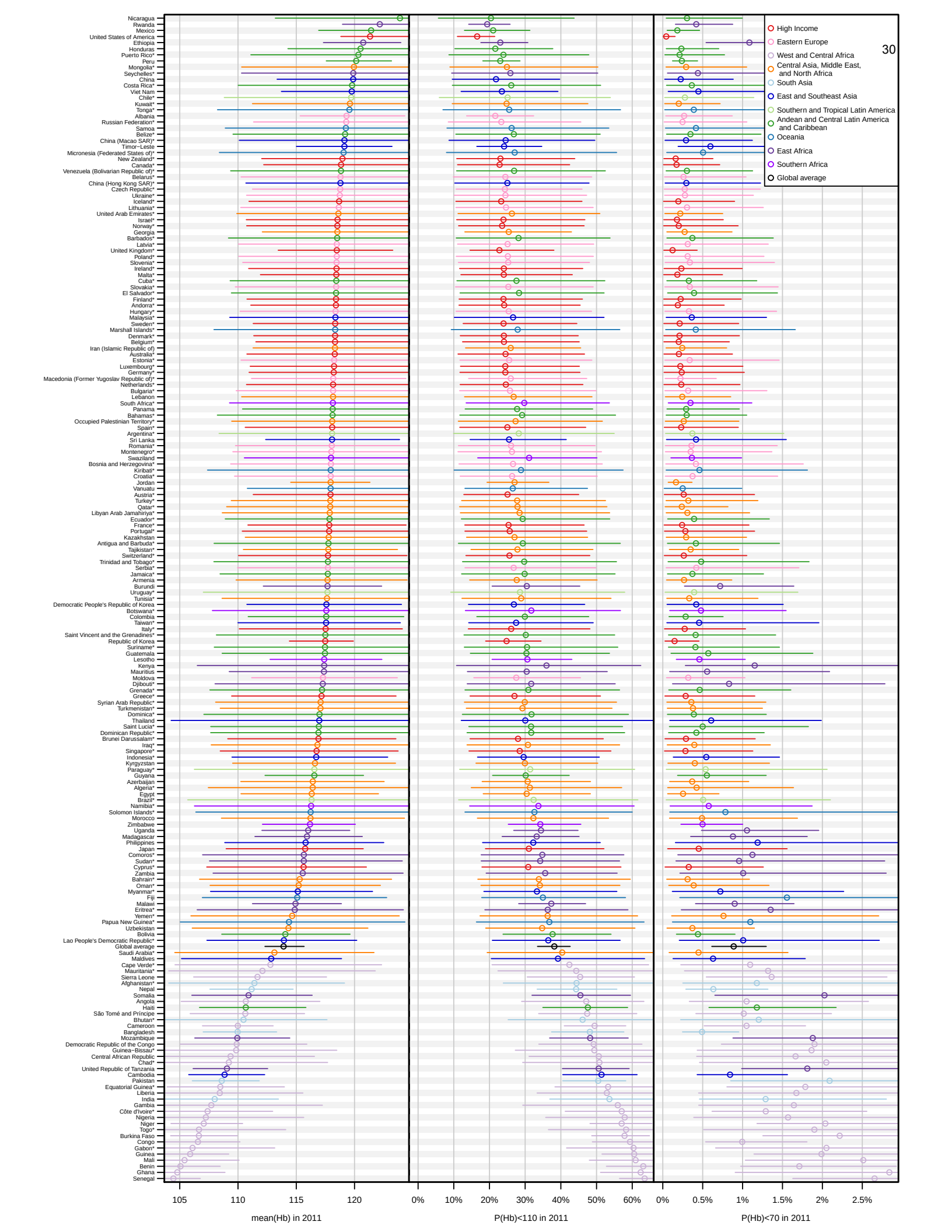
Andean and Central Latin America and Caribbean
Oceania
East Africa
Southern Africa
Global average
28
115
120
125
130
mean(Hb) in 2011
0%
10%
20%
30%
40%
50%
P(Hb)<120 in 2011
0%
1%
2%
3%
P(Hb)<80 in 2011

Webfigure 6b: Mean haemoglobin concentration and prevalences of anaemia and of severe anaemia by country, pregnant women 15-49 years, 2011. The horizontal line shows the uncertainty interval; as defined in Methods, the uncertainty intervals represent the 2.5th-97.5th percentiles of the 2,500 posterior MCMC draws. *Countries with no data for which the estimates are based on data in all other countries and on the country-specific covariates that are used in the model.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P(Hb)<110 in 2011
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2%
2.5%
P(Hb)<70 in 2011
High Income
Eastern Europe
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Central Asia, Middle East, and North Africa
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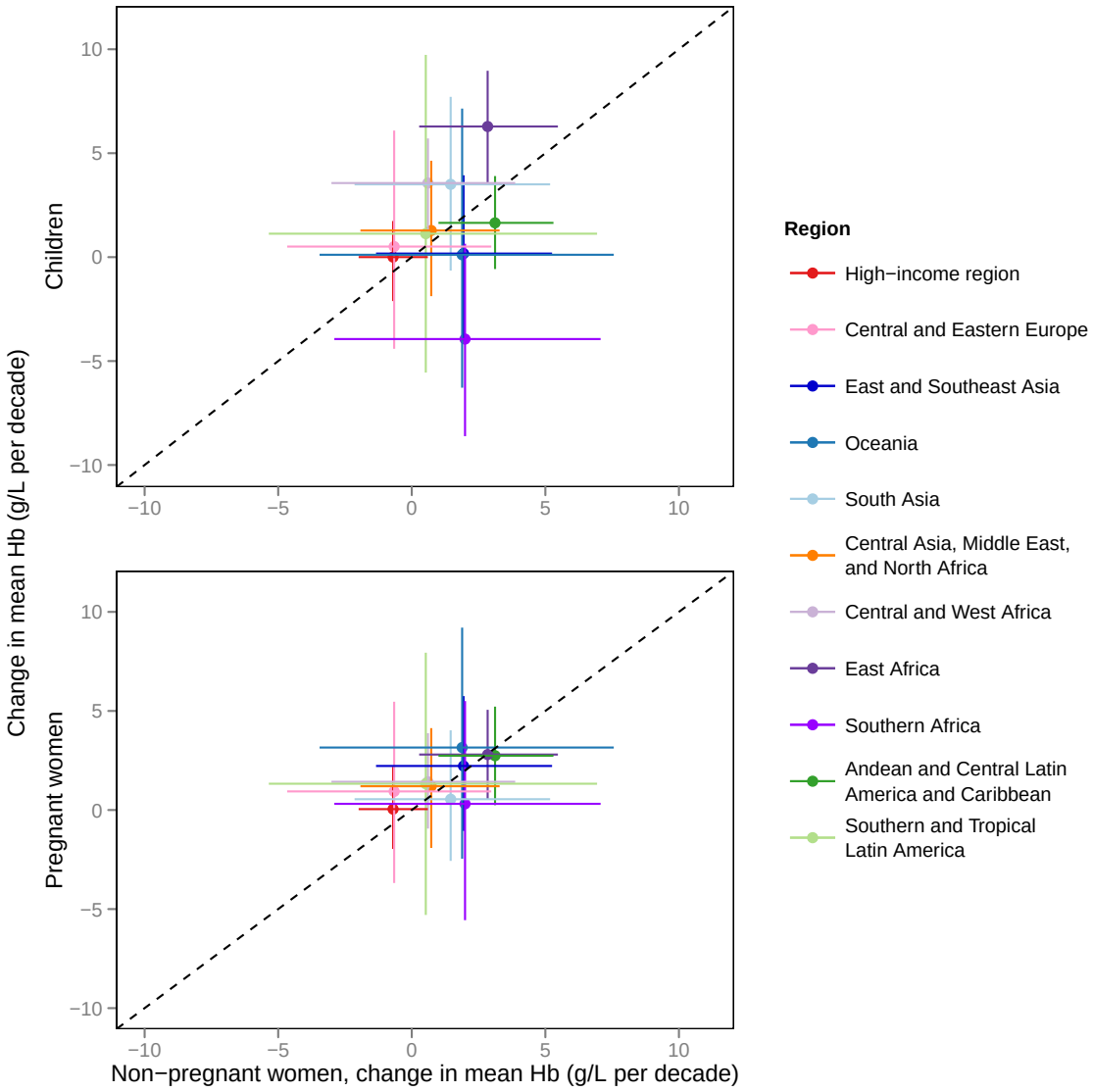
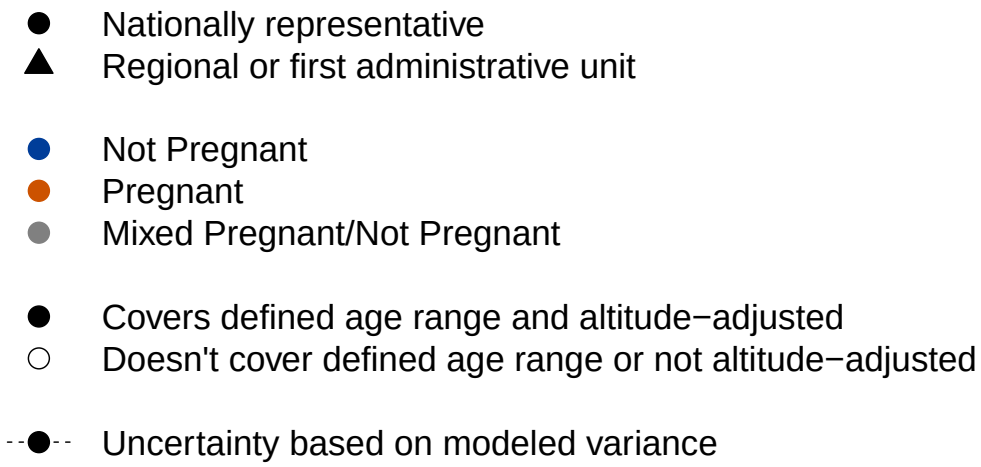
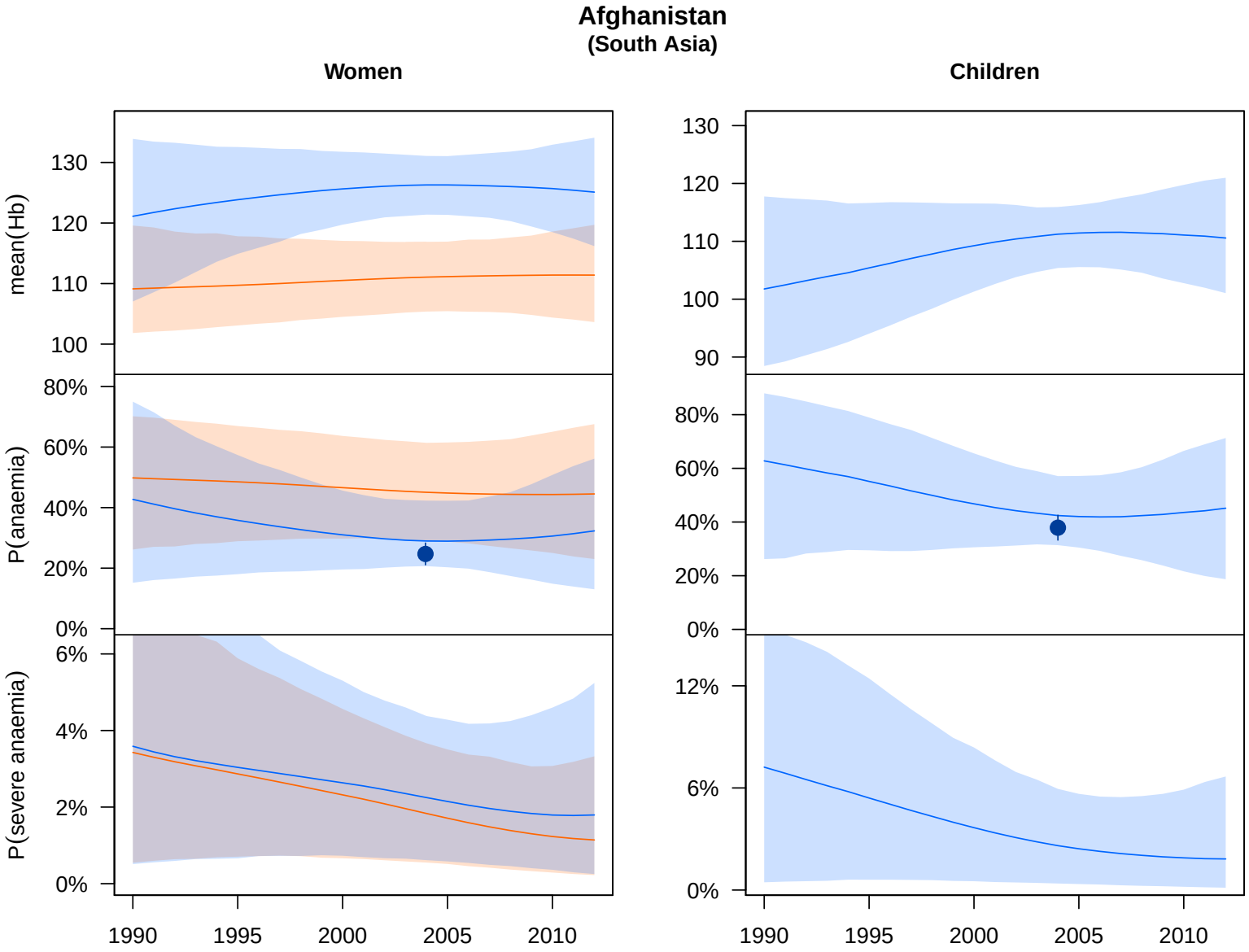
East and Southeast Asia
Southern and Tropical Latin America
Andean and Central Latin America and Caribbean
Oceania
East Africa
Southern Africa
Global average
30

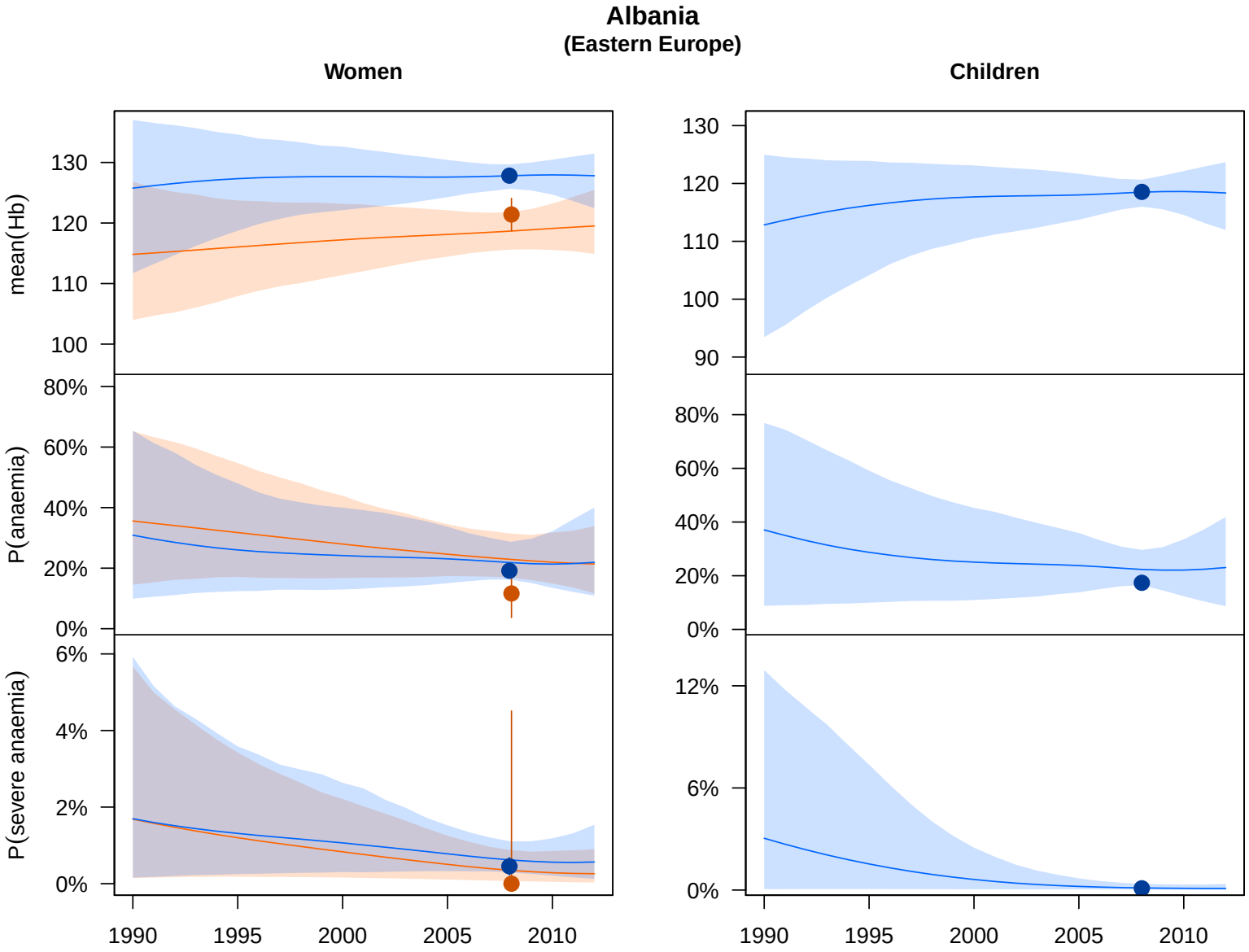
Webfigure 7: Comparison of change in mean haemoglobin of non-pregnant women, with those of pregnant women and children. The lines show the uncertainty interval; as defined in Methods, the uncertainty intervals represent the 2.5th-97.5th percentiles of the 2,500 posterior MCMC draws.



Webfigure 8: Trends in mean haemoglobin concentration and anaemia prevalence by country between 1990 and 2011. Trends are shown in relation to the original data. The shaded area shows the uncertainty intervals, defined and estimated as described in Methods. Only mean haemoglobin and WHO-defined anaemia and severe anaemia prevalence are shown; data using other definitions of anaemia were used in this analysis, accounting for the specific threshold as described in Methods, but are not shown. The number of observations used but not shown is reported in each panel. Observed anaemia and severe anaemia prevalences for combined groups of pregnant and nonpregnant women are based on cutoffs of 120 g/L and 80 g/L, respectively.

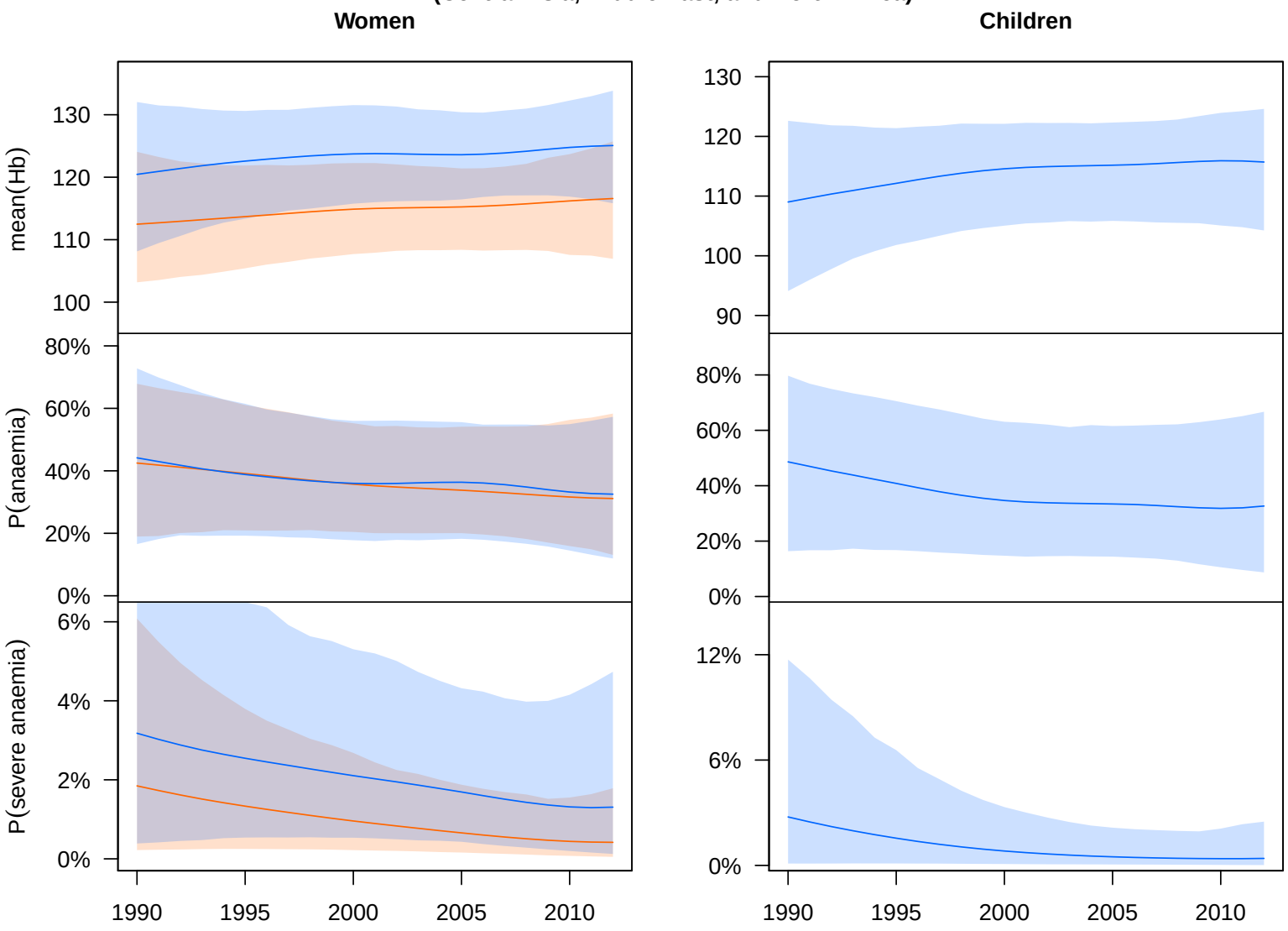


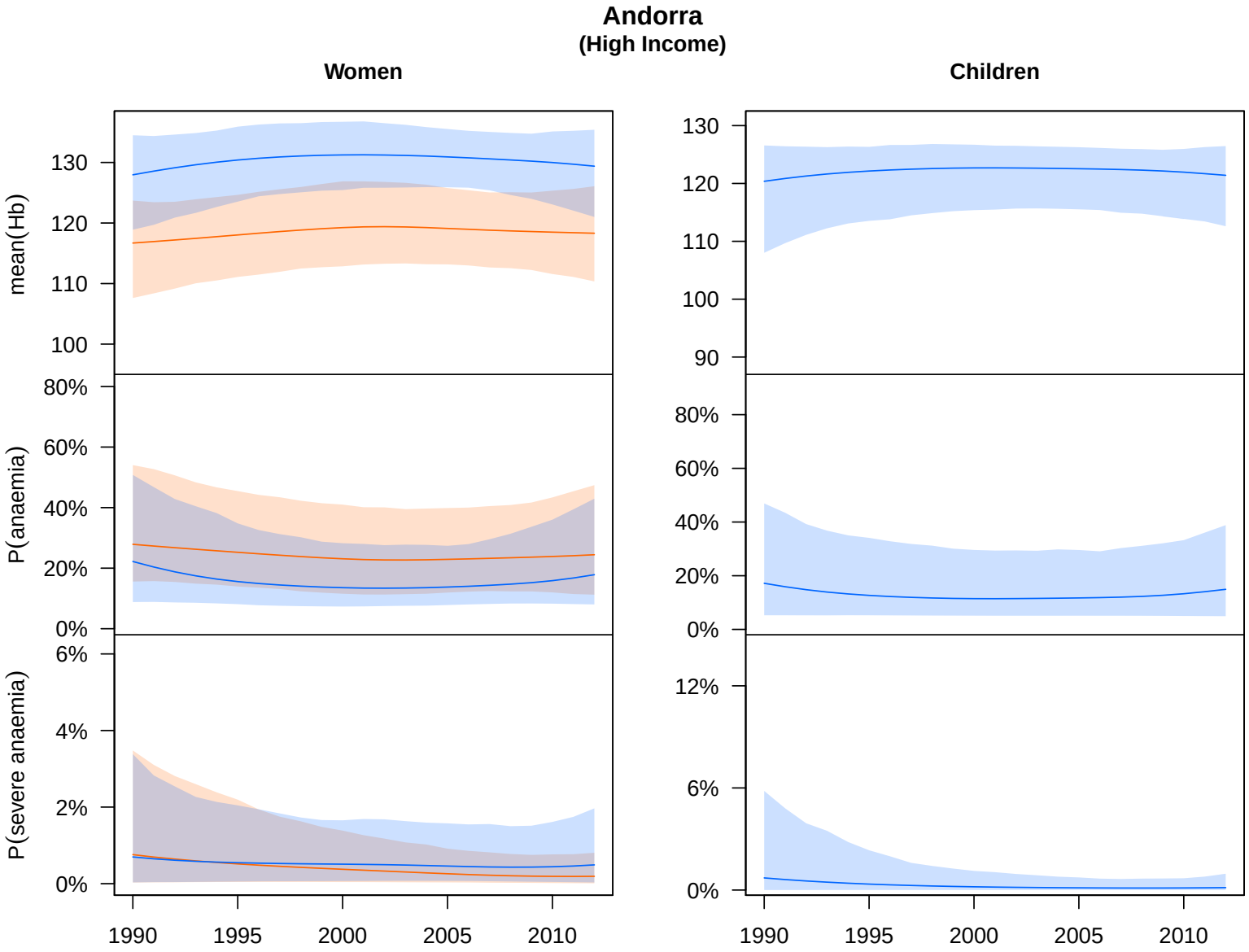

Afghanistan
(South Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

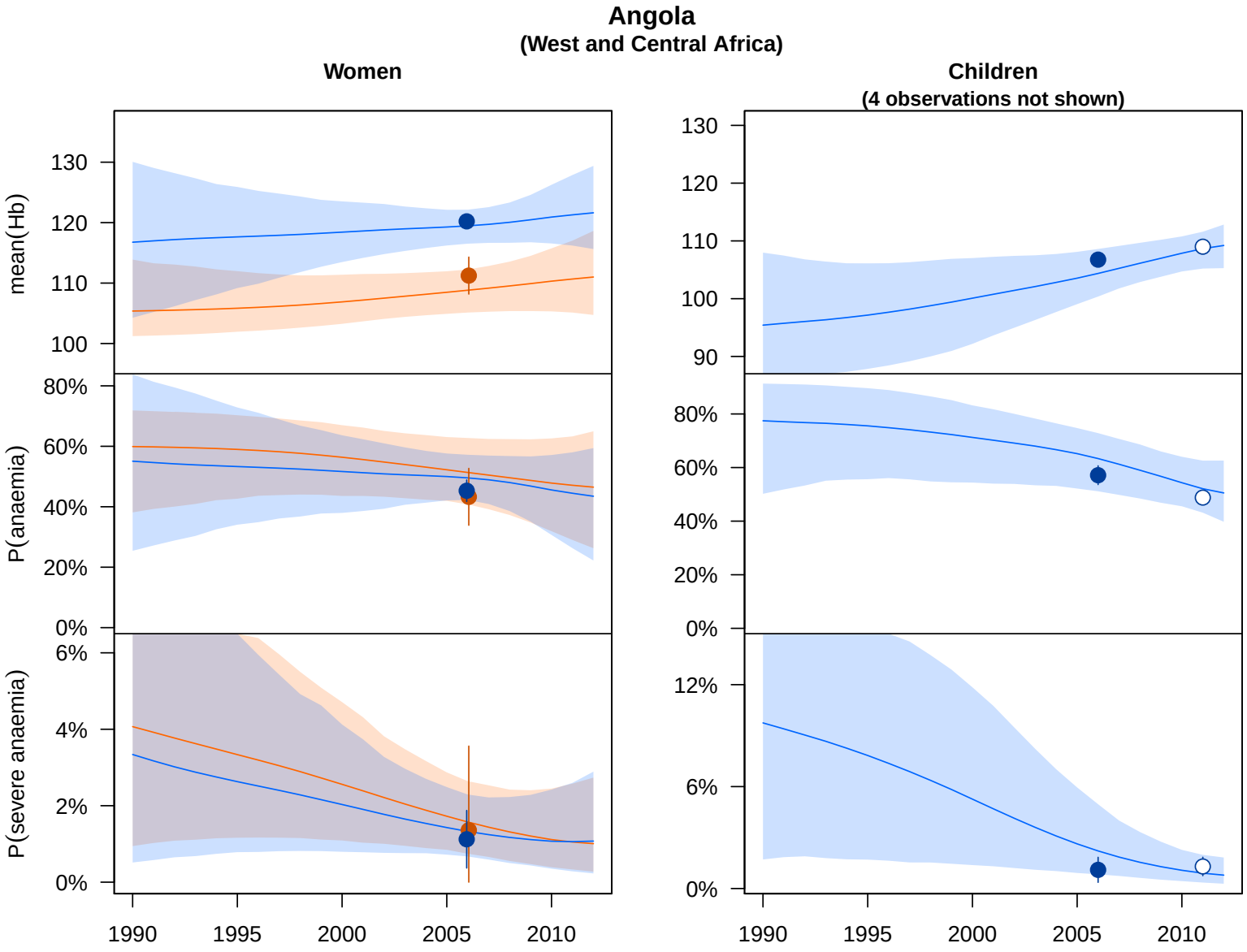

Albania
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
0%
12%
6%
1990
1995
2000
2005
2010

Algeria

(Central Asia, Middle East, and North Africa)

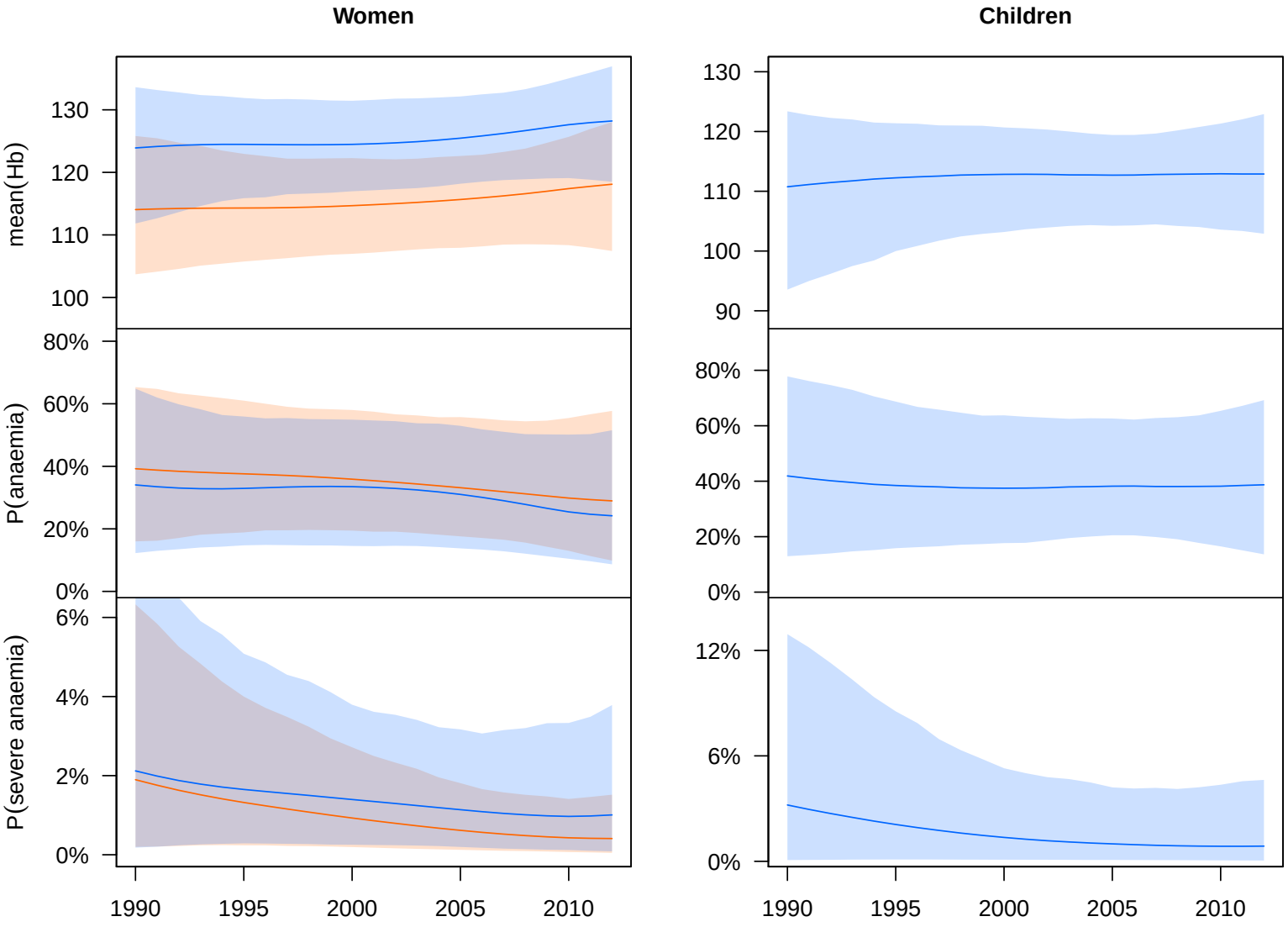


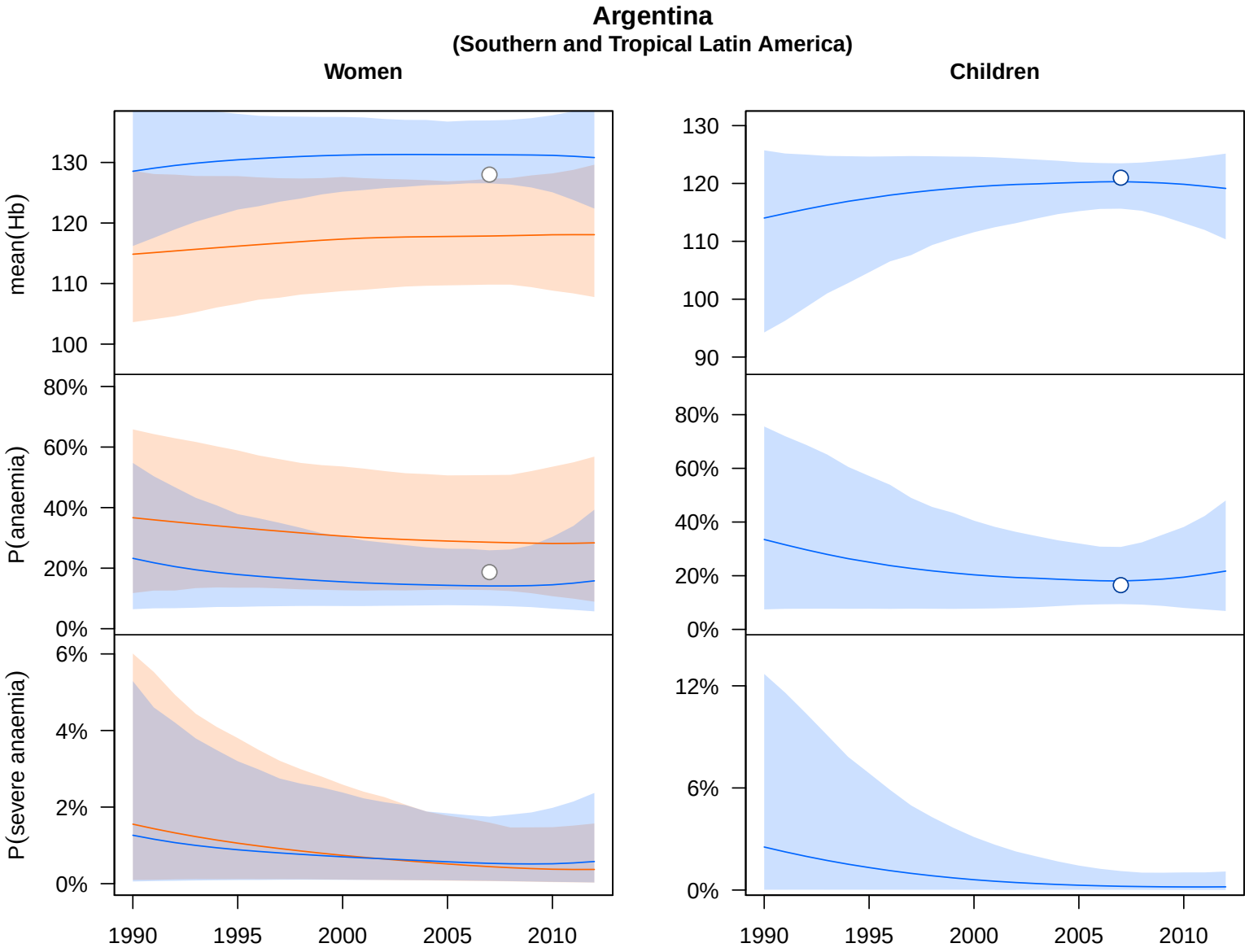

Andorra
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Angola
(West and Central Africa)
Women
Children
(4 observations not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

Antigua and Barbuda

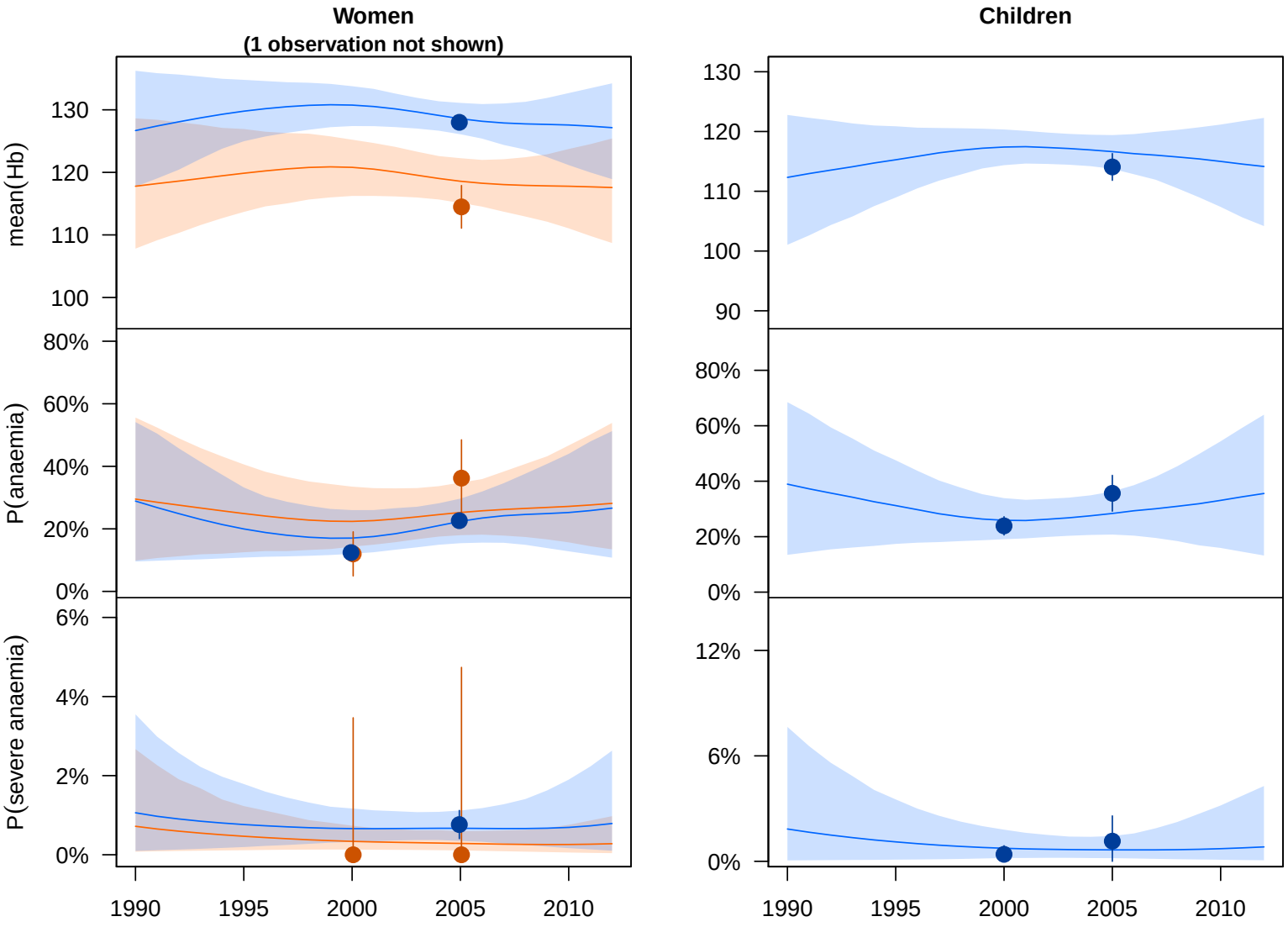
(Andean and Central Latin America and Caribbean)

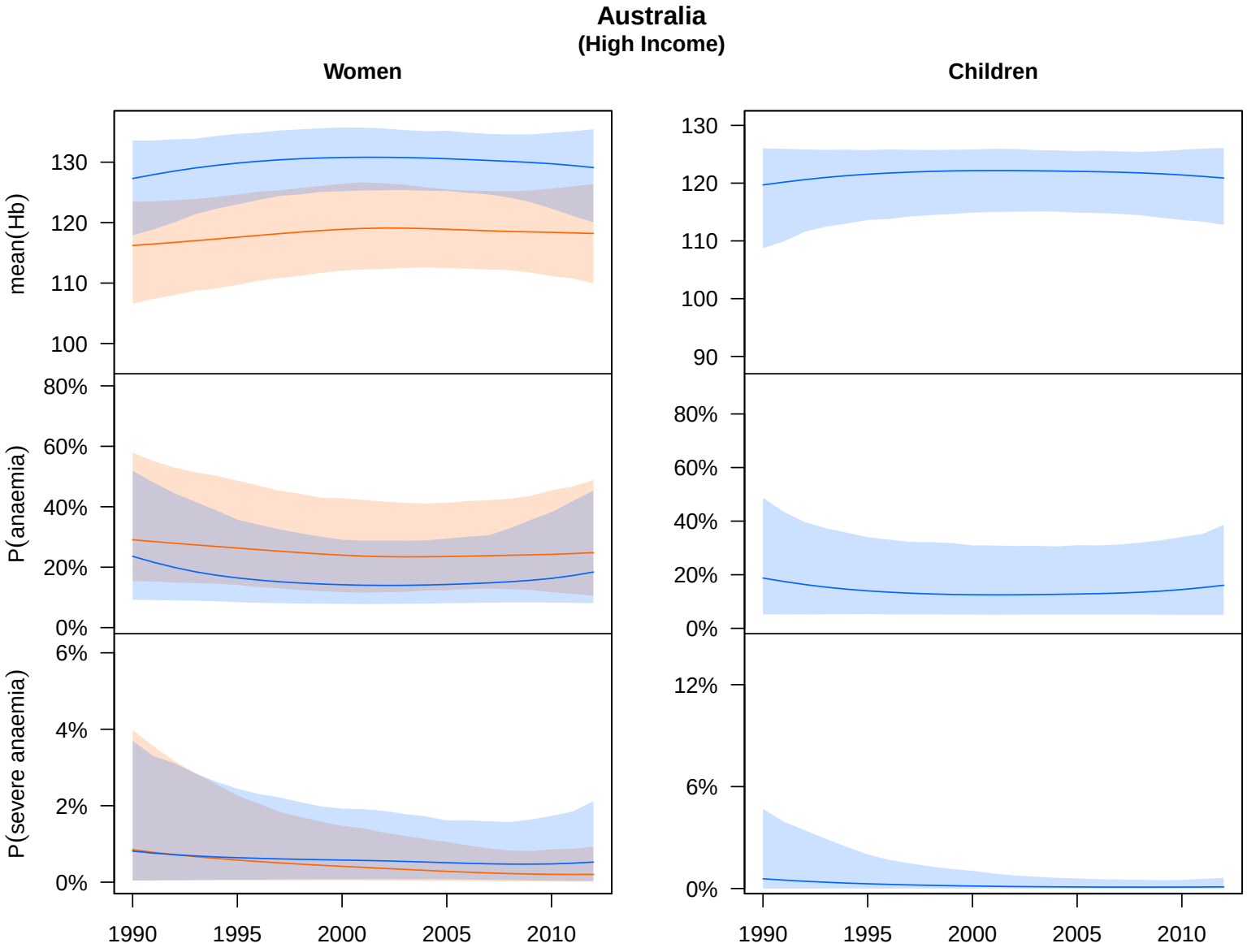


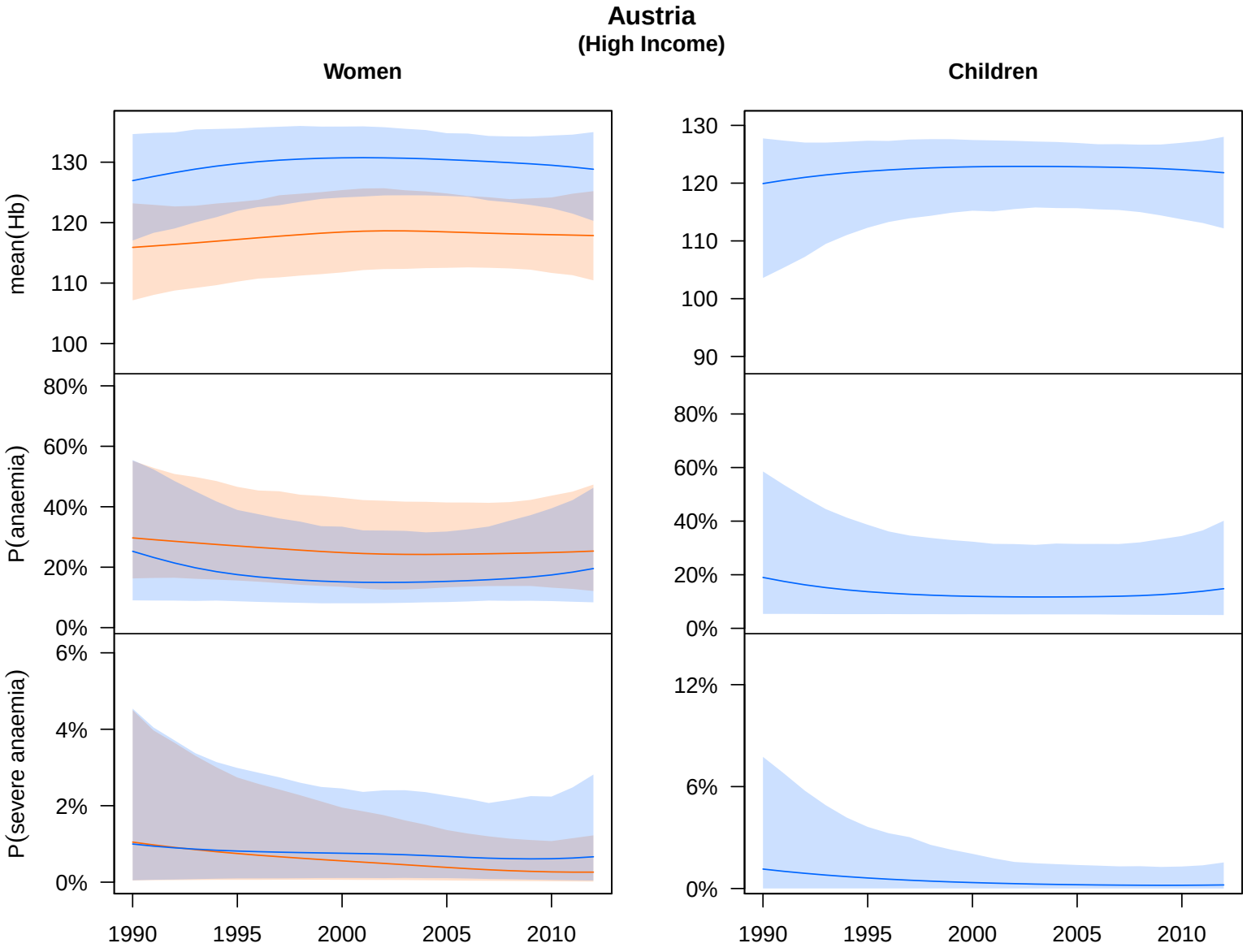

Argentina
(Southern and Tropical Latin America)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

Armenia

(Central Asia, Middle East, and North Africa)

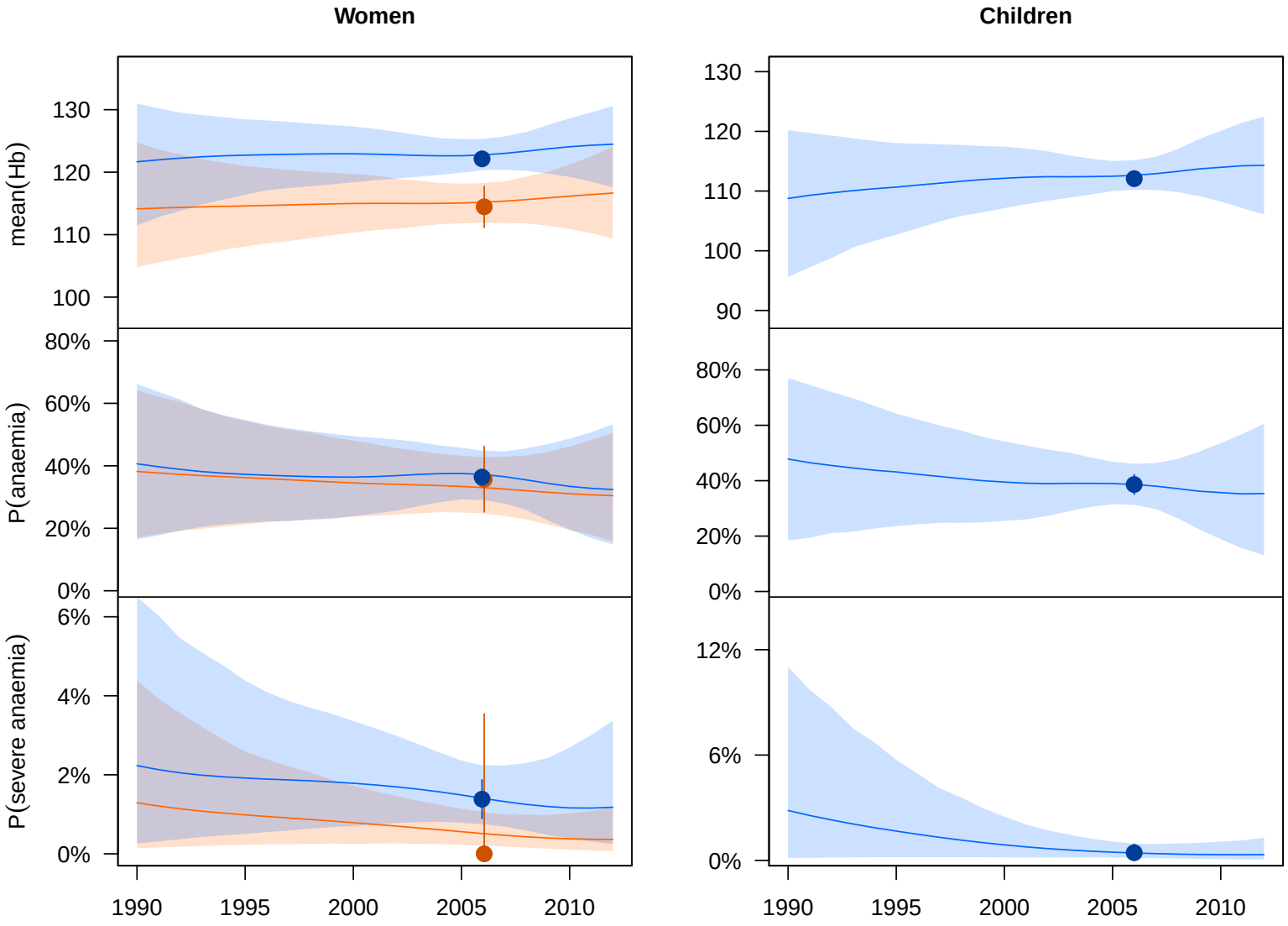



Australia
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Austria
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

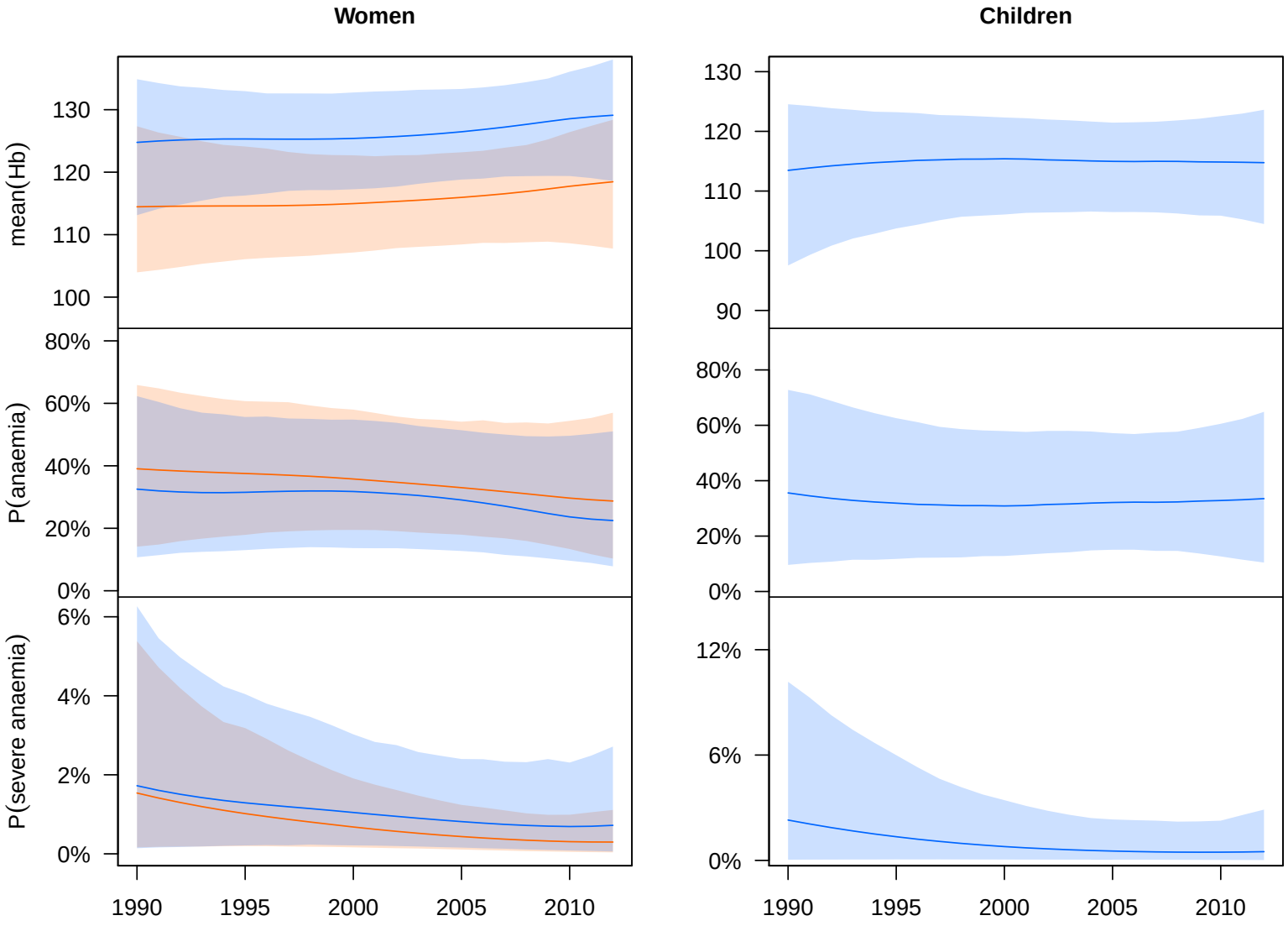
Azerbaijan

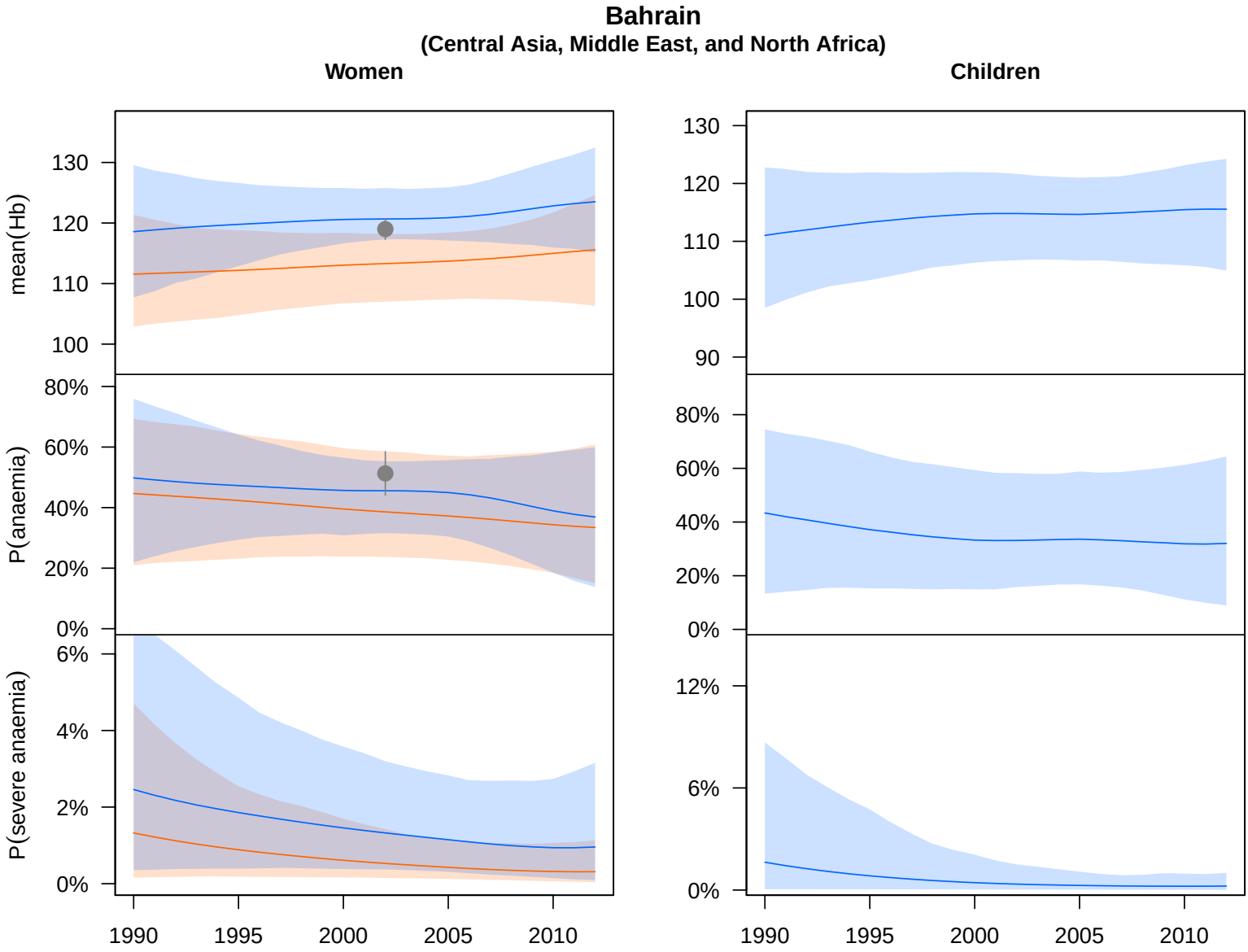
(Central Asia, Middle East, and North Africa)

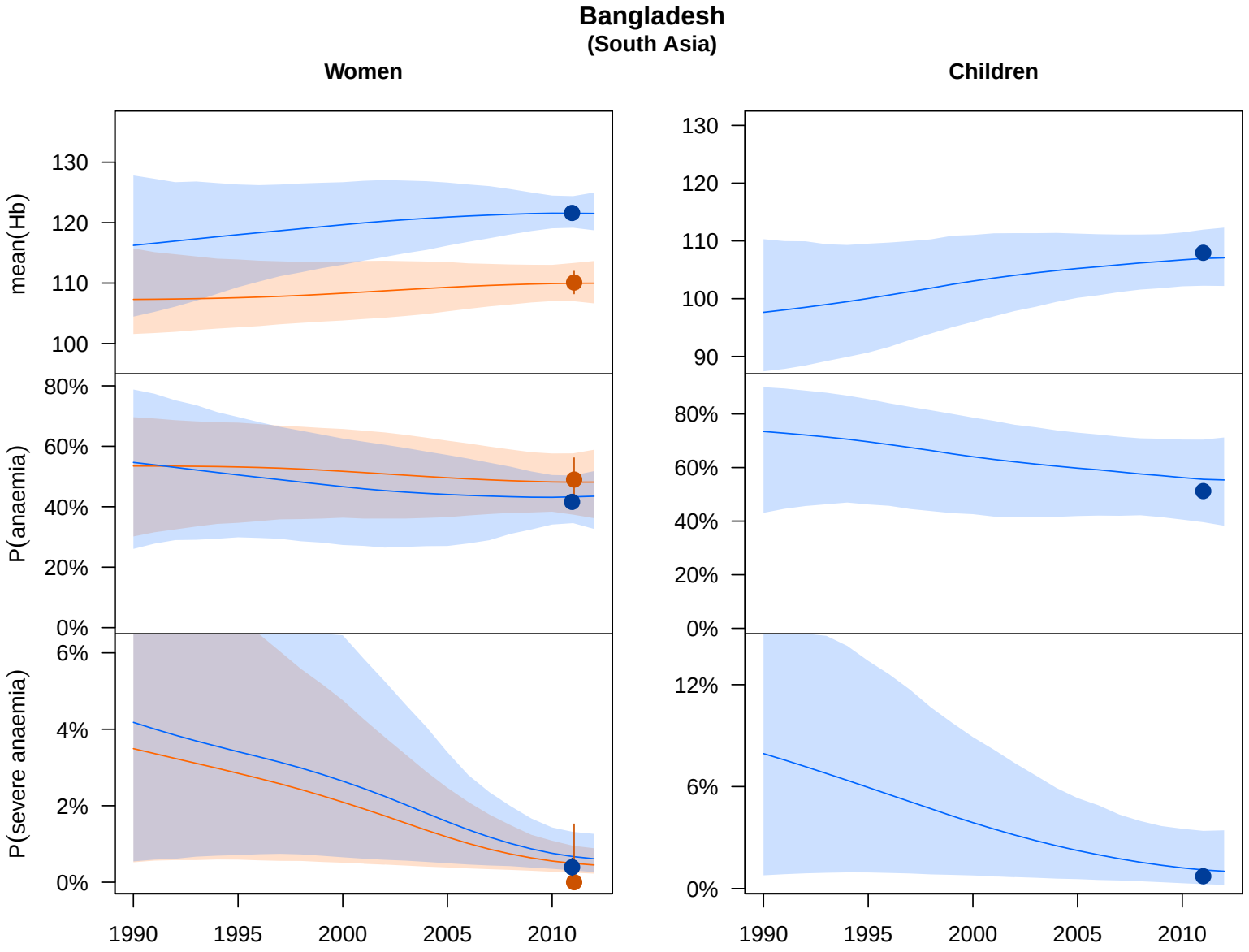


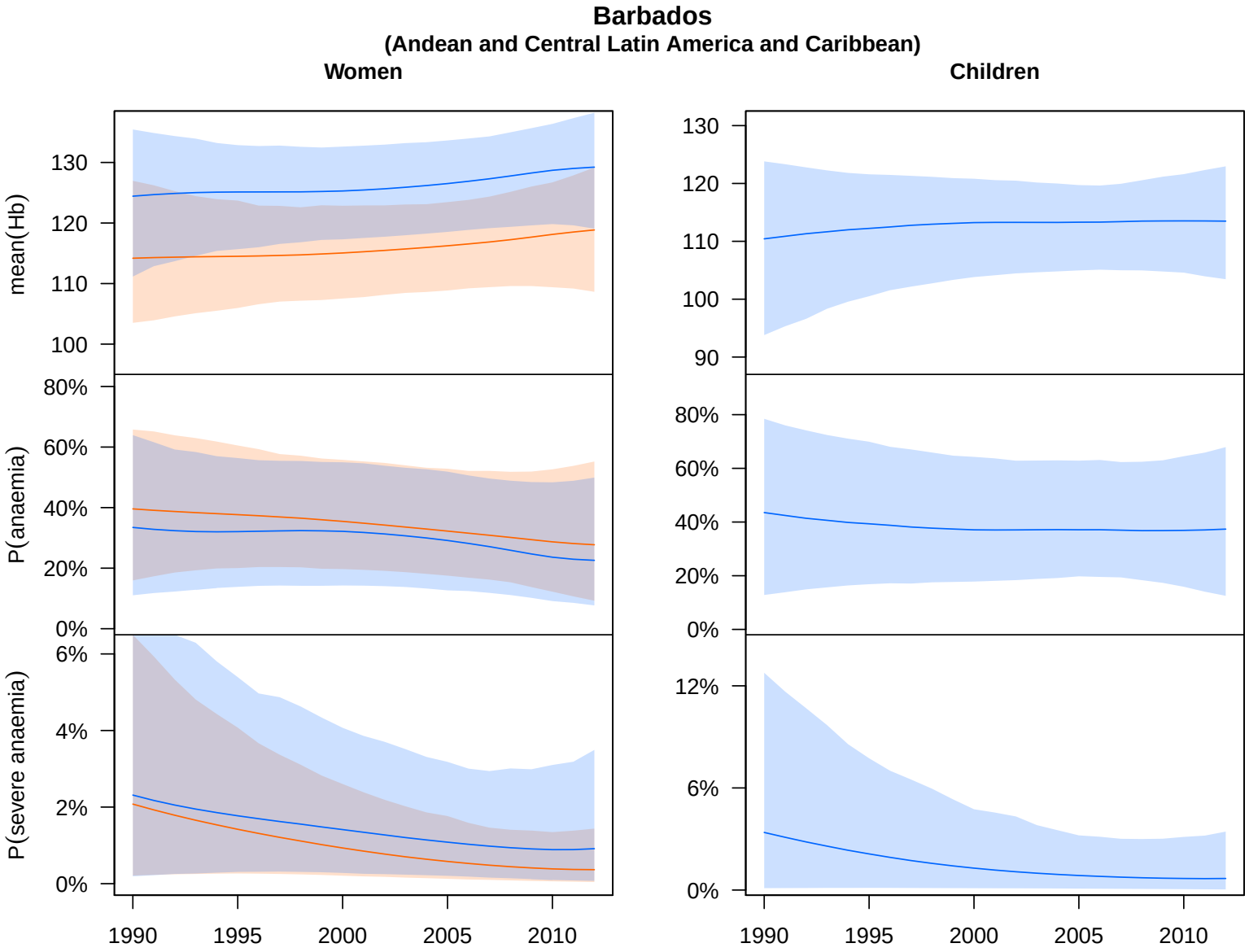
Bahamas

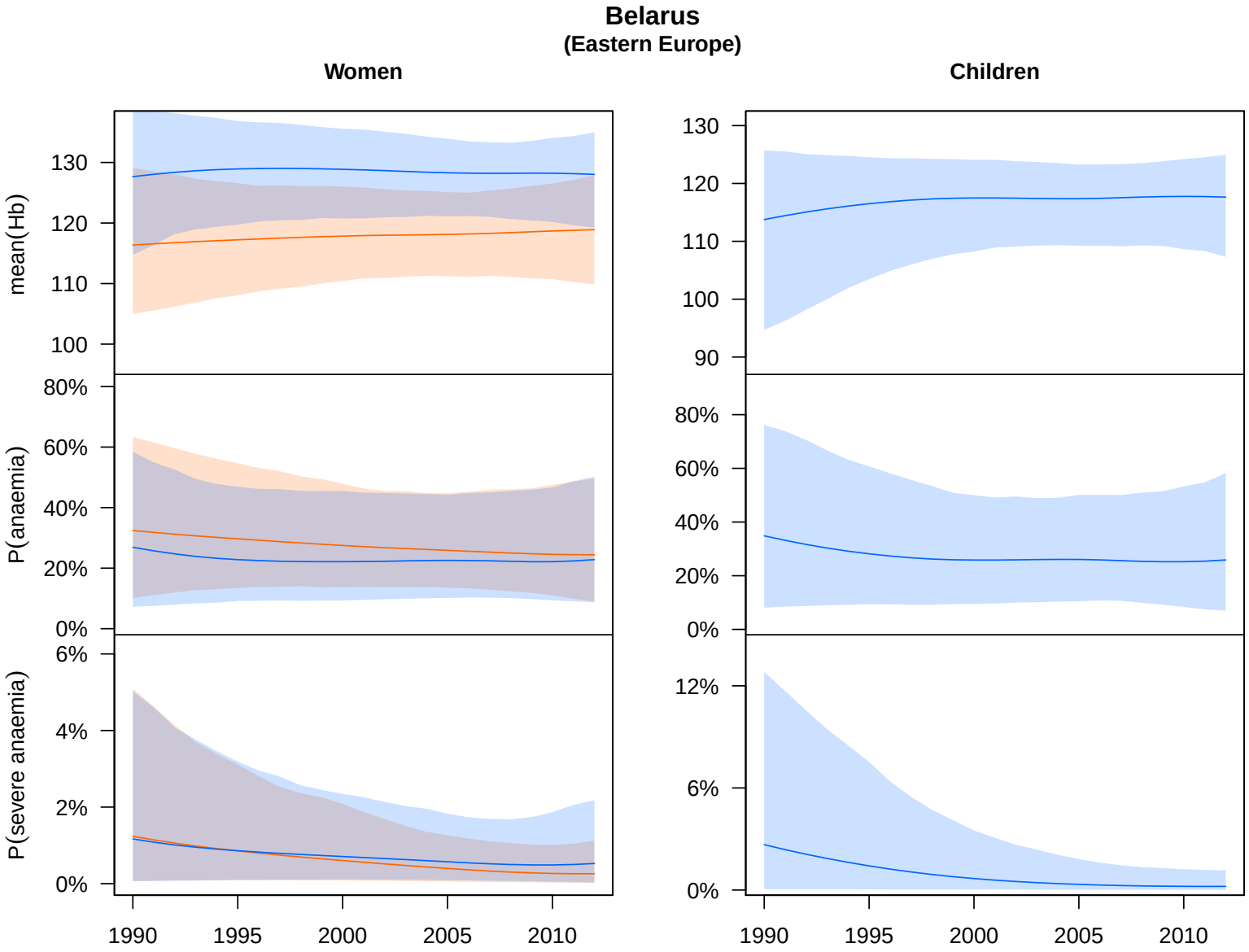
(Andean and Central Latin America and Caribbean)

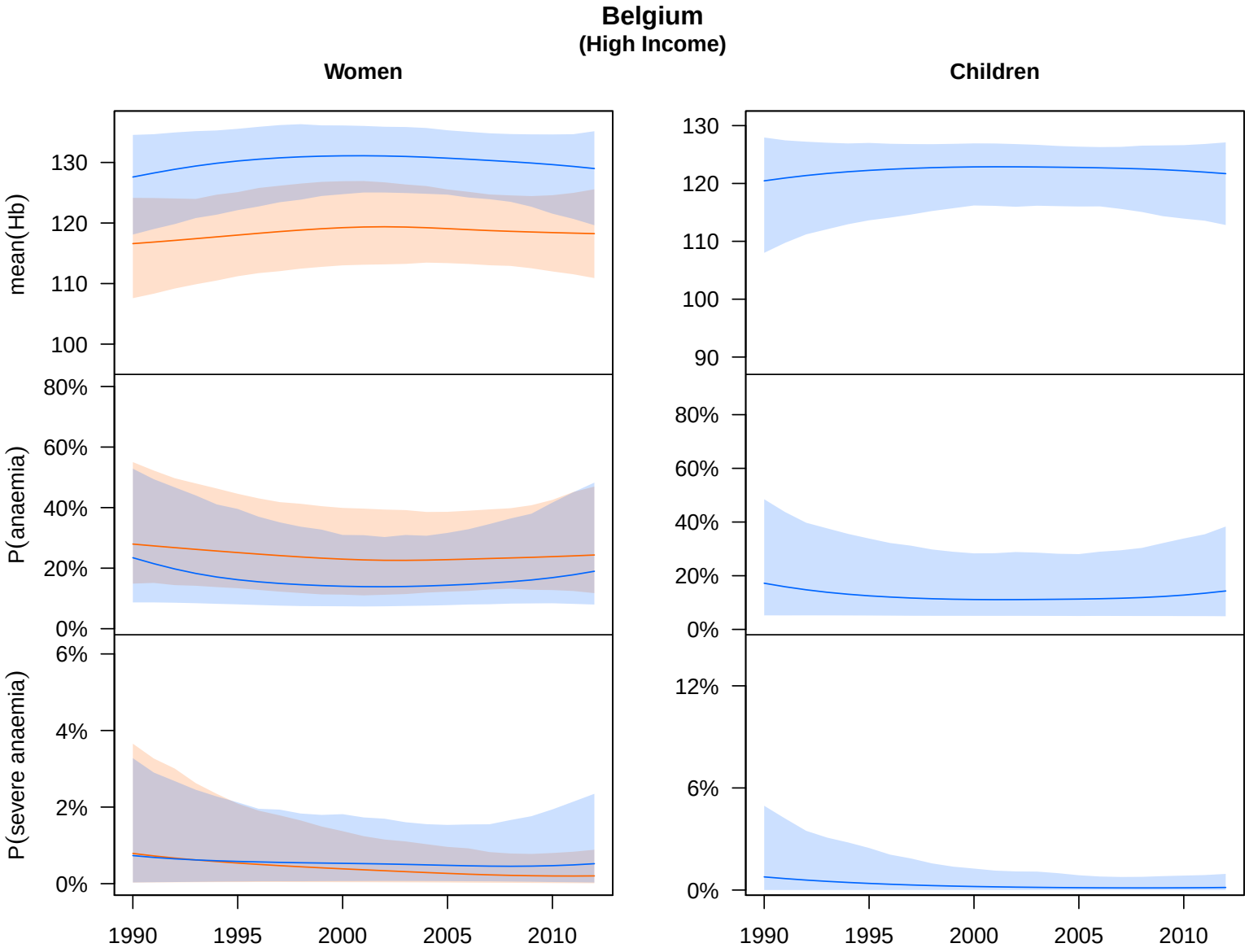


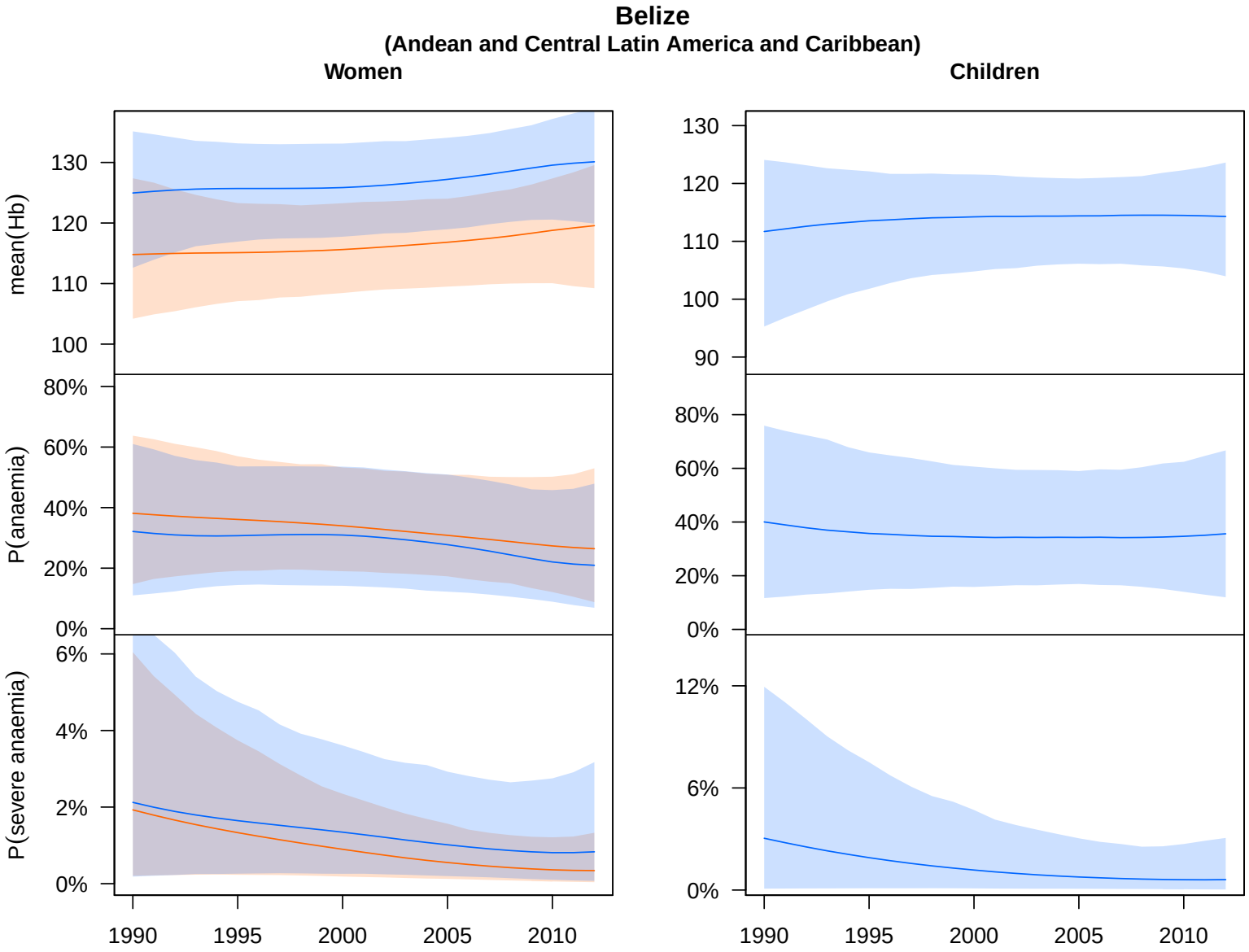

Bahrain
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

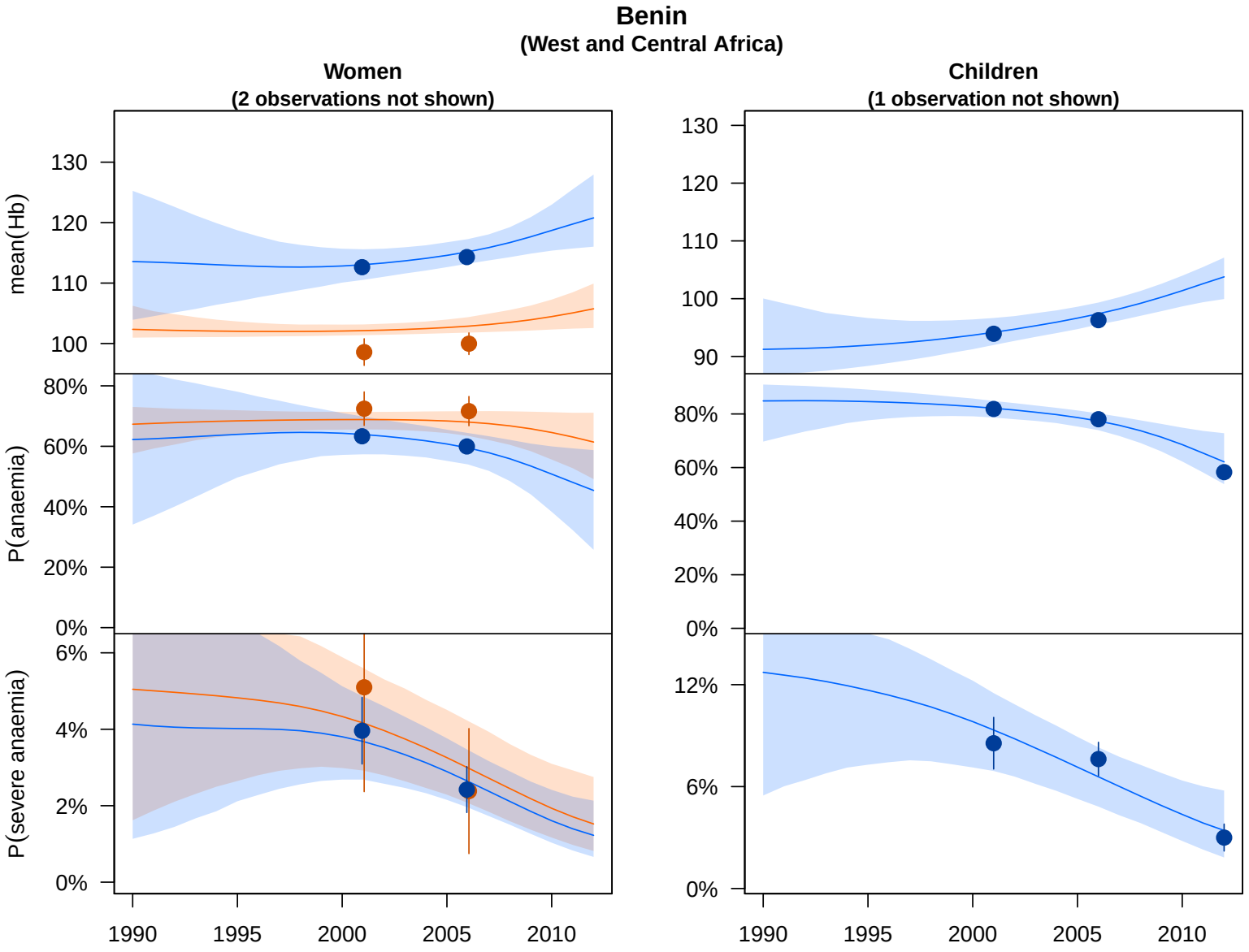

Bangladesh
(South Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

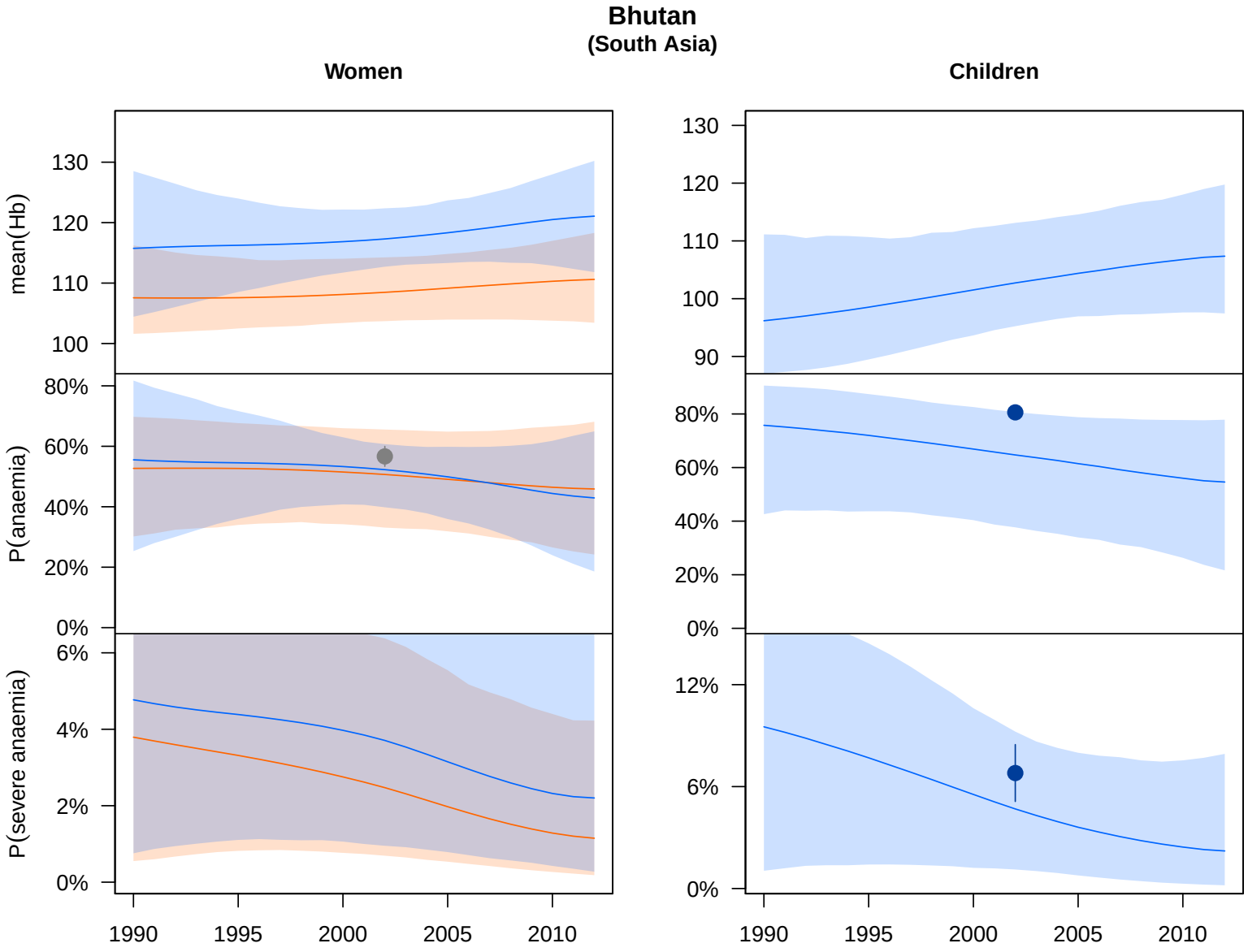

Barbados
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

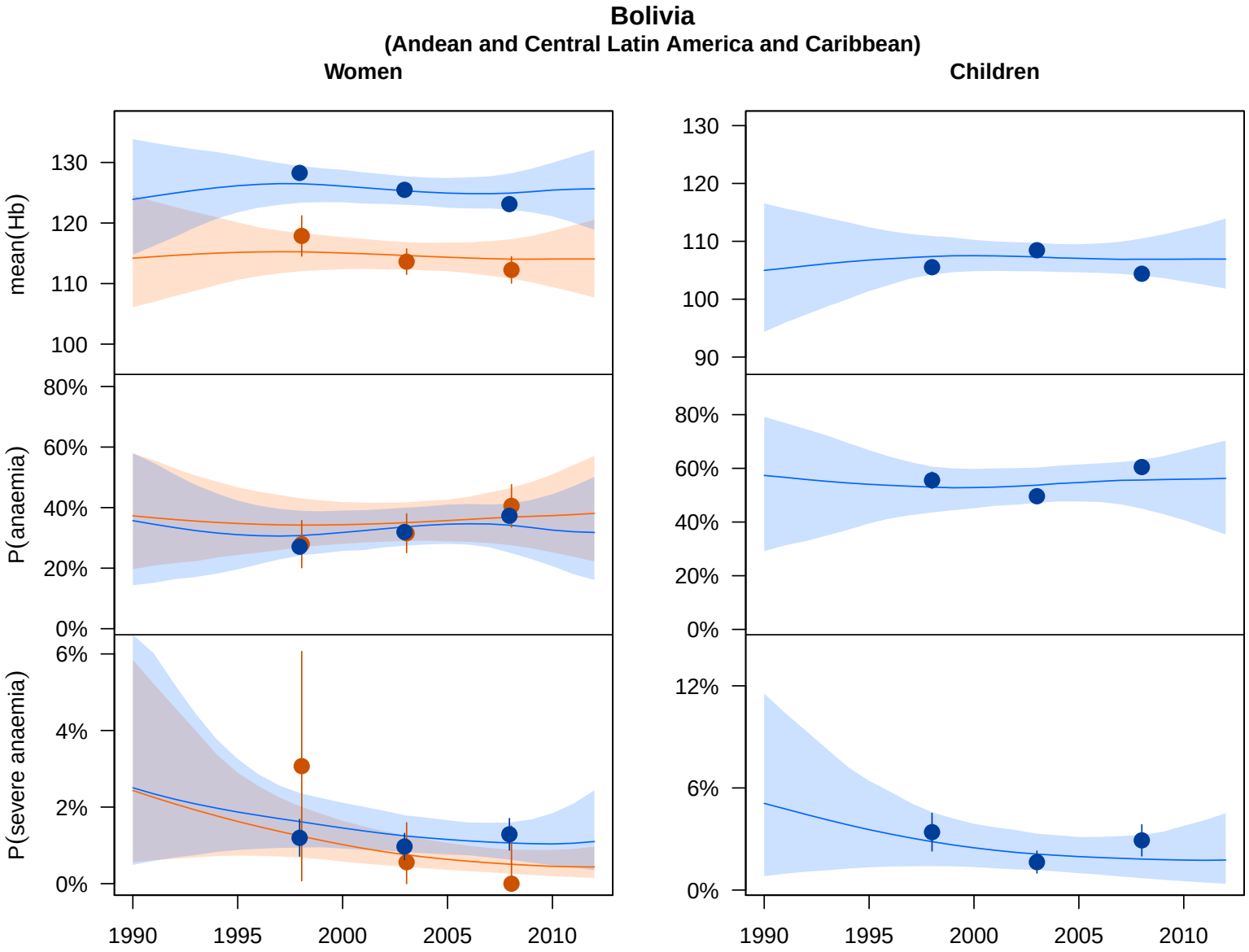

Belarus
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Belgium
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

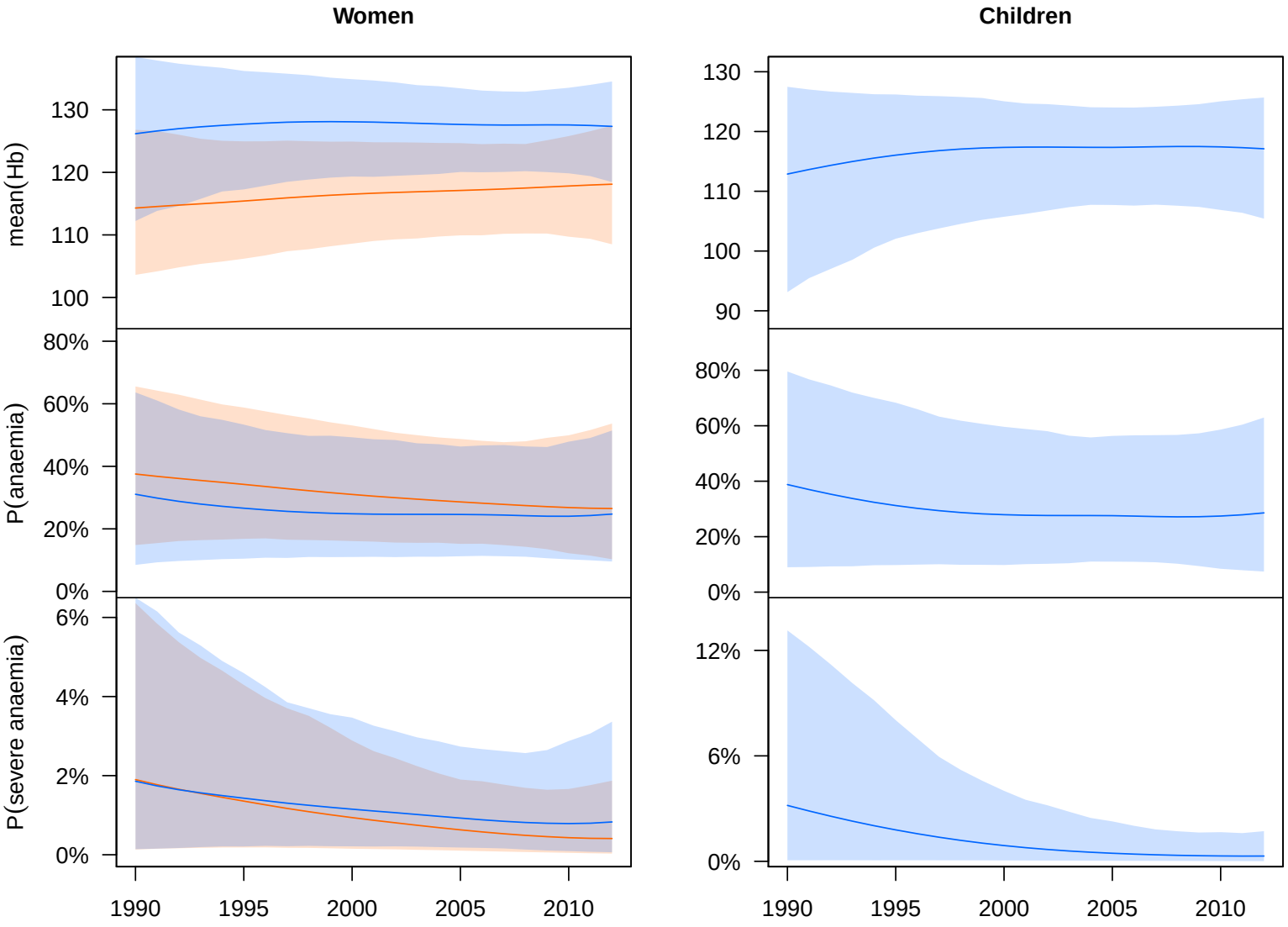

Belize
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

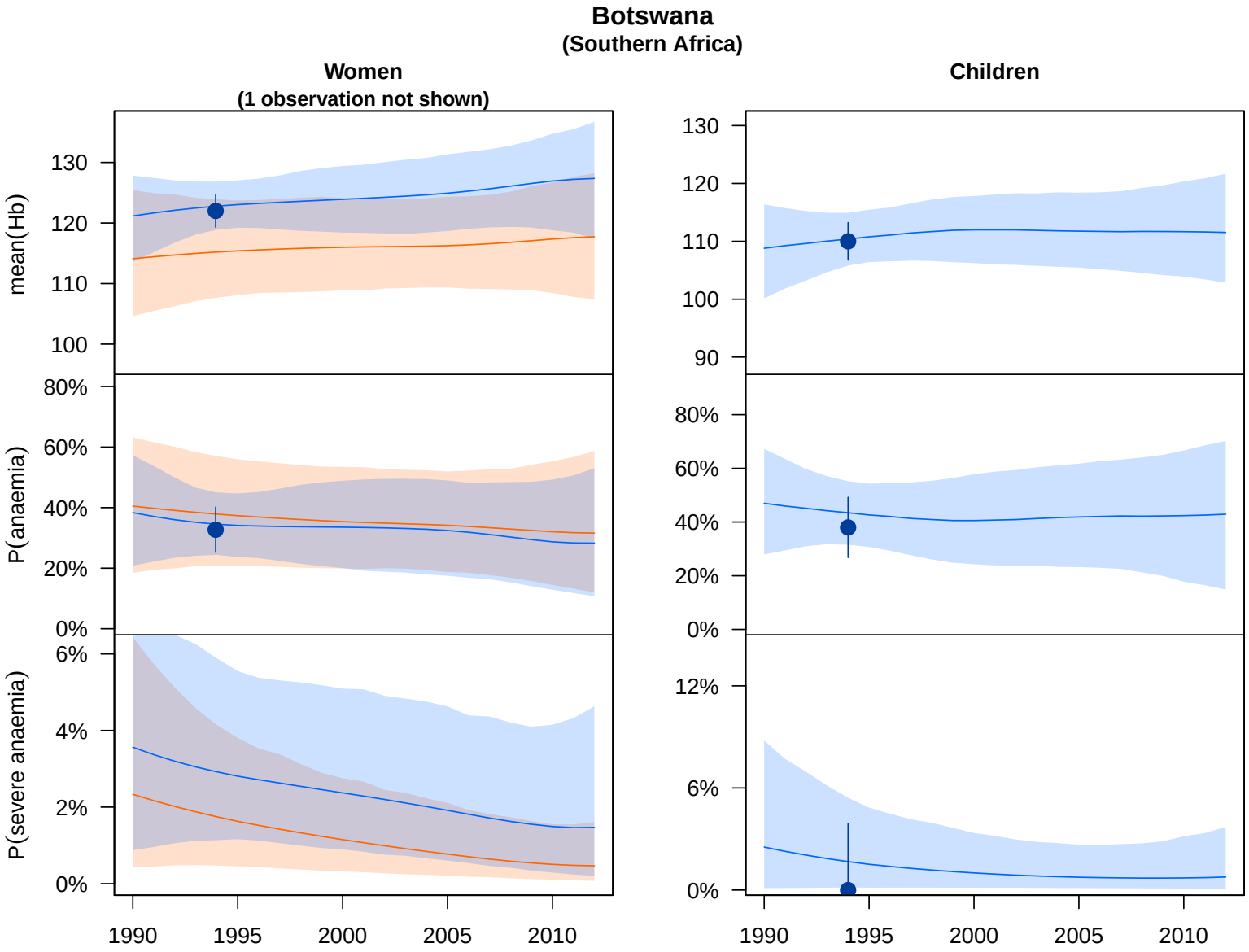

Benin
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

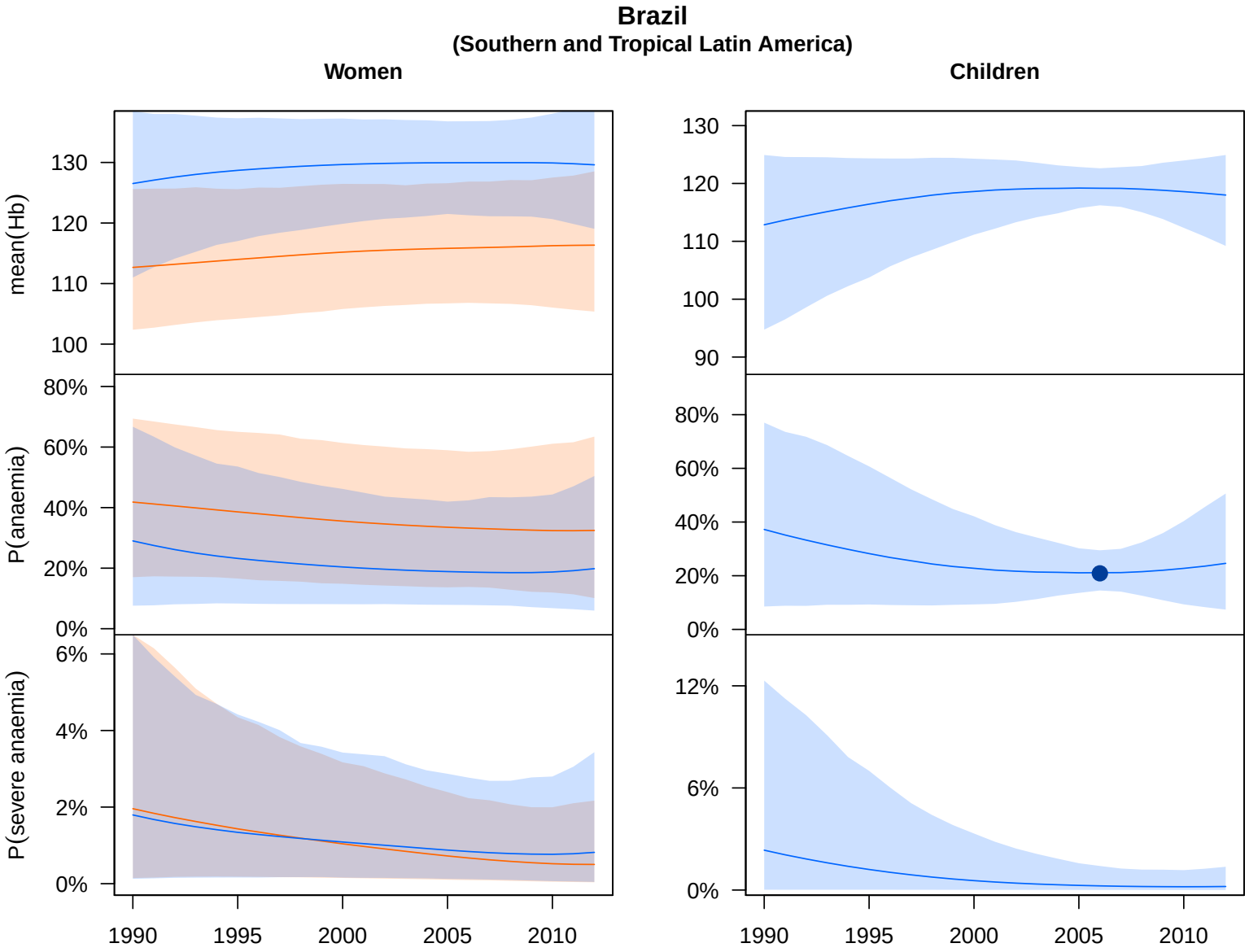

Bhutan
(South Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

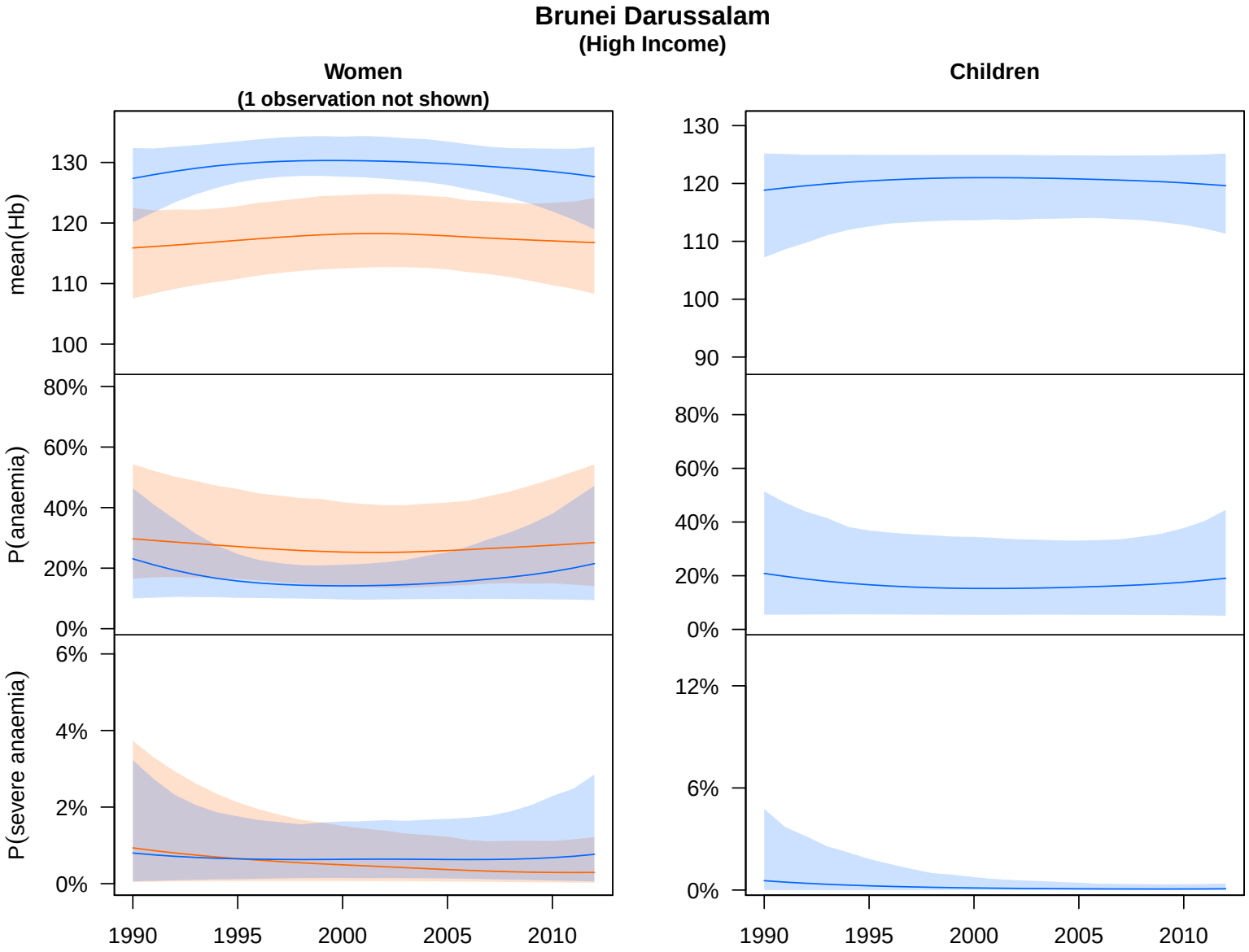

Bolivia
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

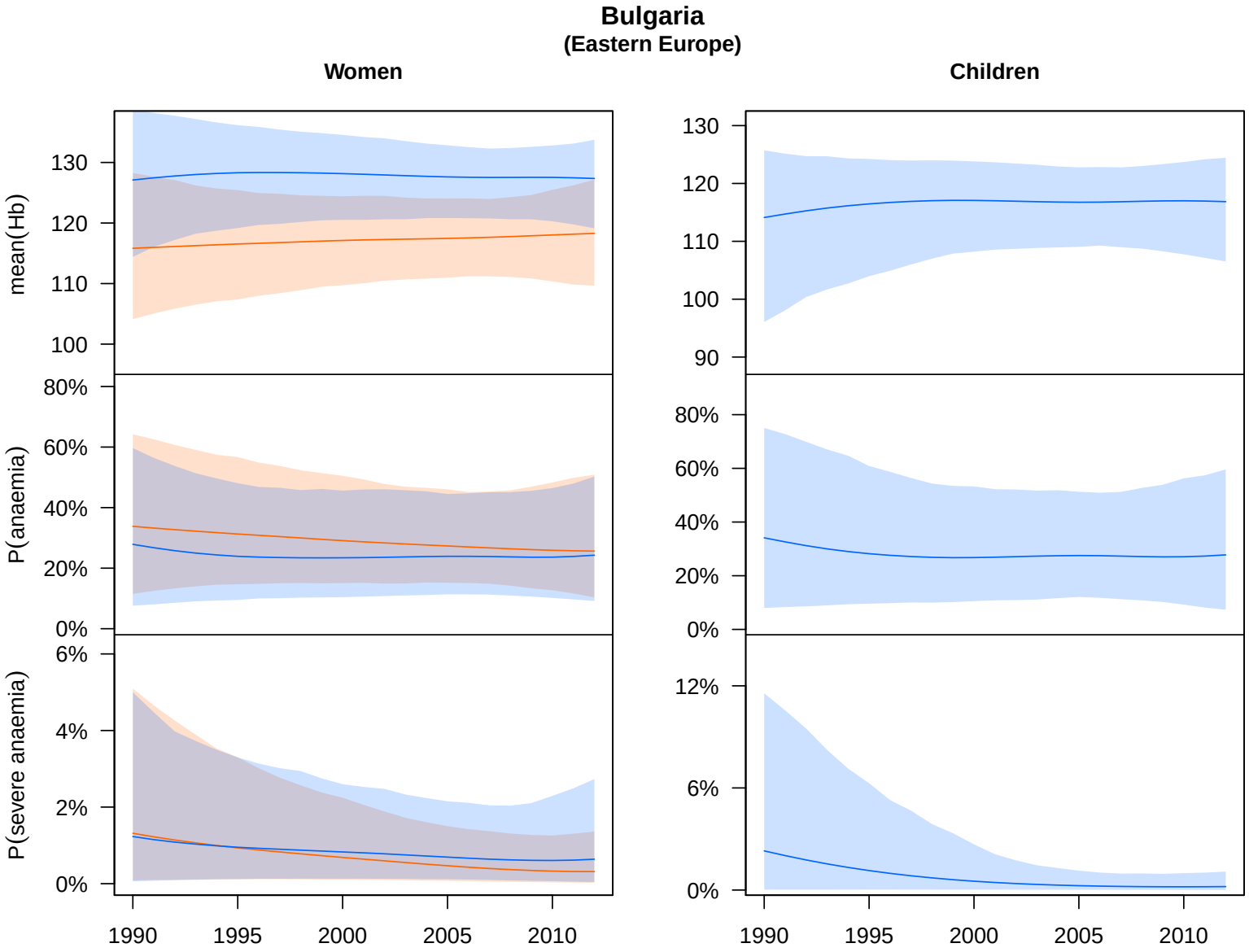
Bosnia and Herzegovina
(Eastern Europe)

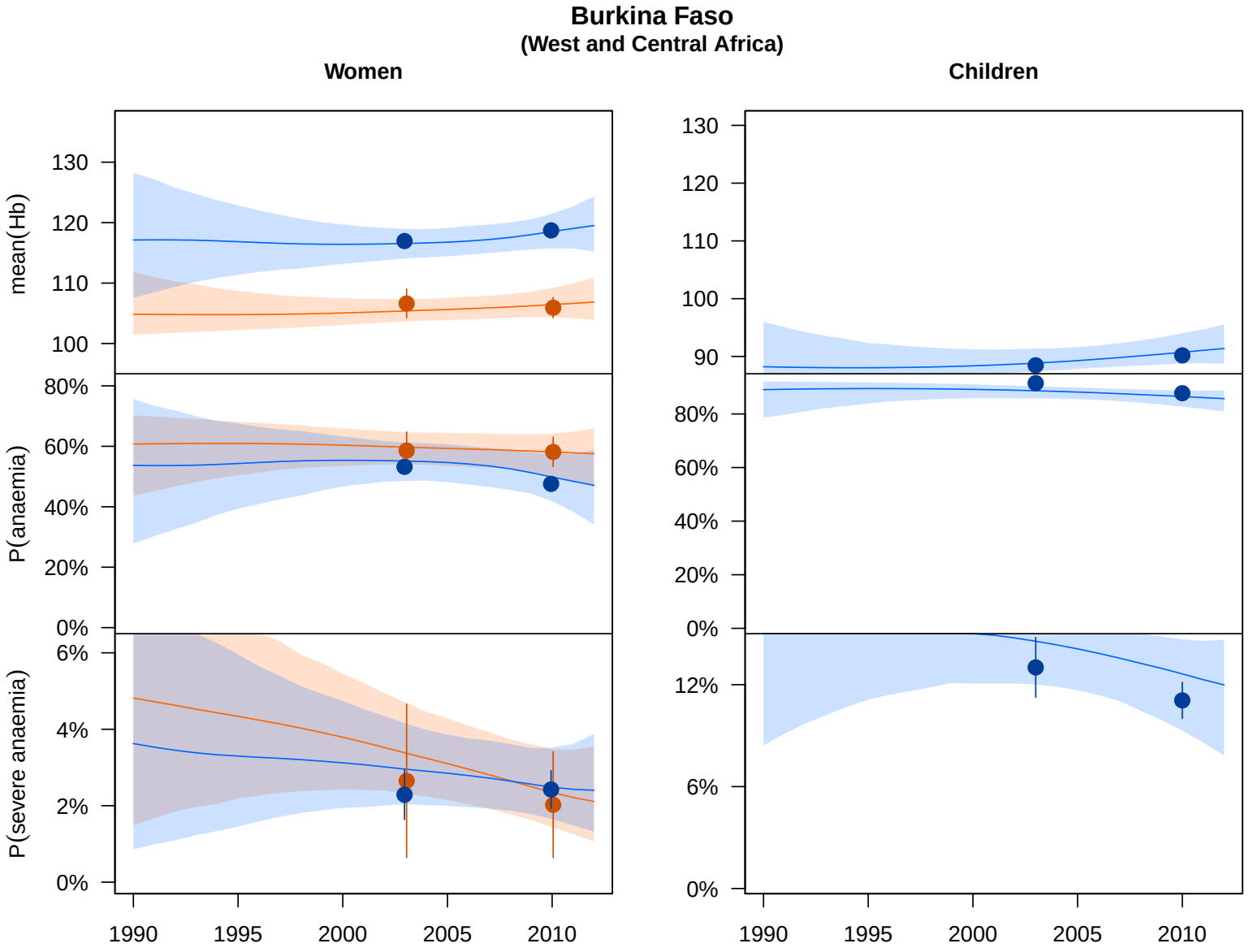


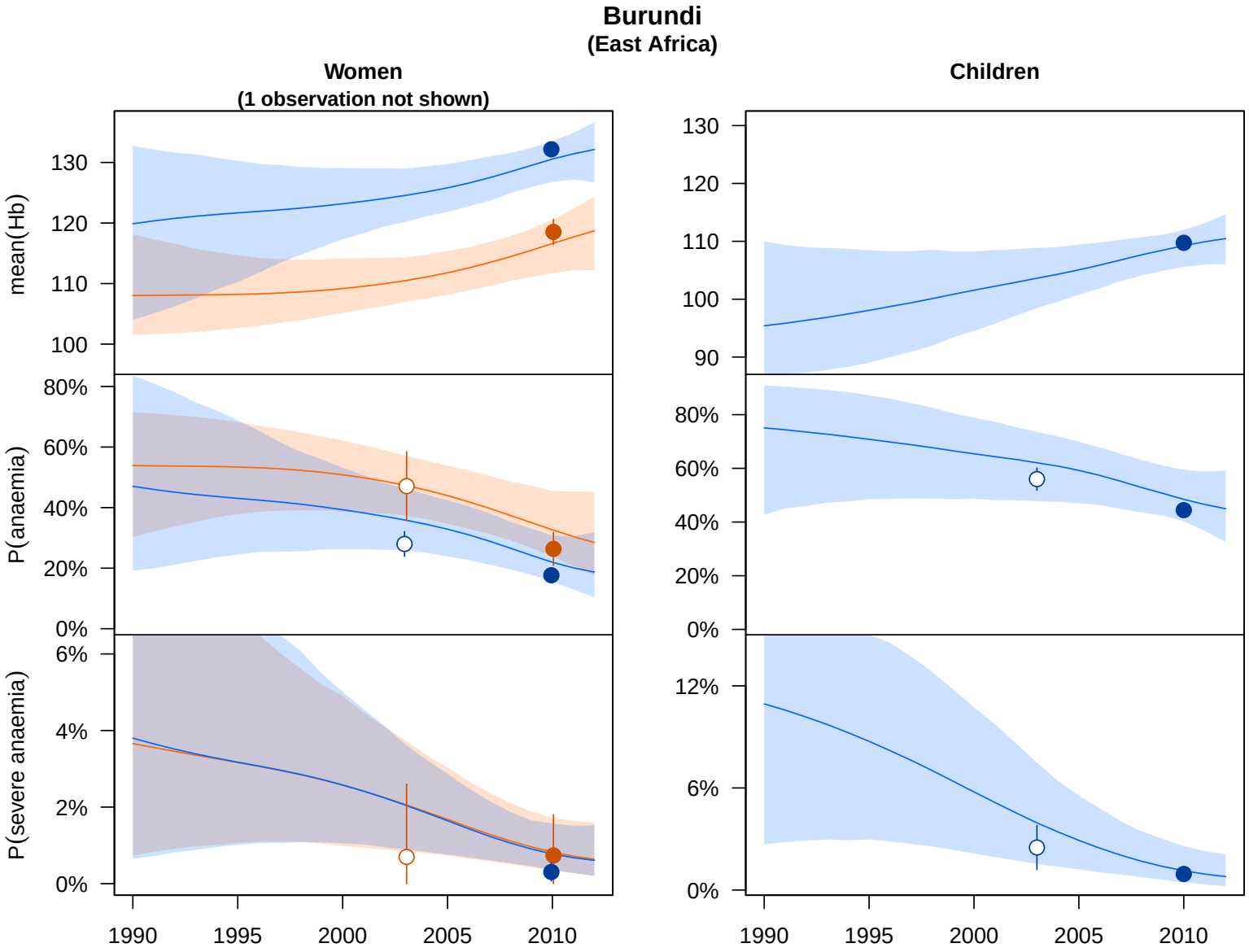

Botswana
(Southern Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

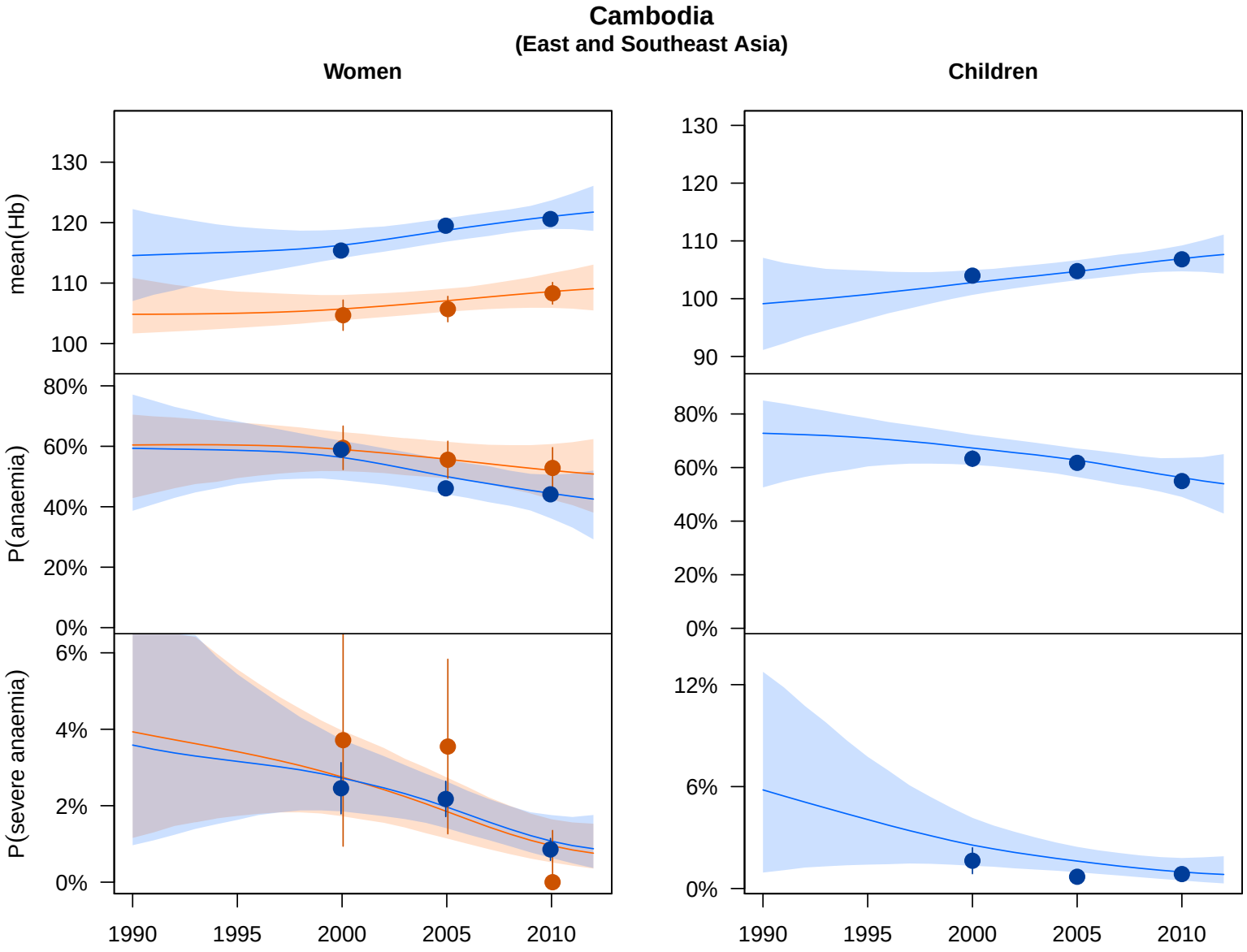

Brazil
(Southern and Tropical Latin America)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

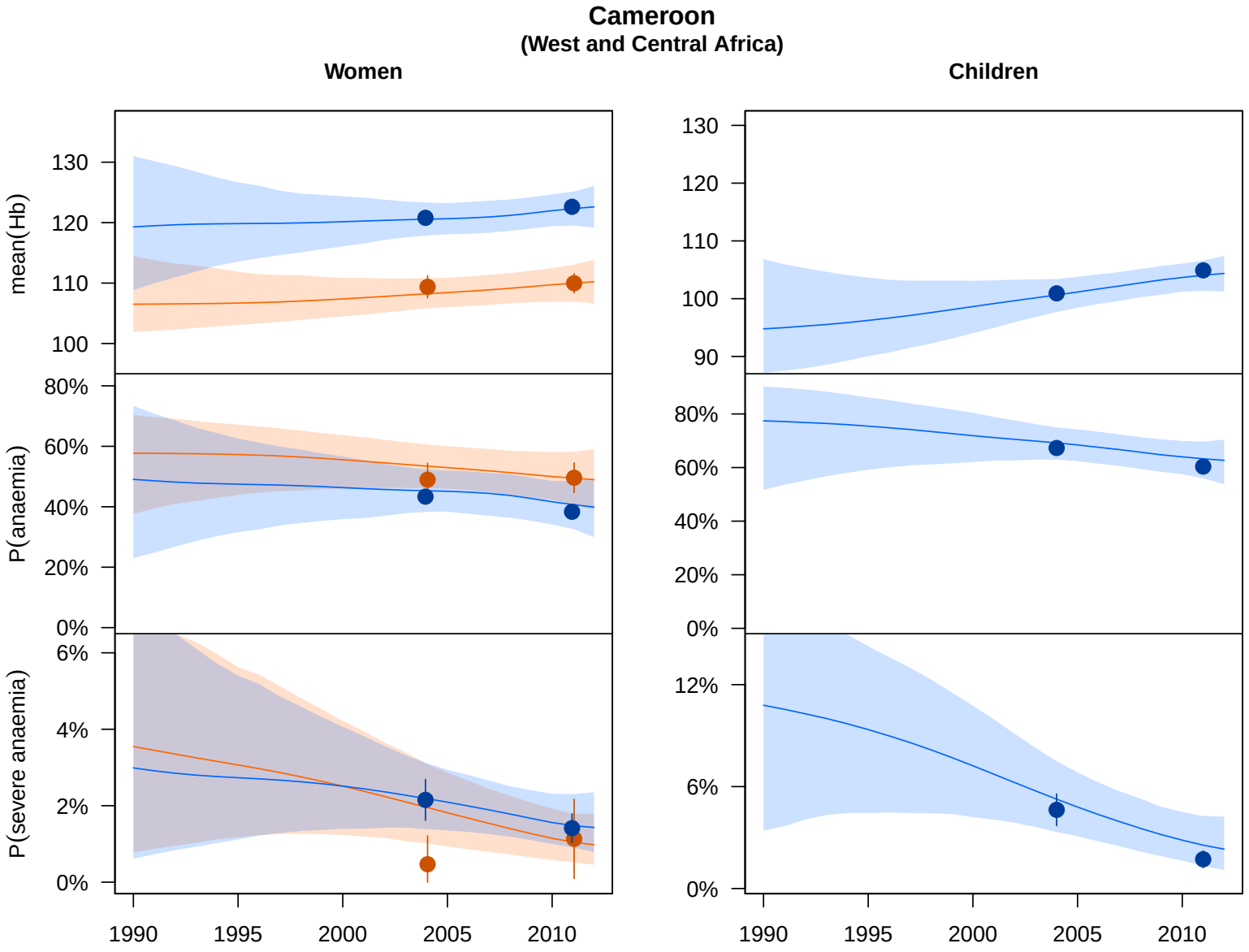

Brunei Darussalam
(High Income)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

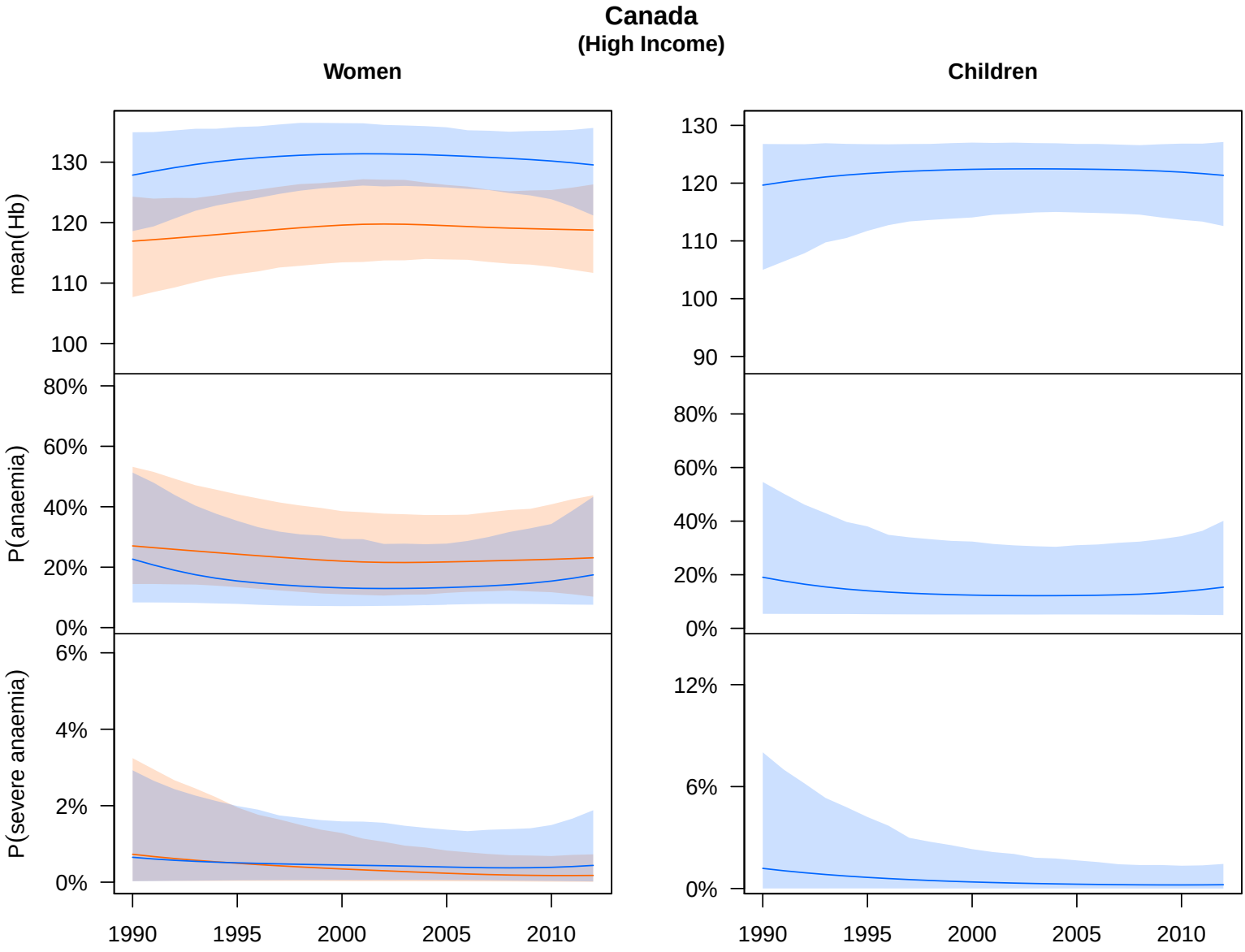

Bulgaria
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Burkina Faso
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

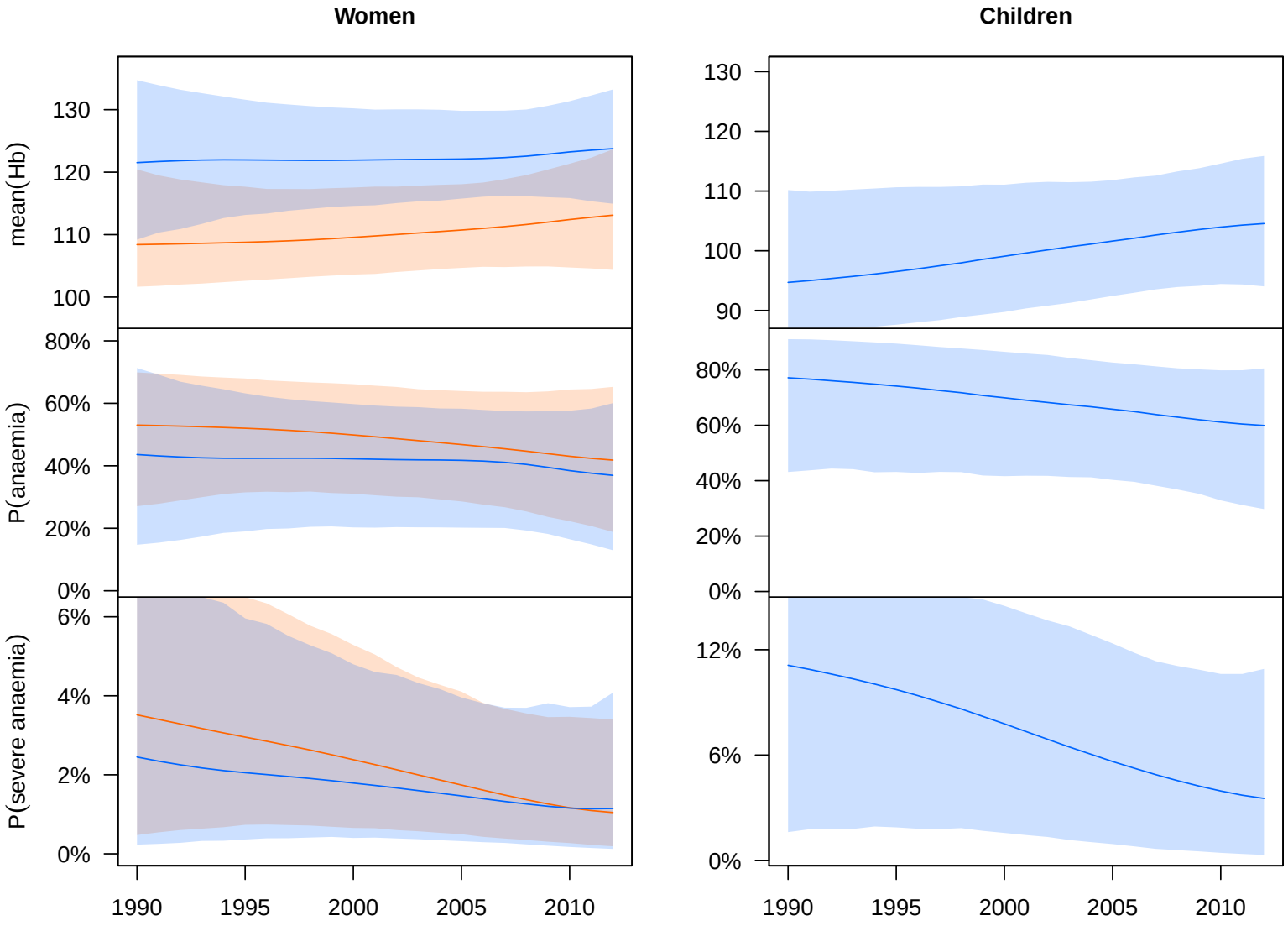

Burundi
(East Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

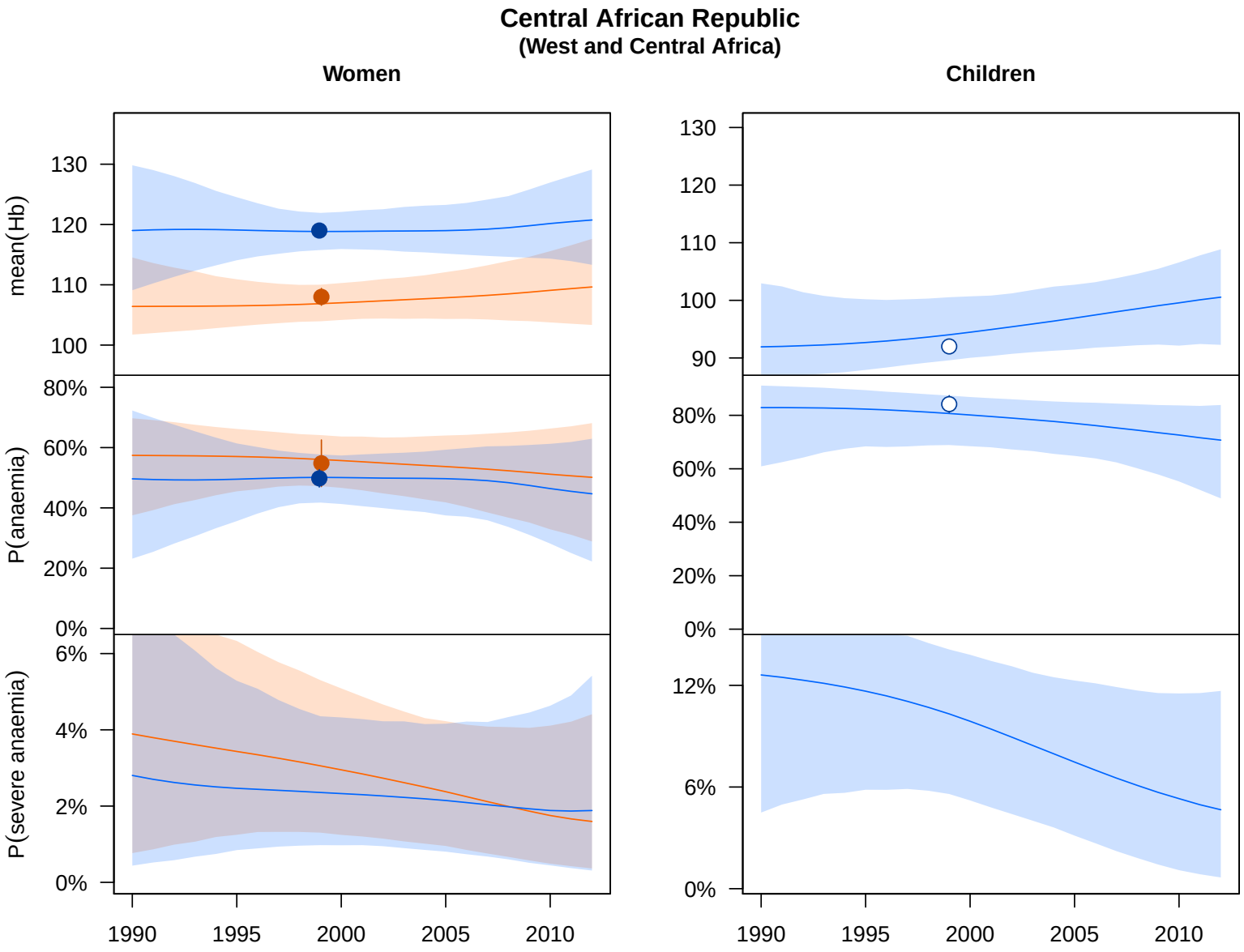

Cambodia
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

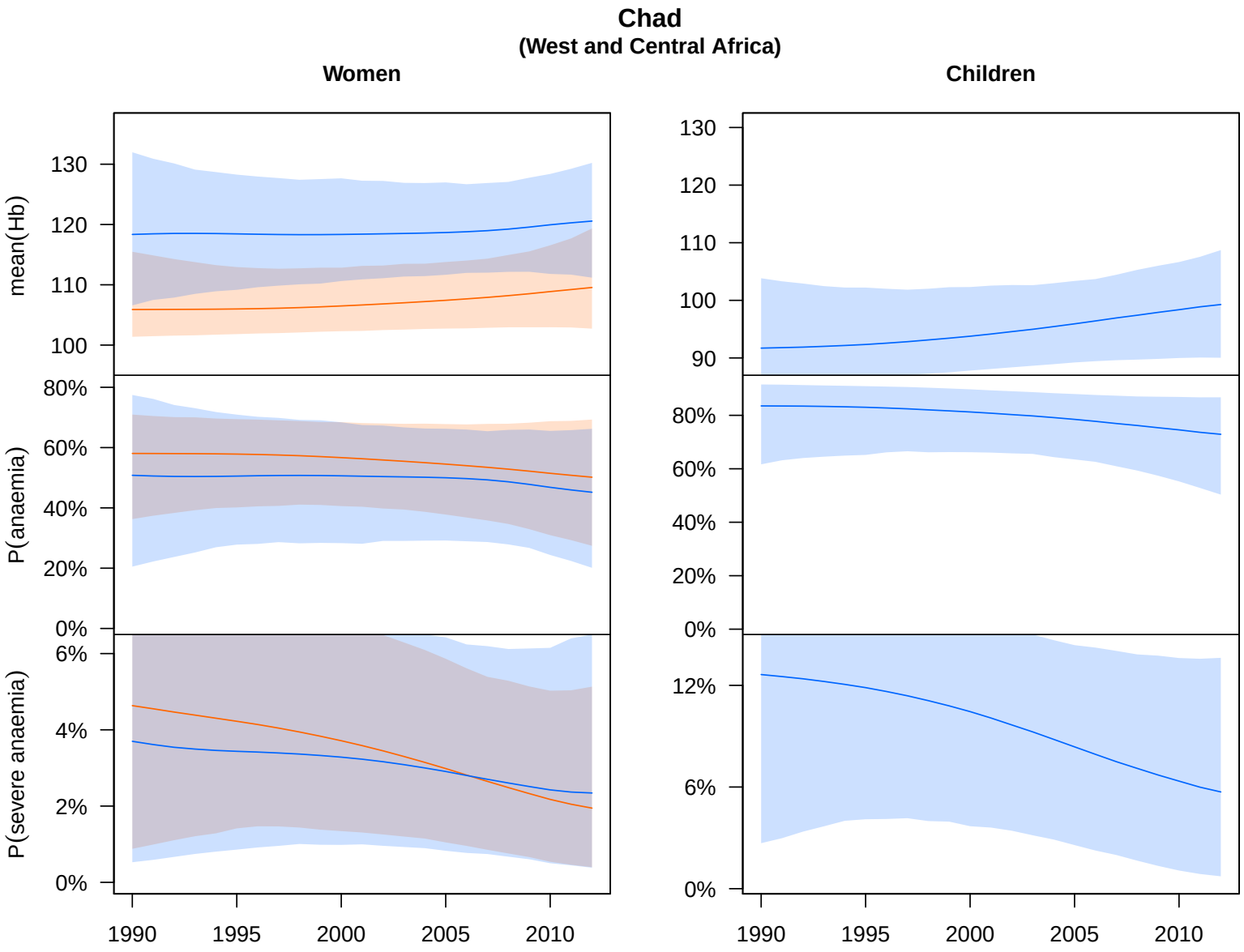

Cameroon
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

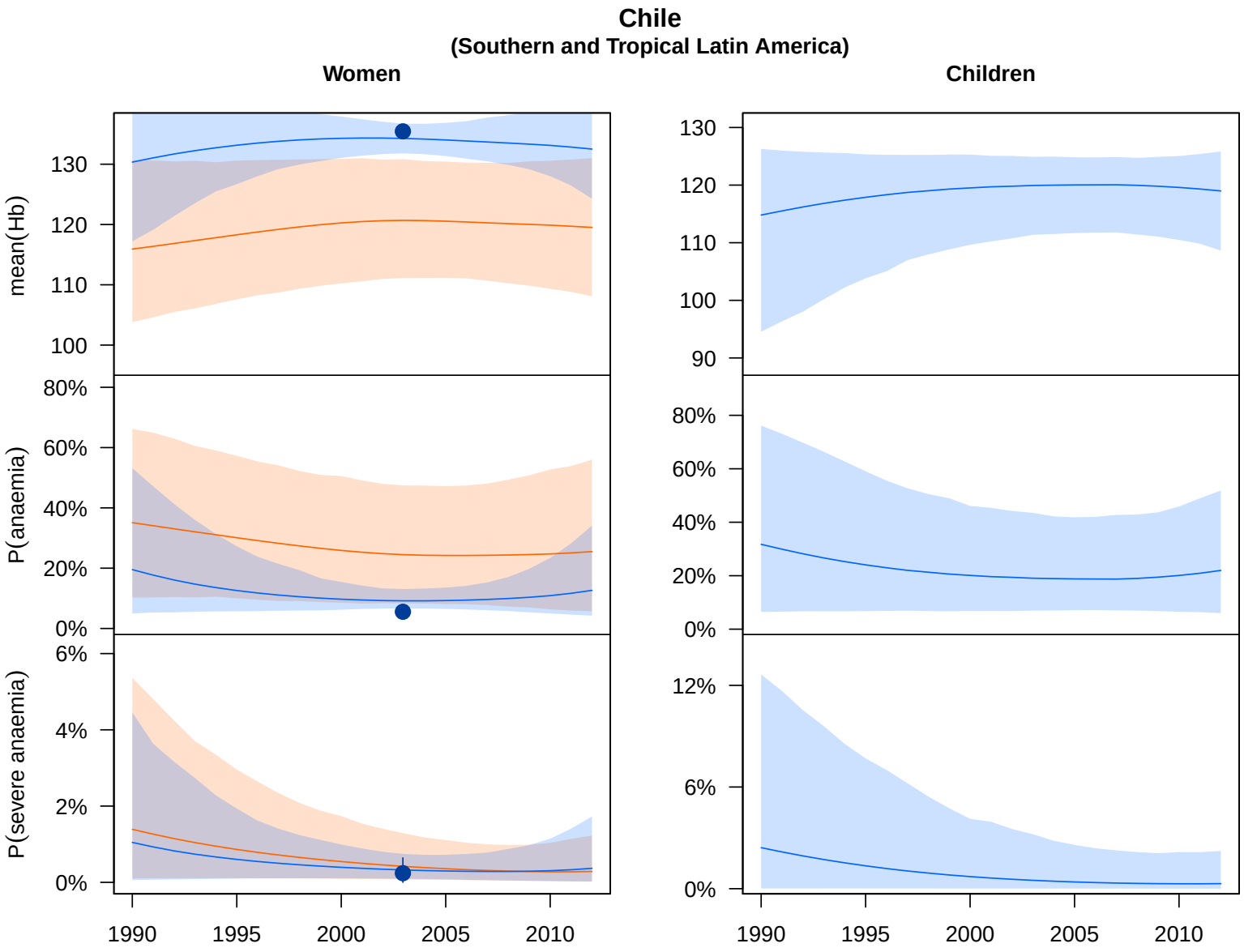

Canada
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

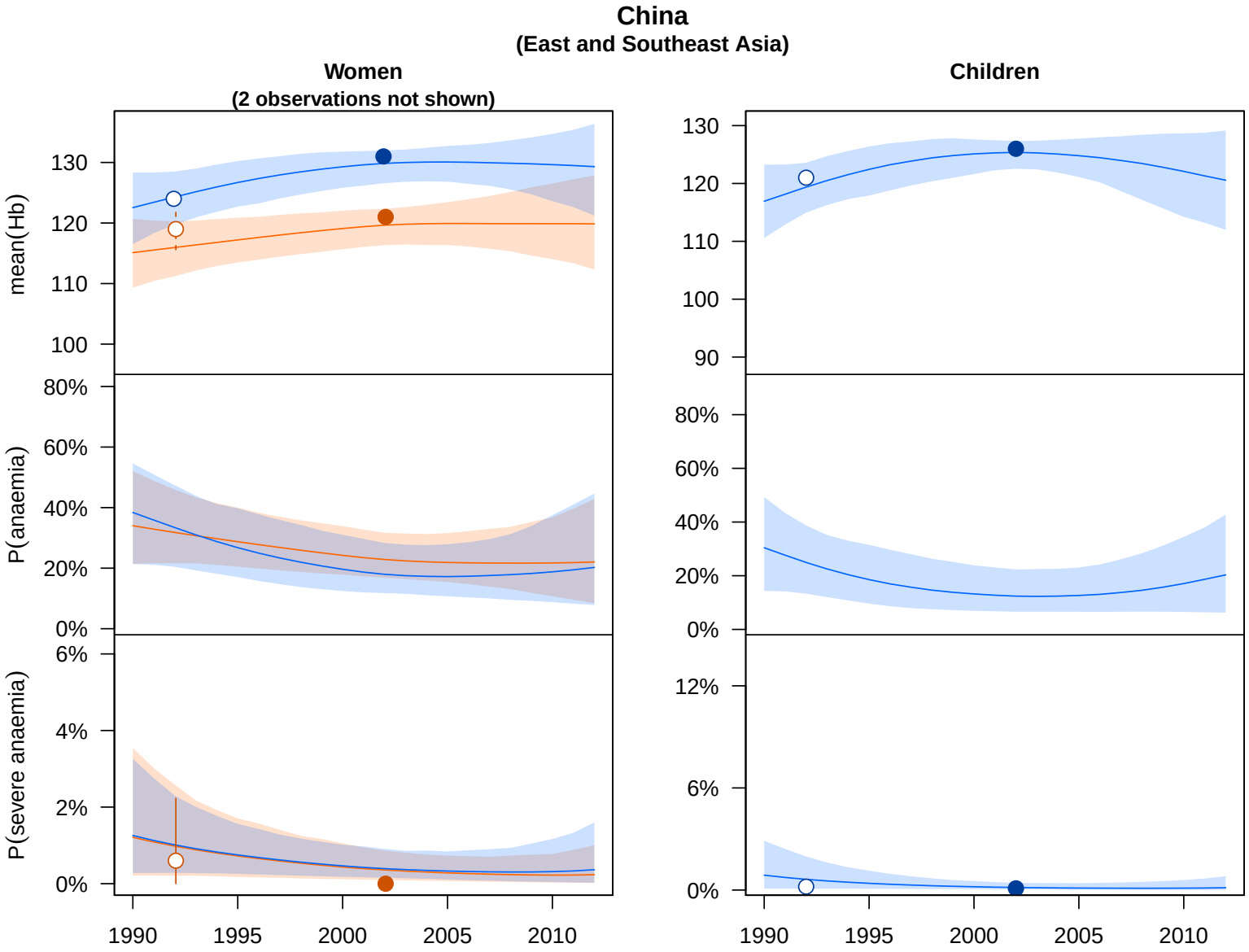
Cape Verde
(West and Central Africa)

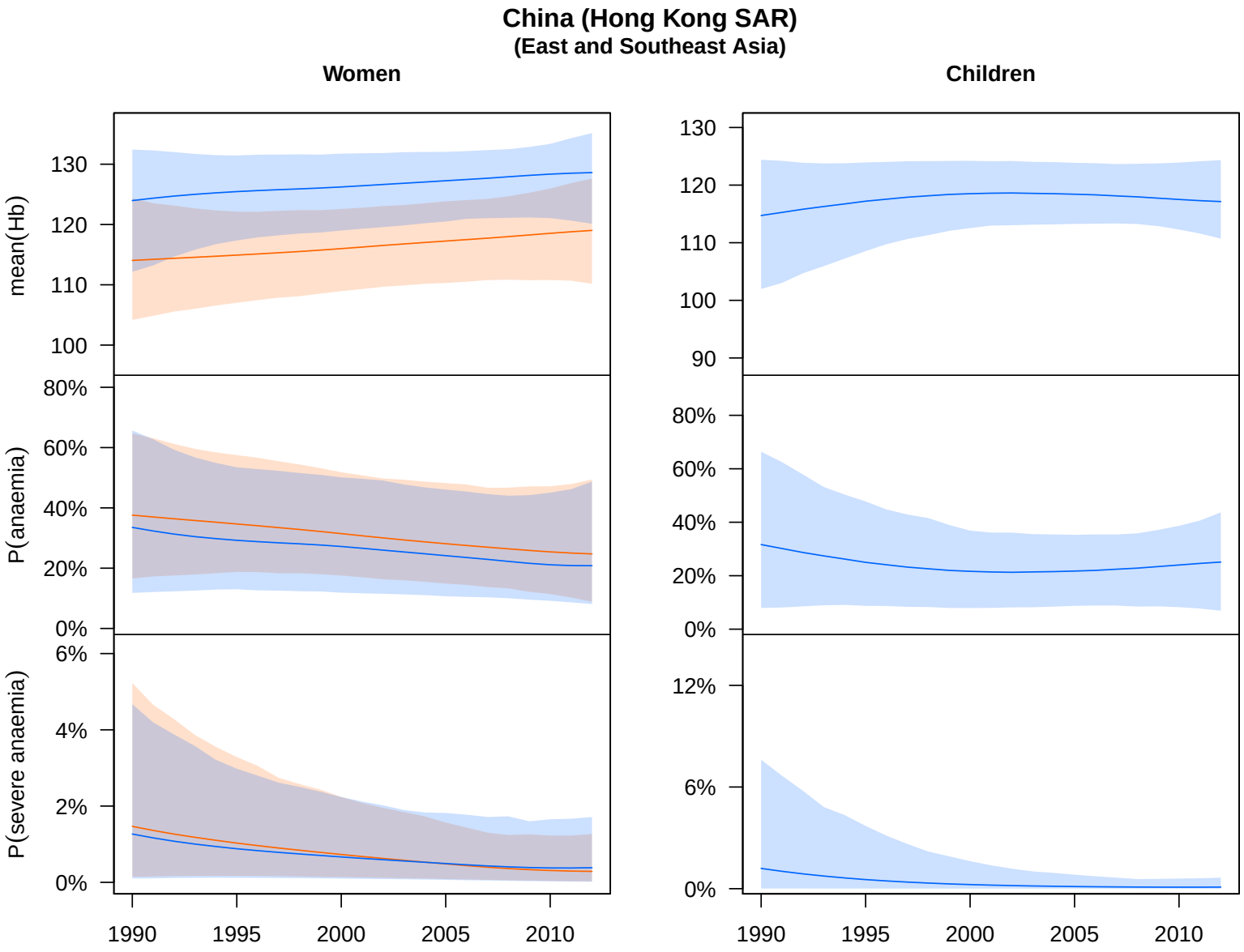


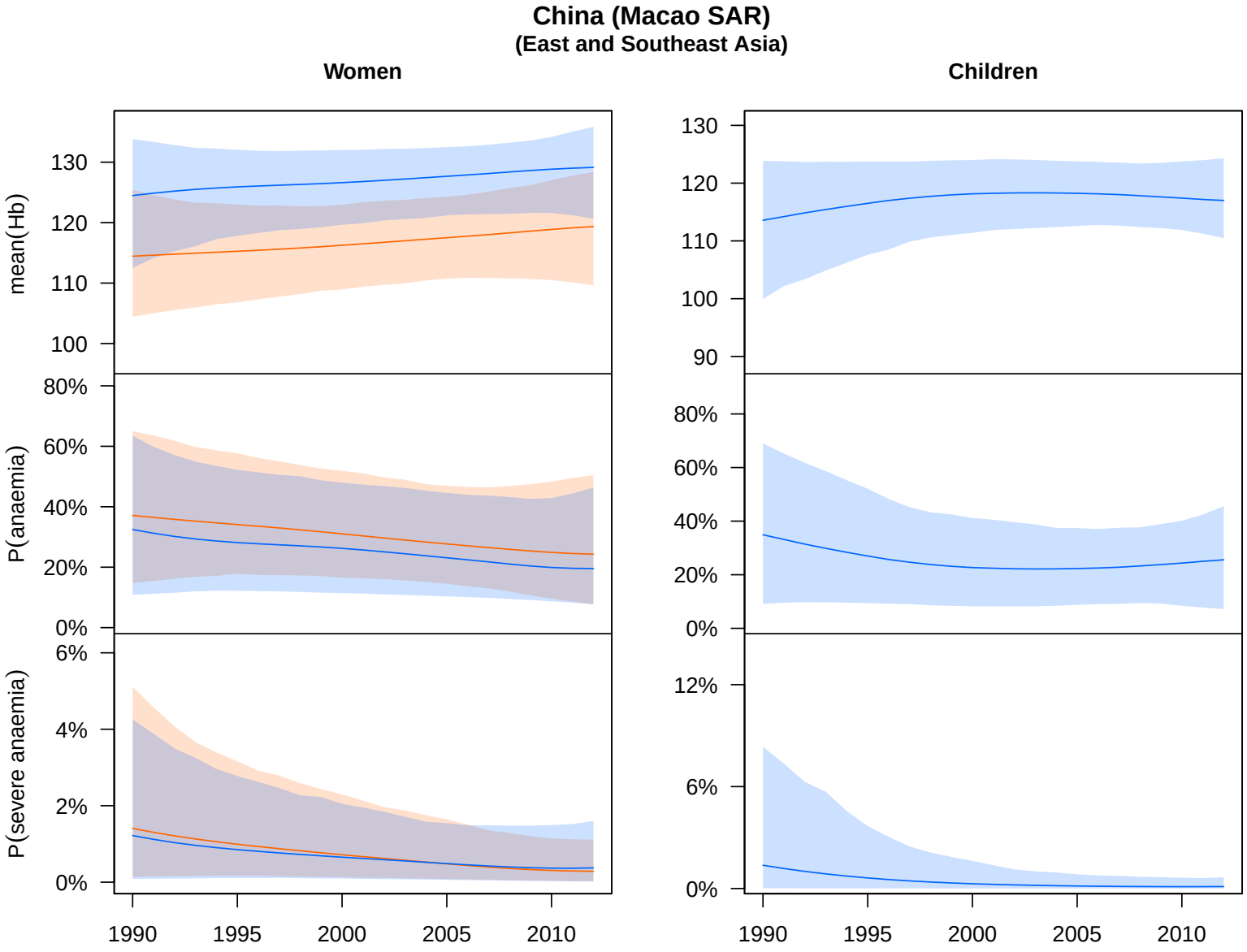

Central African Republic
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

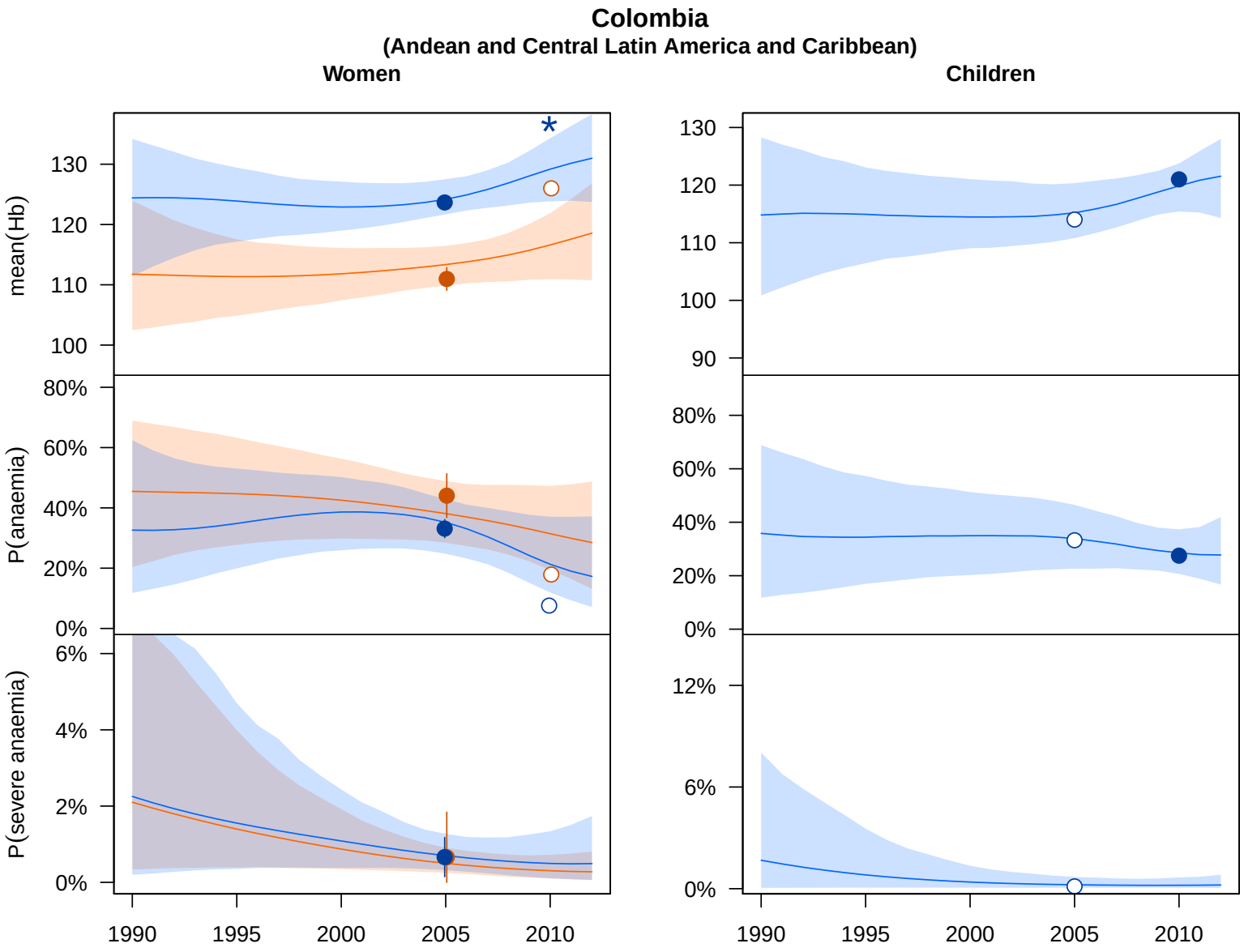

Chad
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

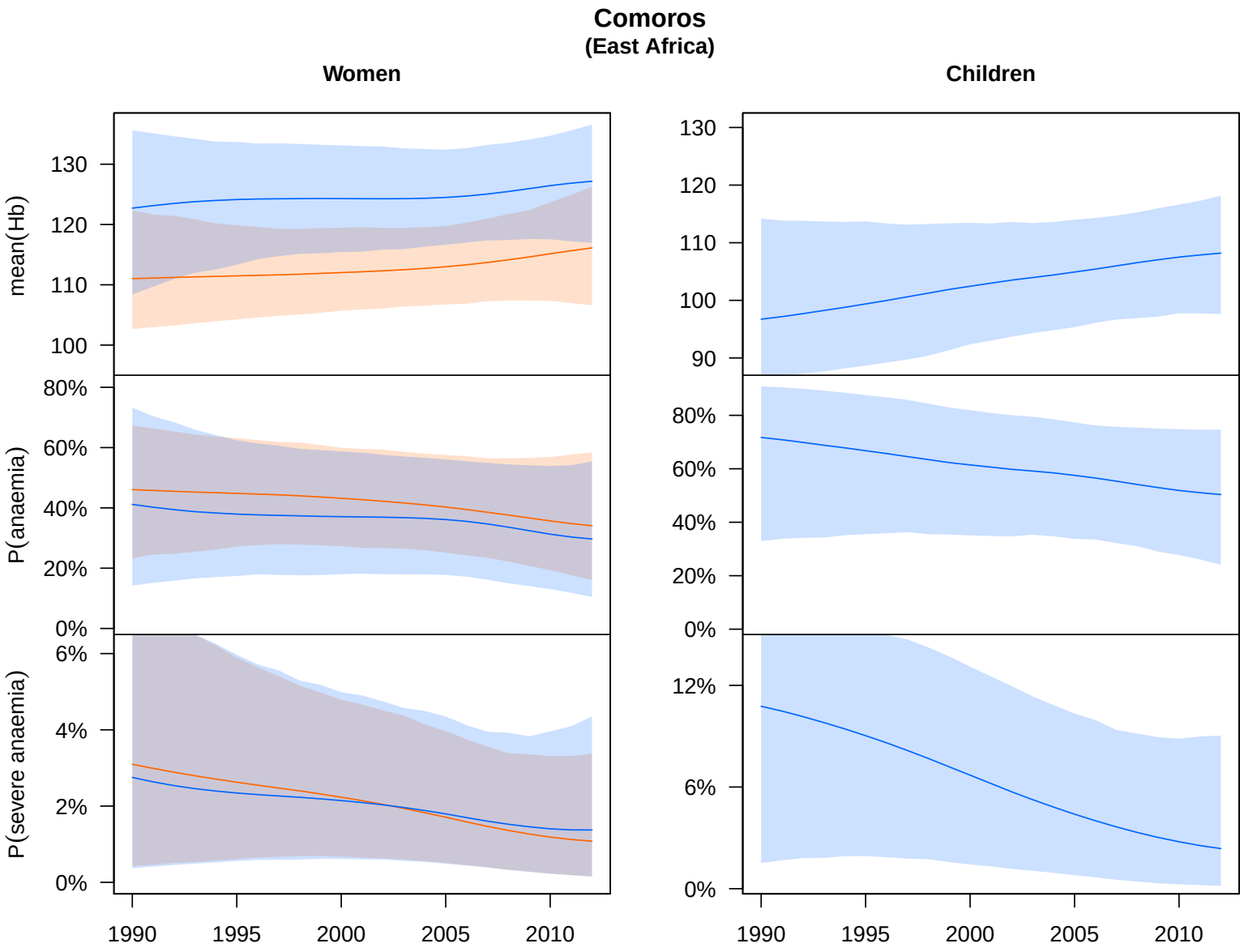

Chile
(Southern and Tropical Latin America)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

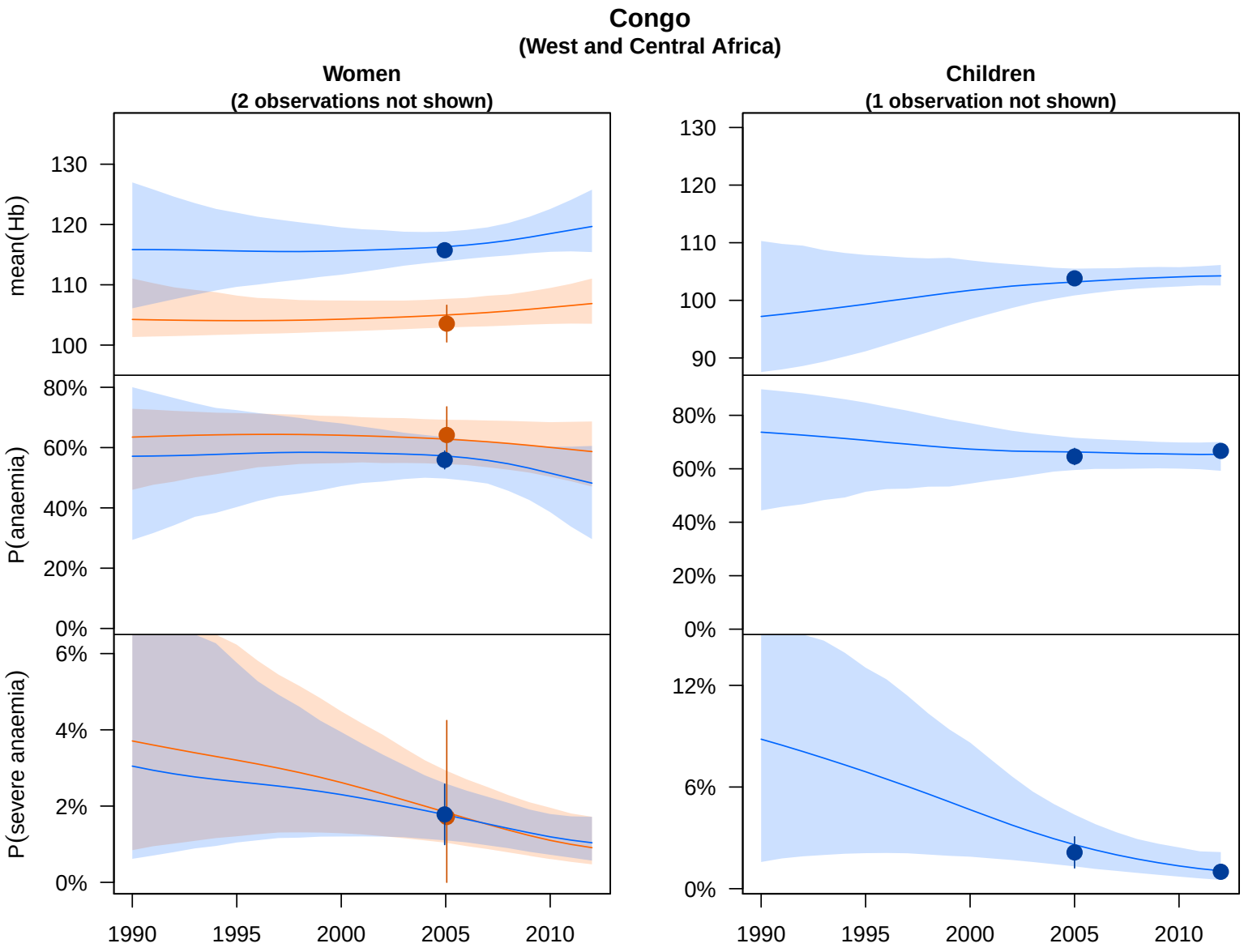

China
(East and Southeast Asia)
Women
(2 observations not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

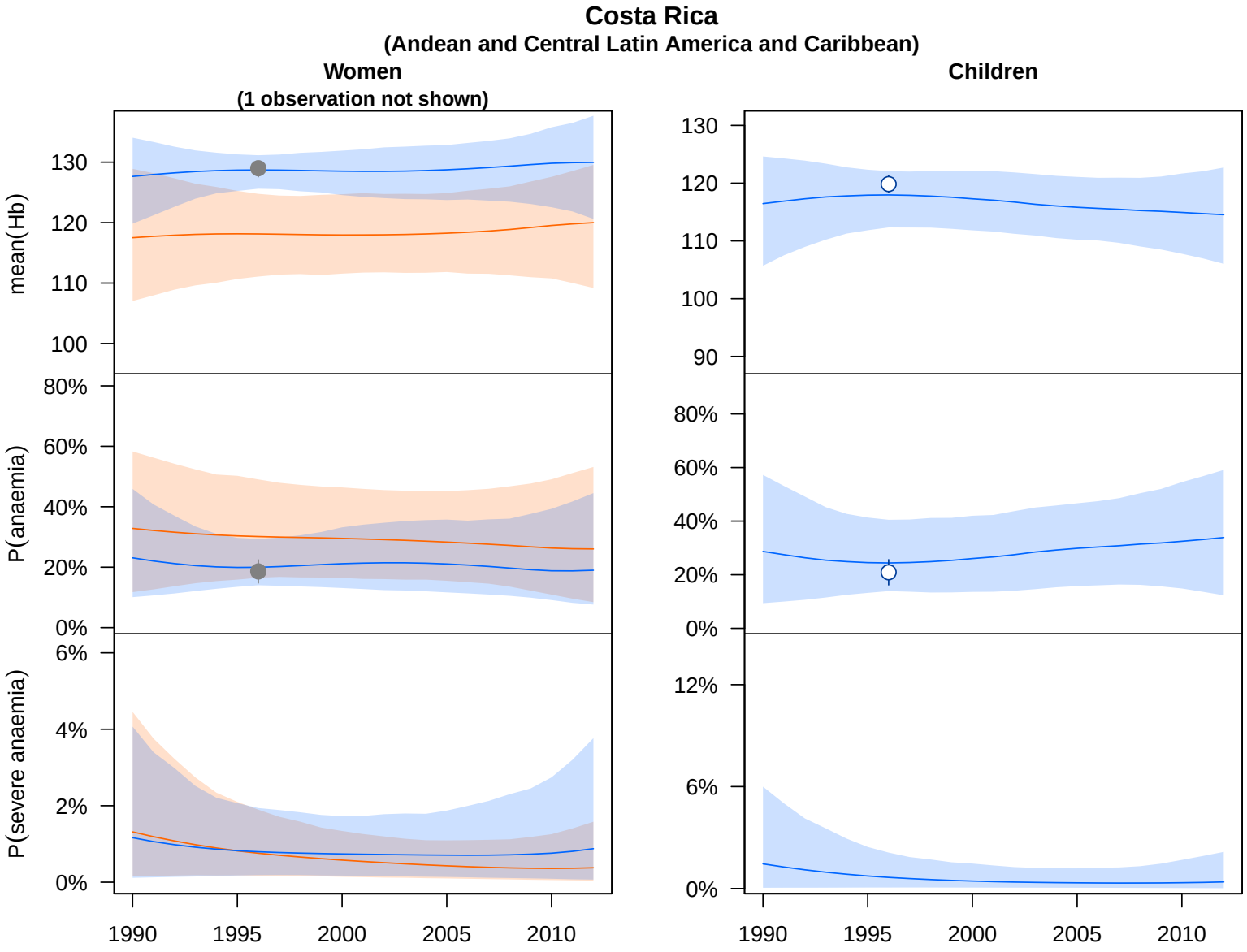

China (Hong Kong SAR)
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

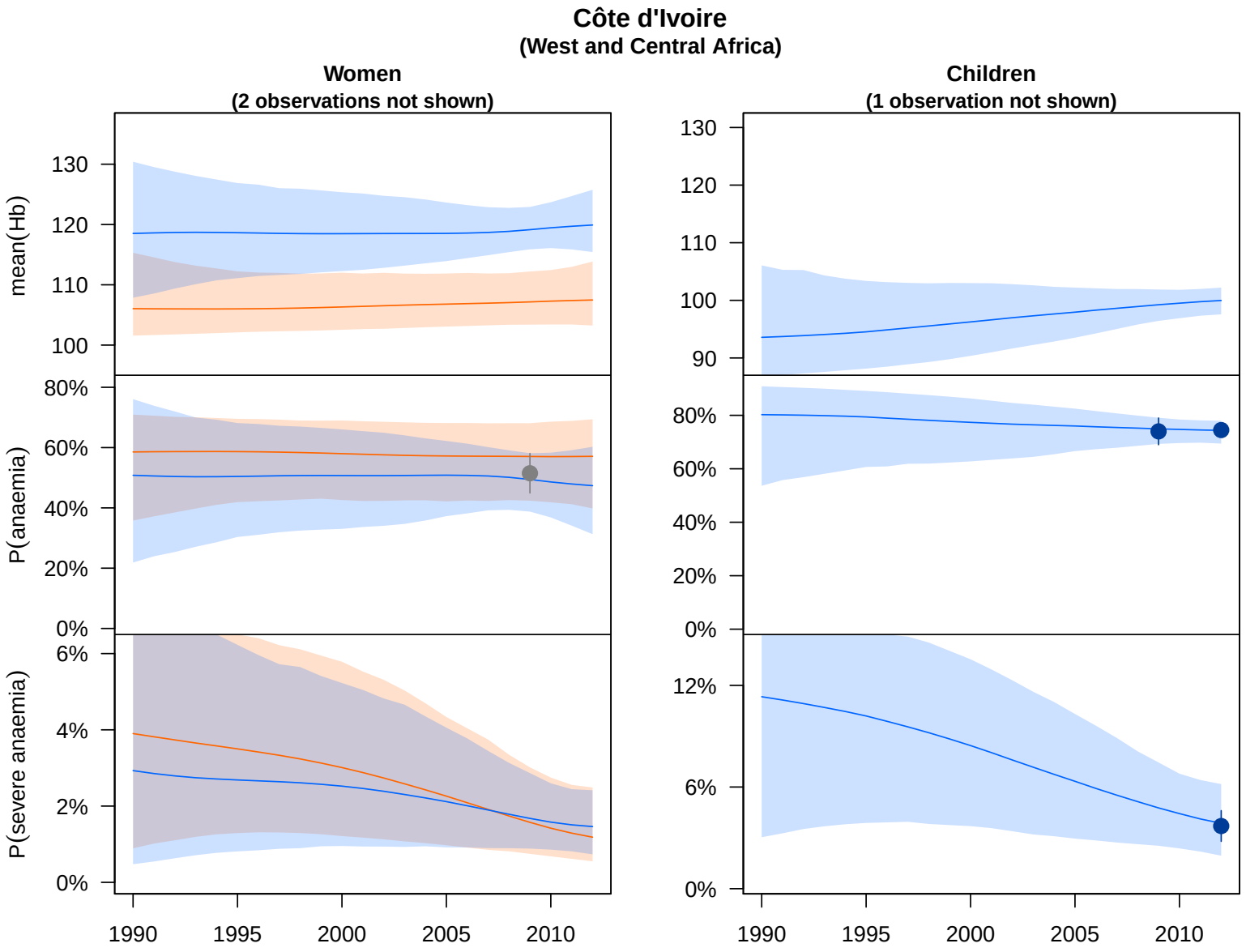

China (Macao SAR)
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

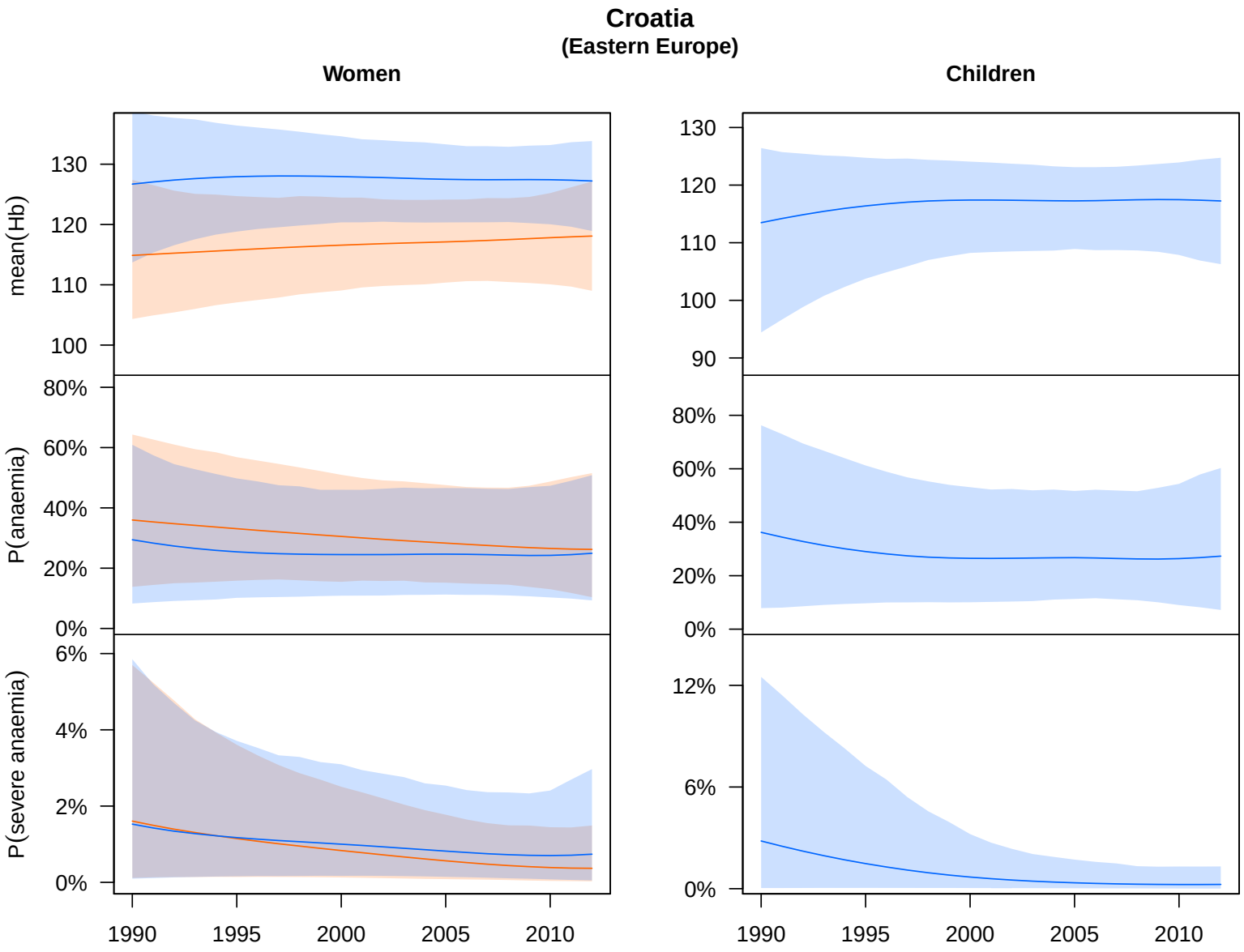

Colombia
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
*
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

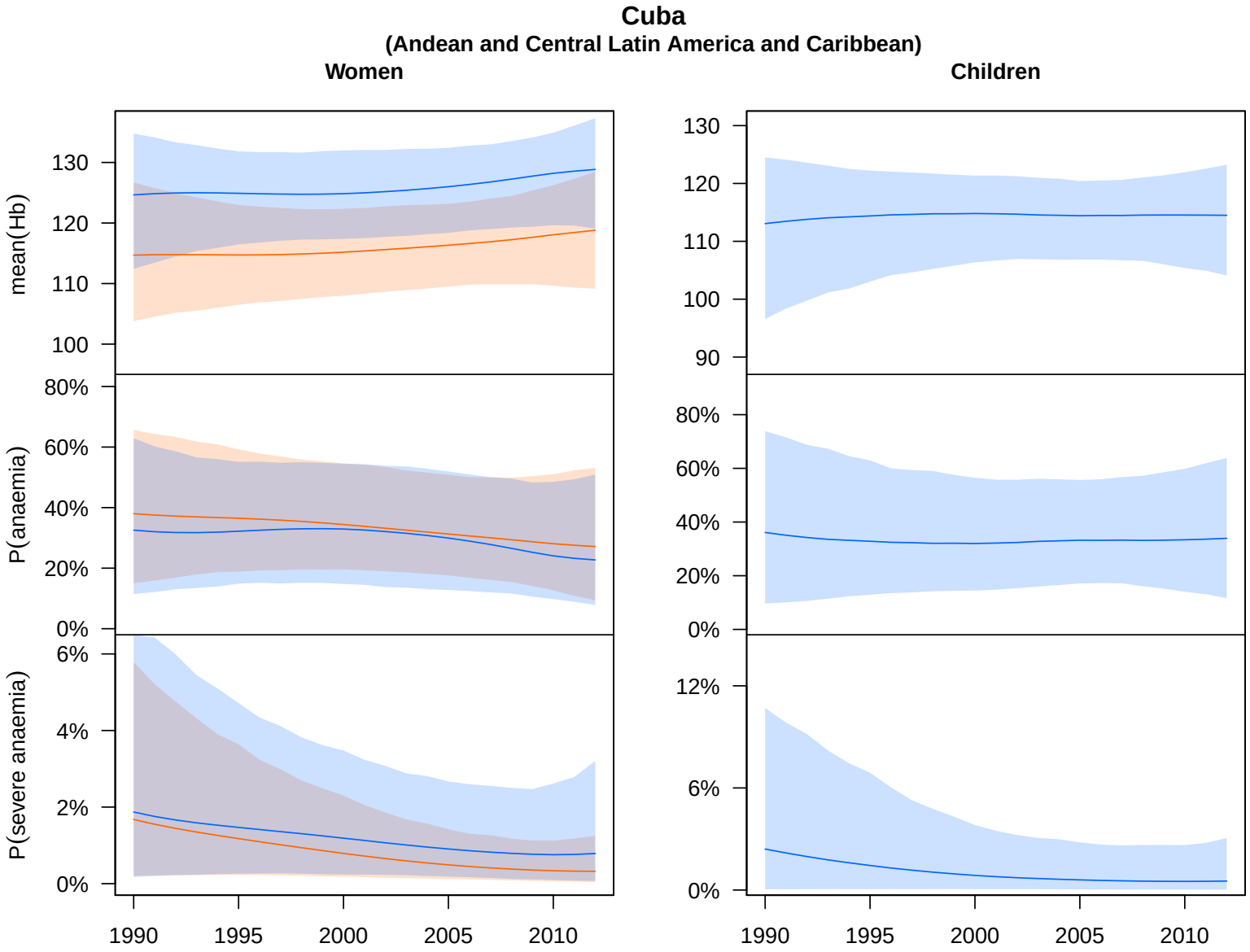

Comoros
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

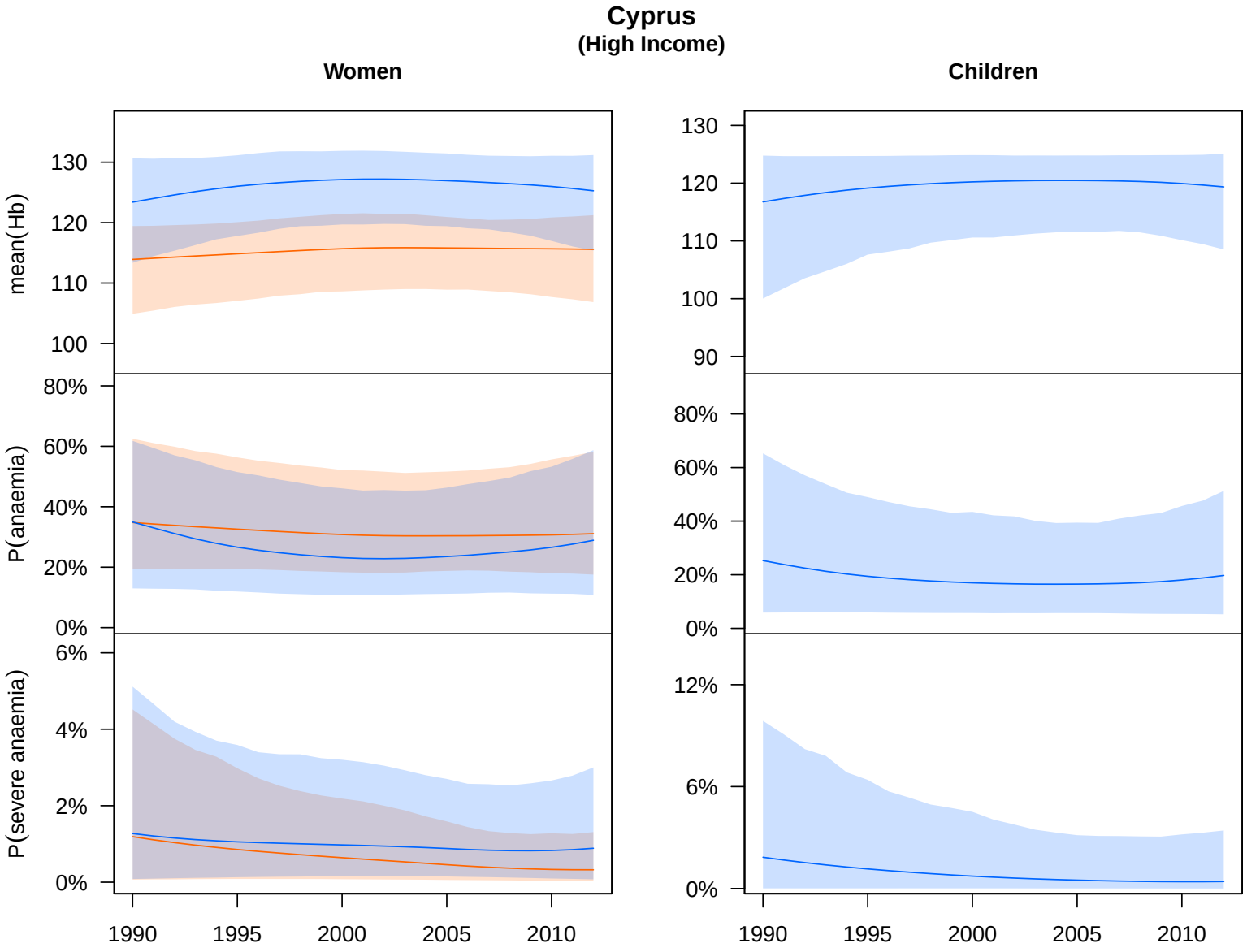

Congo
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

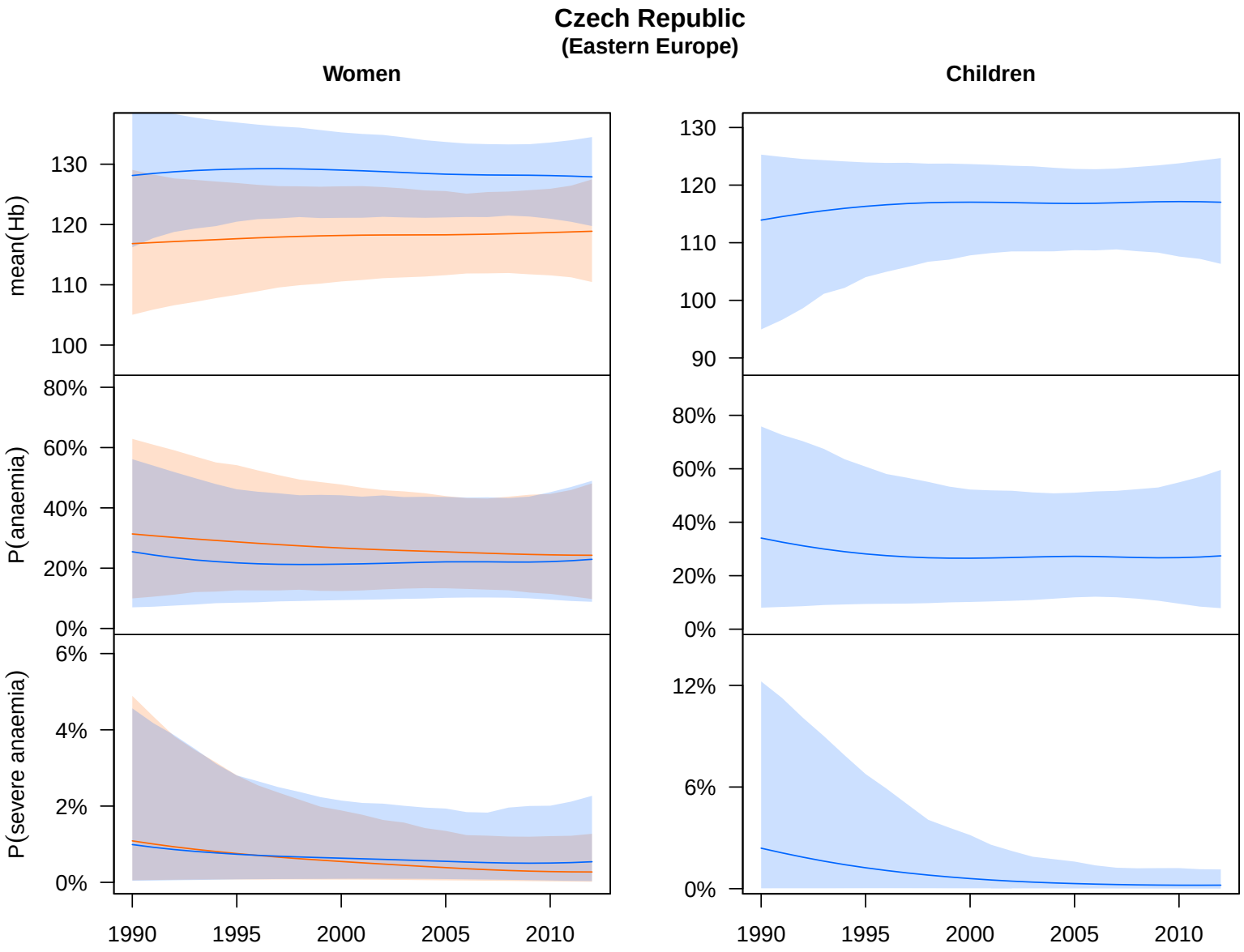

Costa Rica
(Andean and Central Latin America and Caribbean)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

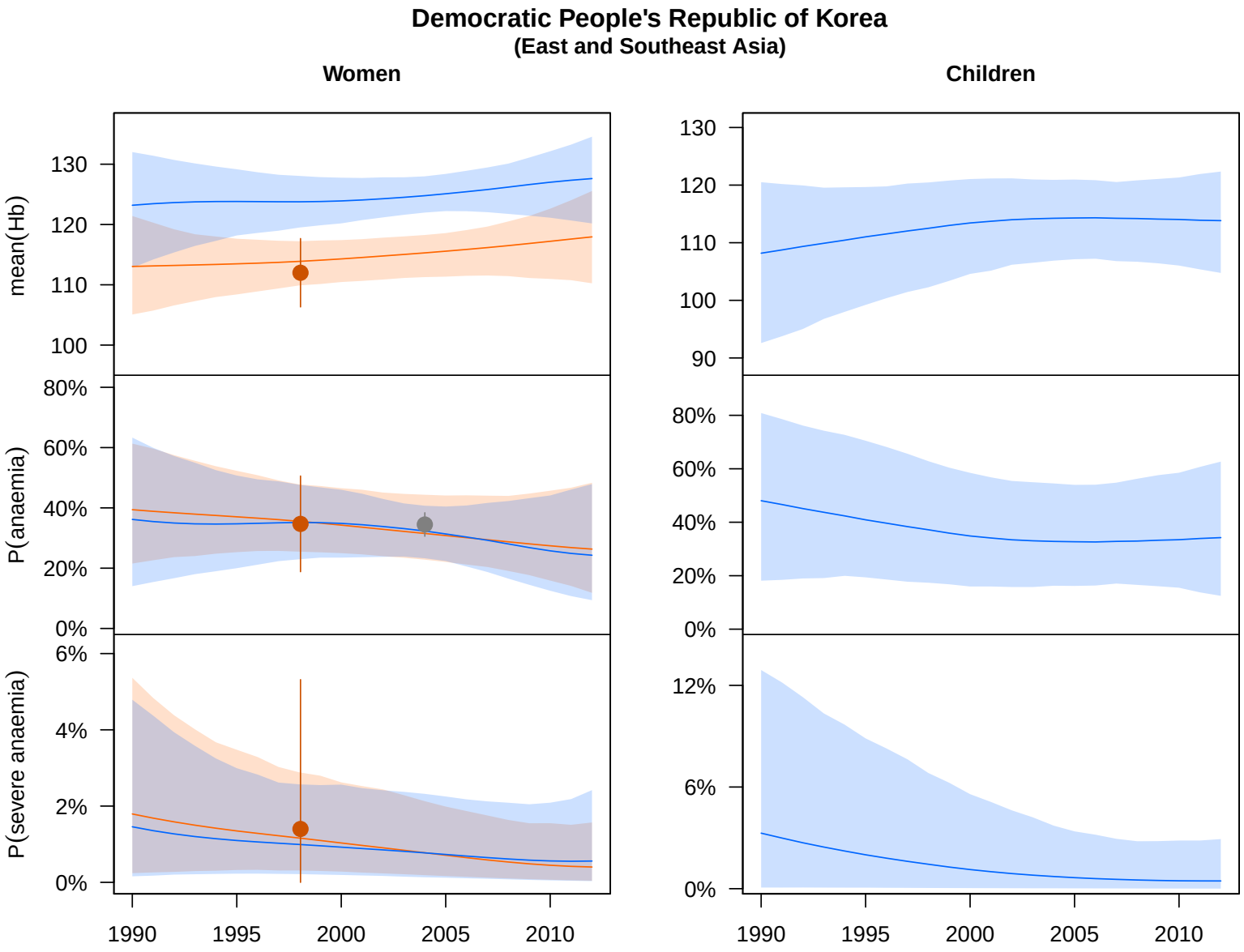

Côte d'Ivoire
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

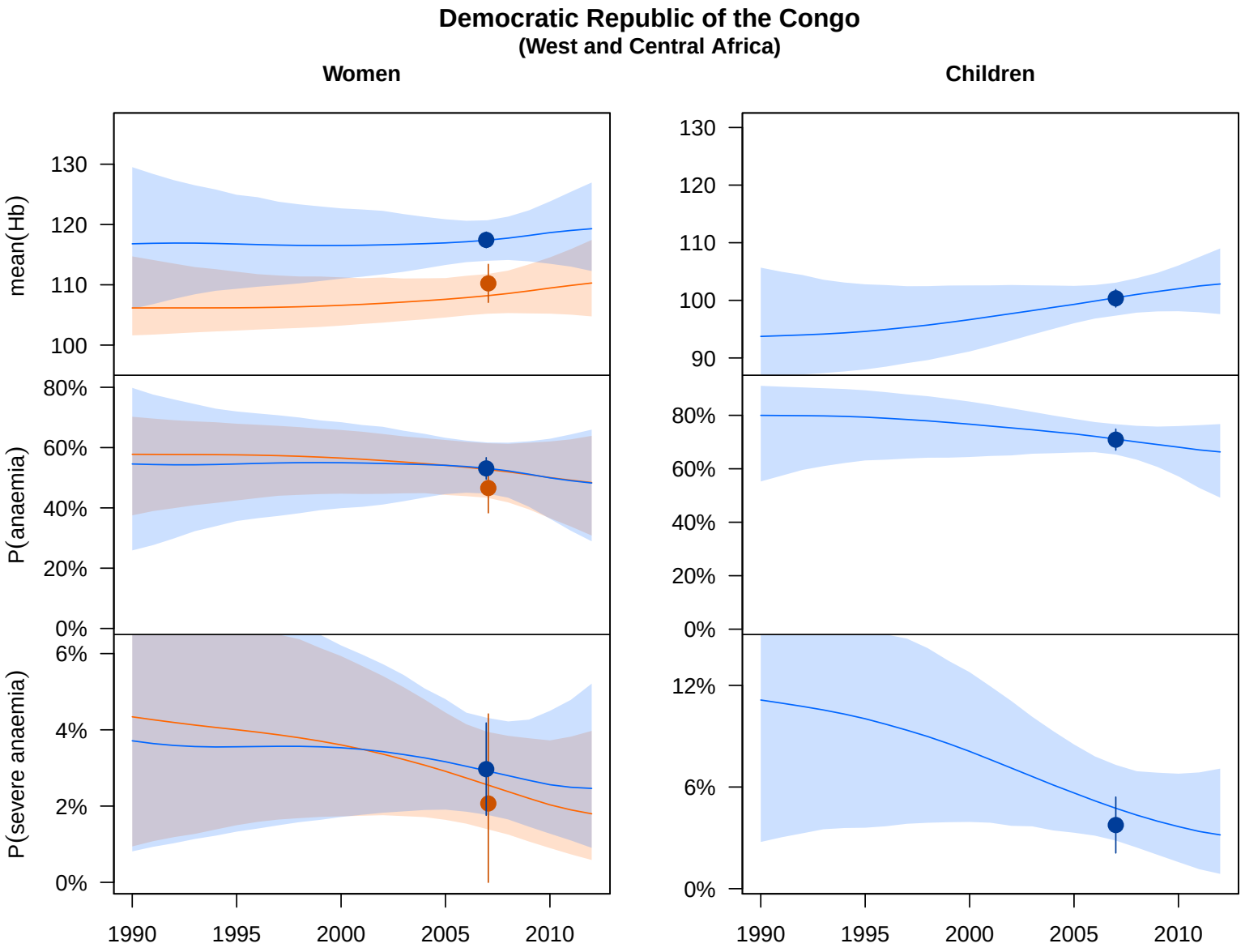

Croatia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

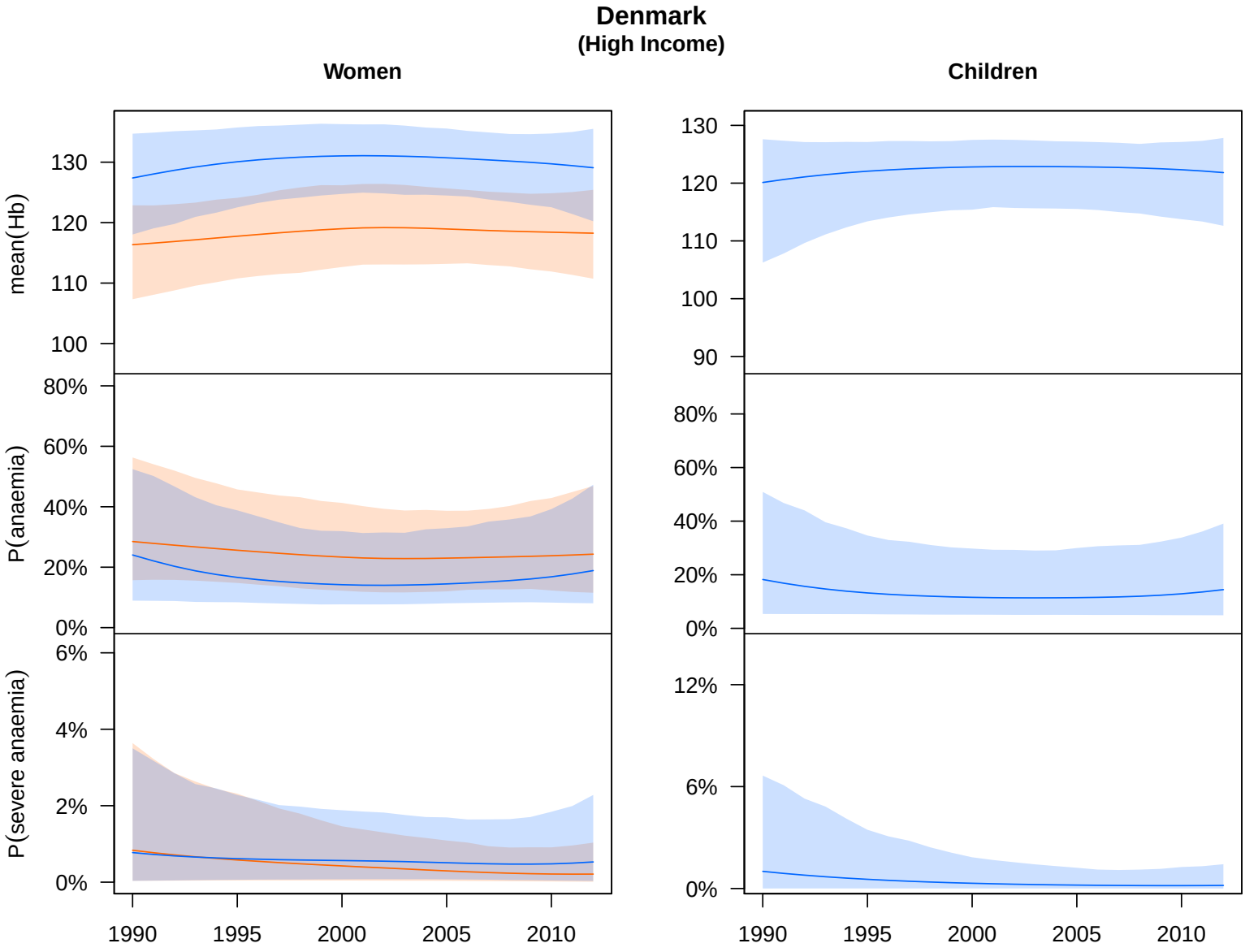

Cuba
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

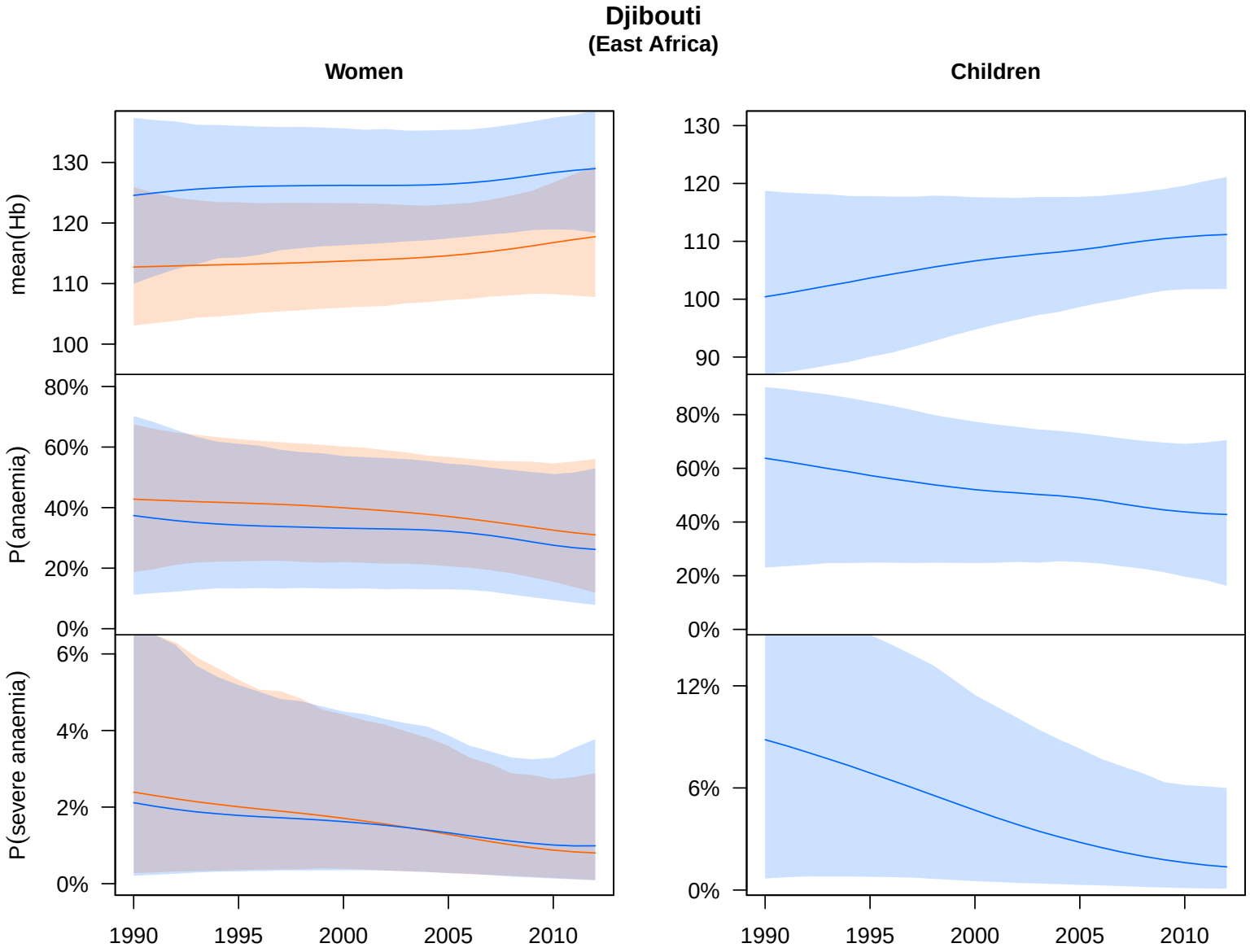

Cyprus
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Czech Republic
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Democratic People's Republic of Korea
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

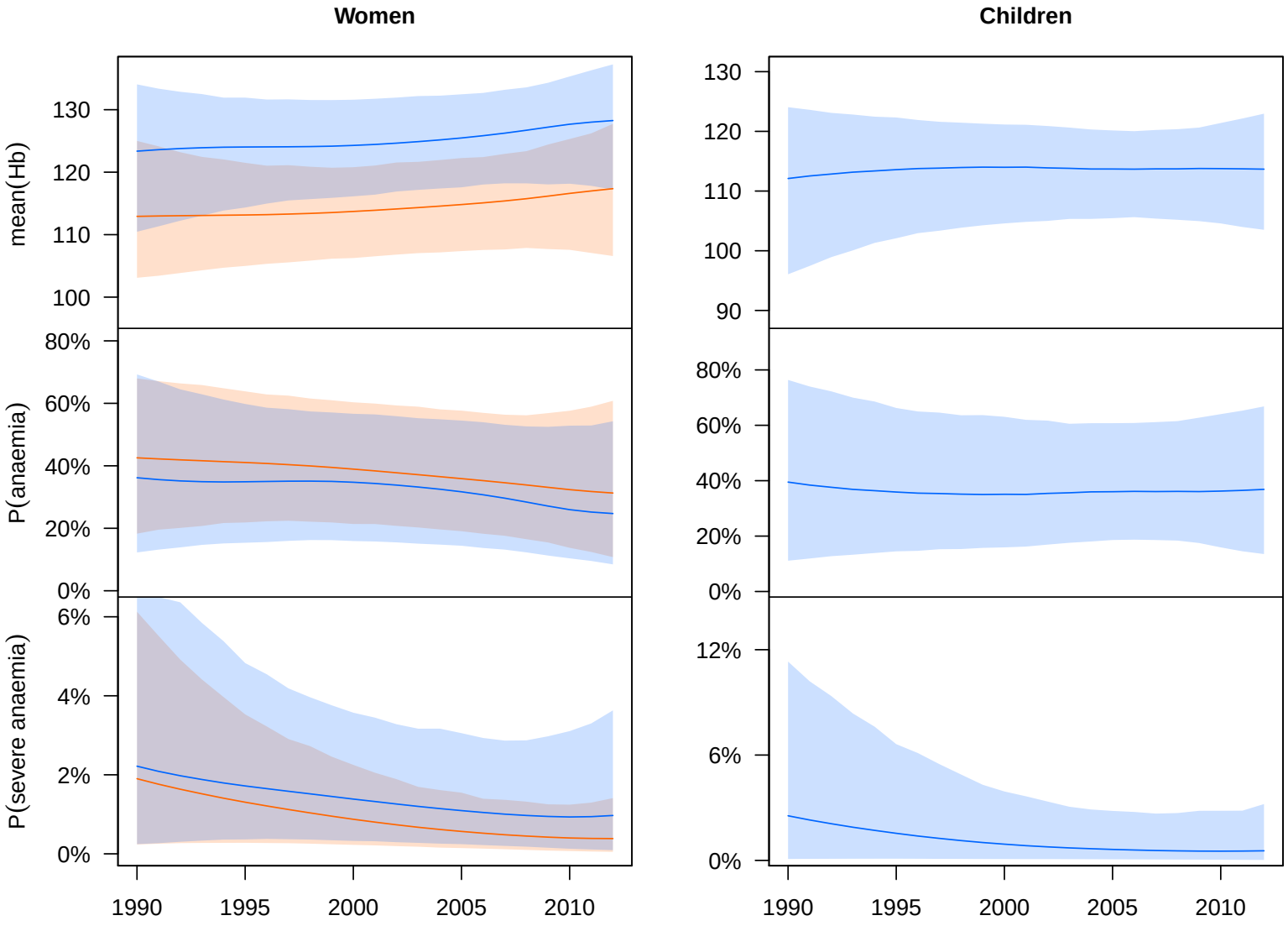

Democratic Republic of the Congo
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Denmark
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Djibouti
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

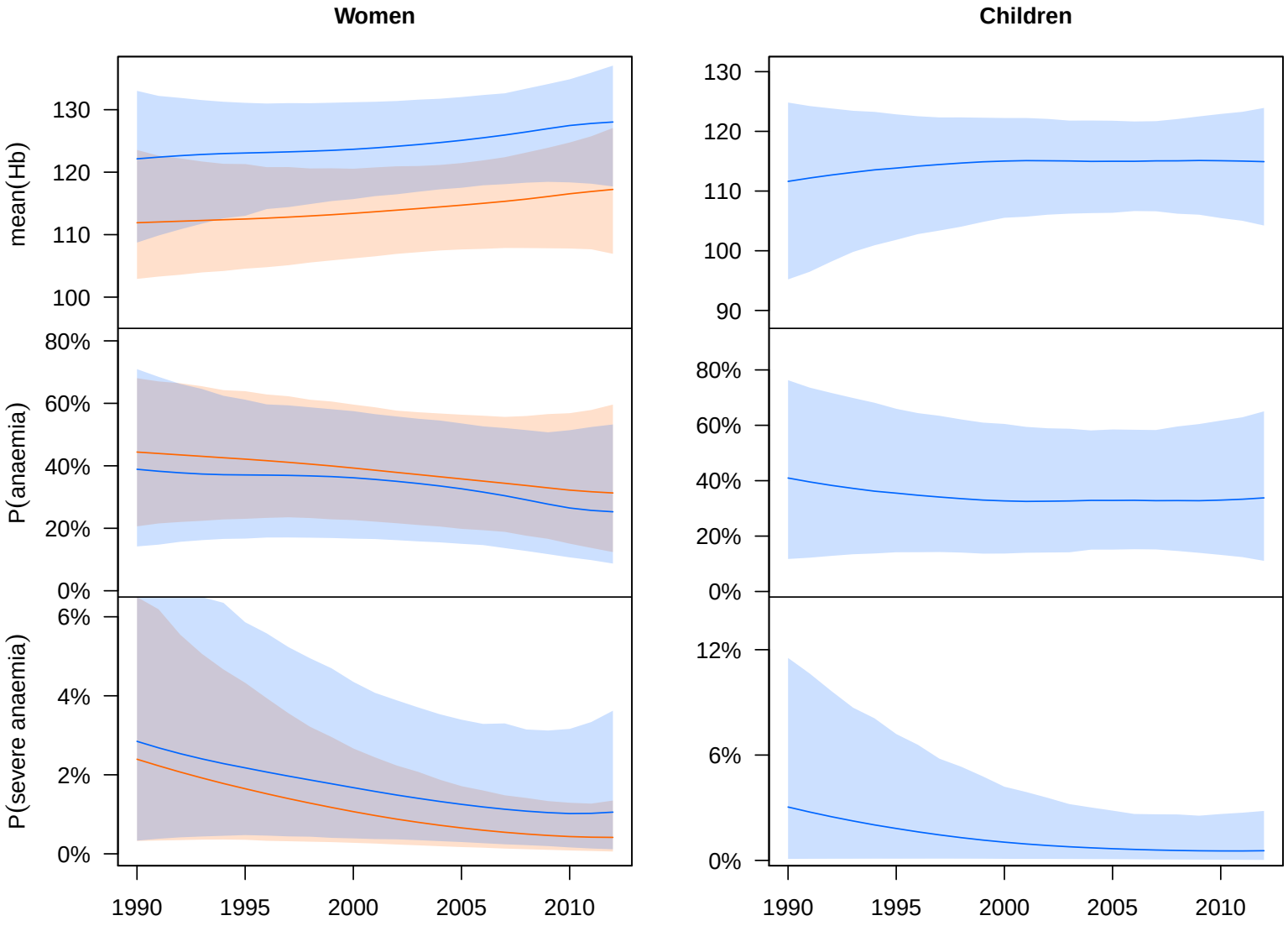
Dominica

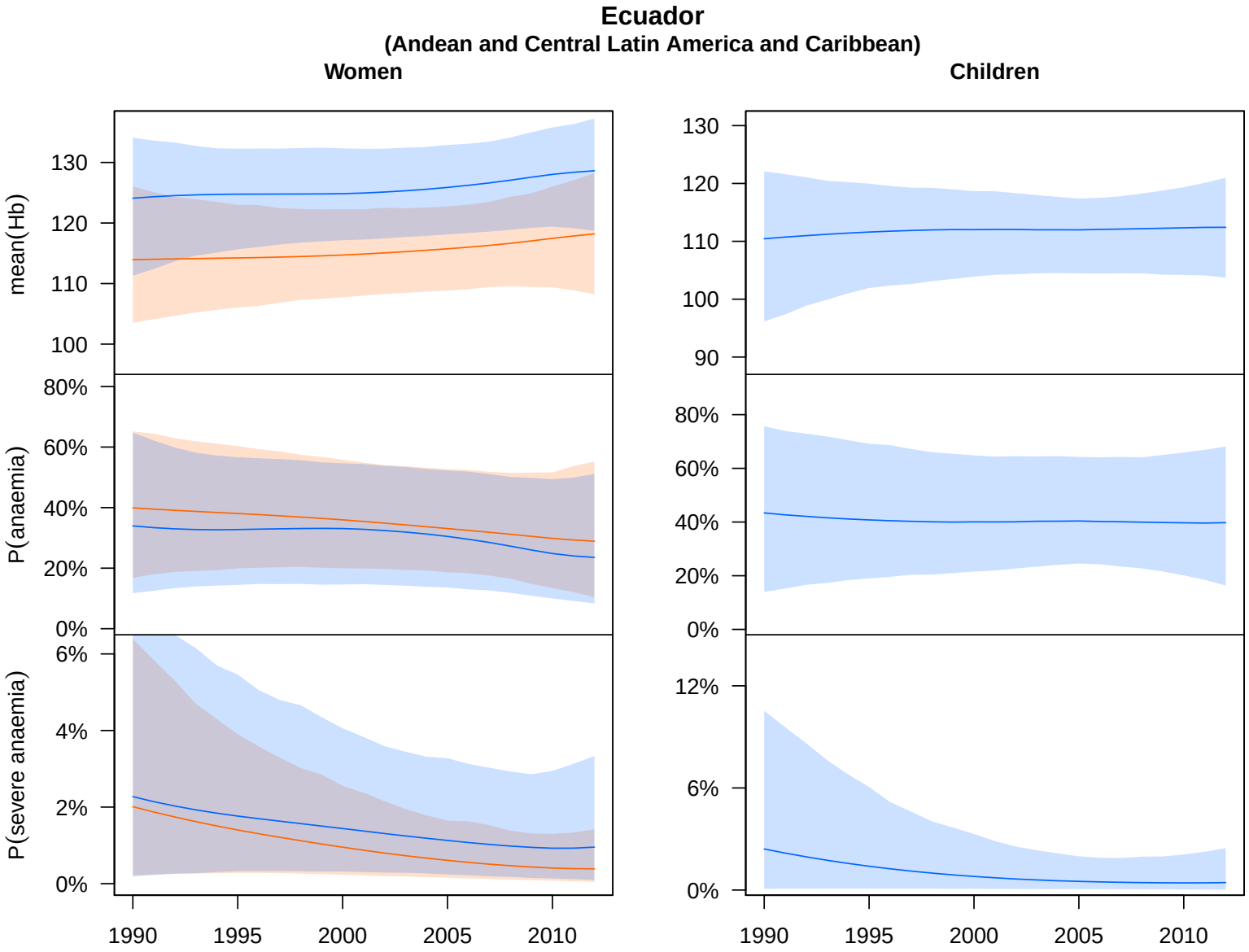
(Andean and Central Latin America and Caribbean)



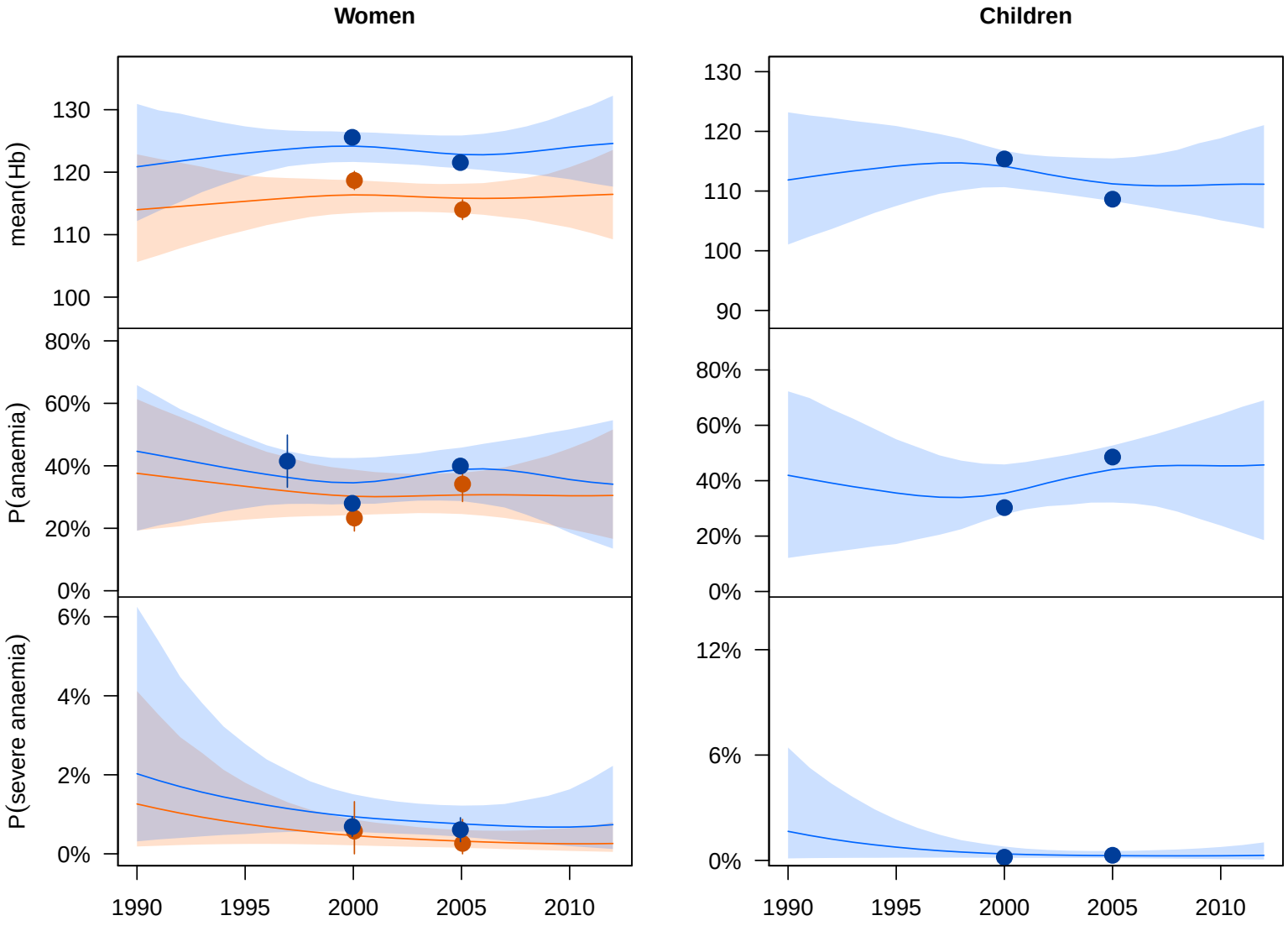
Dominican Republic

(Andean and Central Latin America and Caribbean)



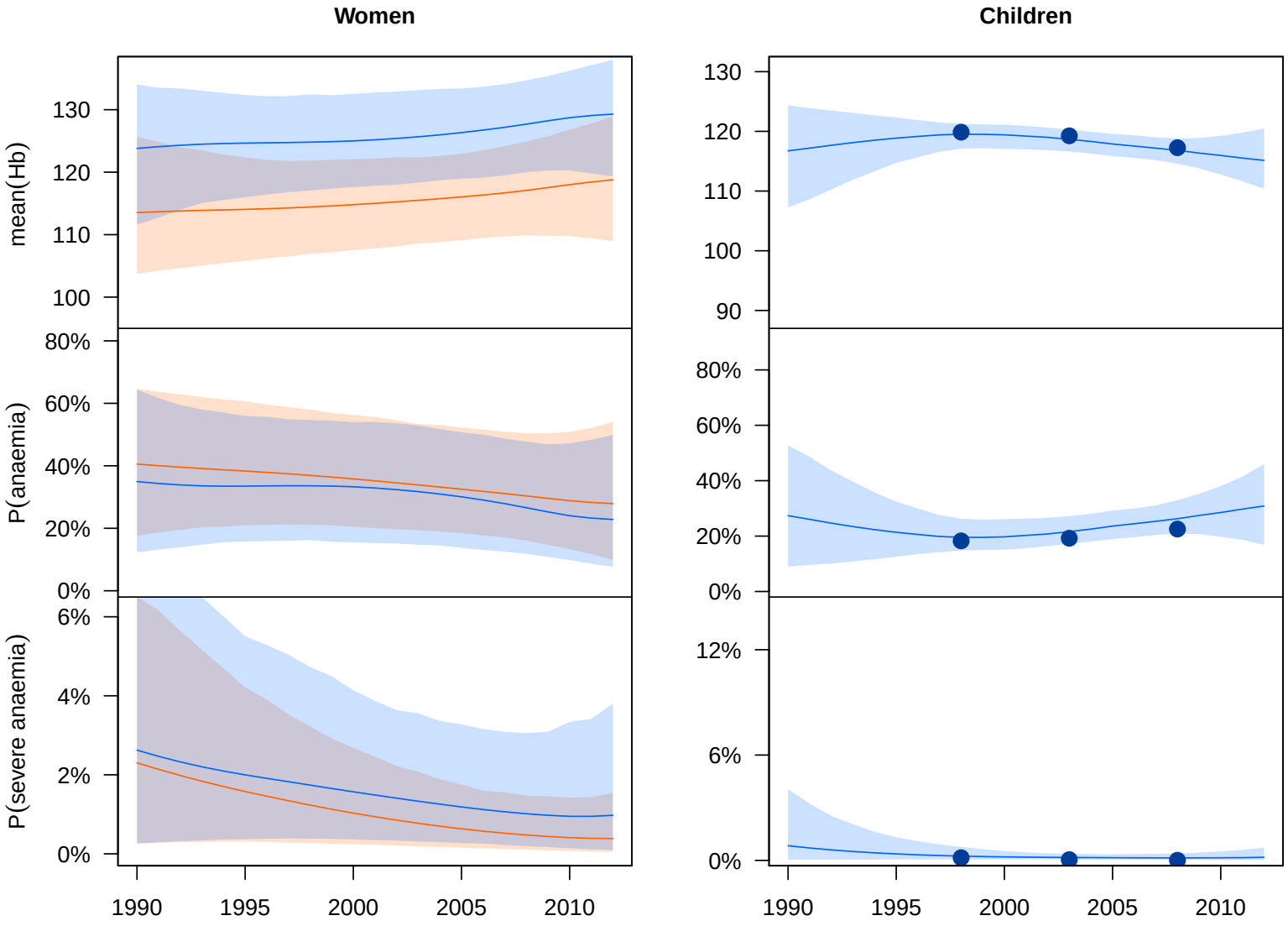

Ecuador
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

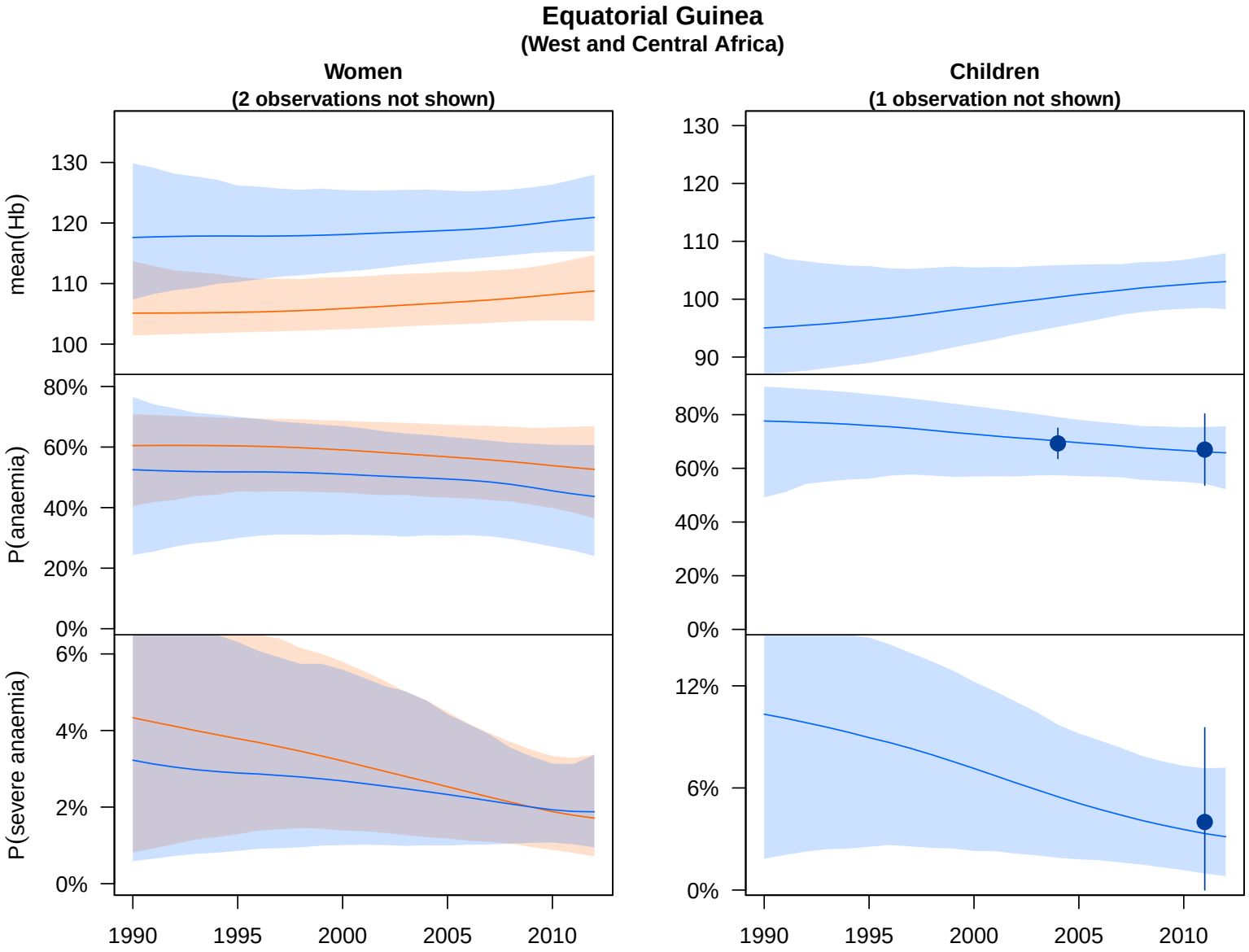
Egypt
(Central Asia, Middle East, and North Africa)

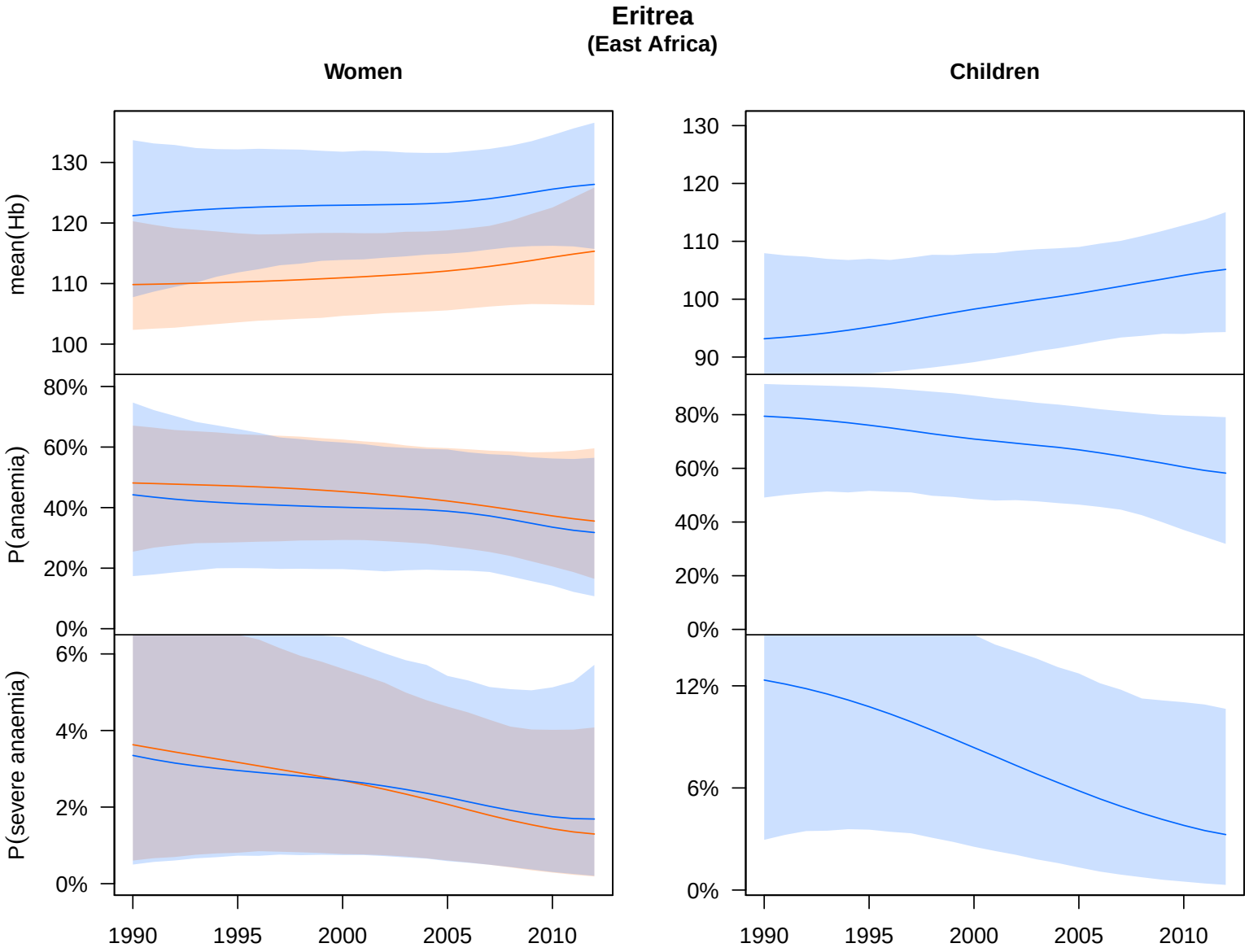


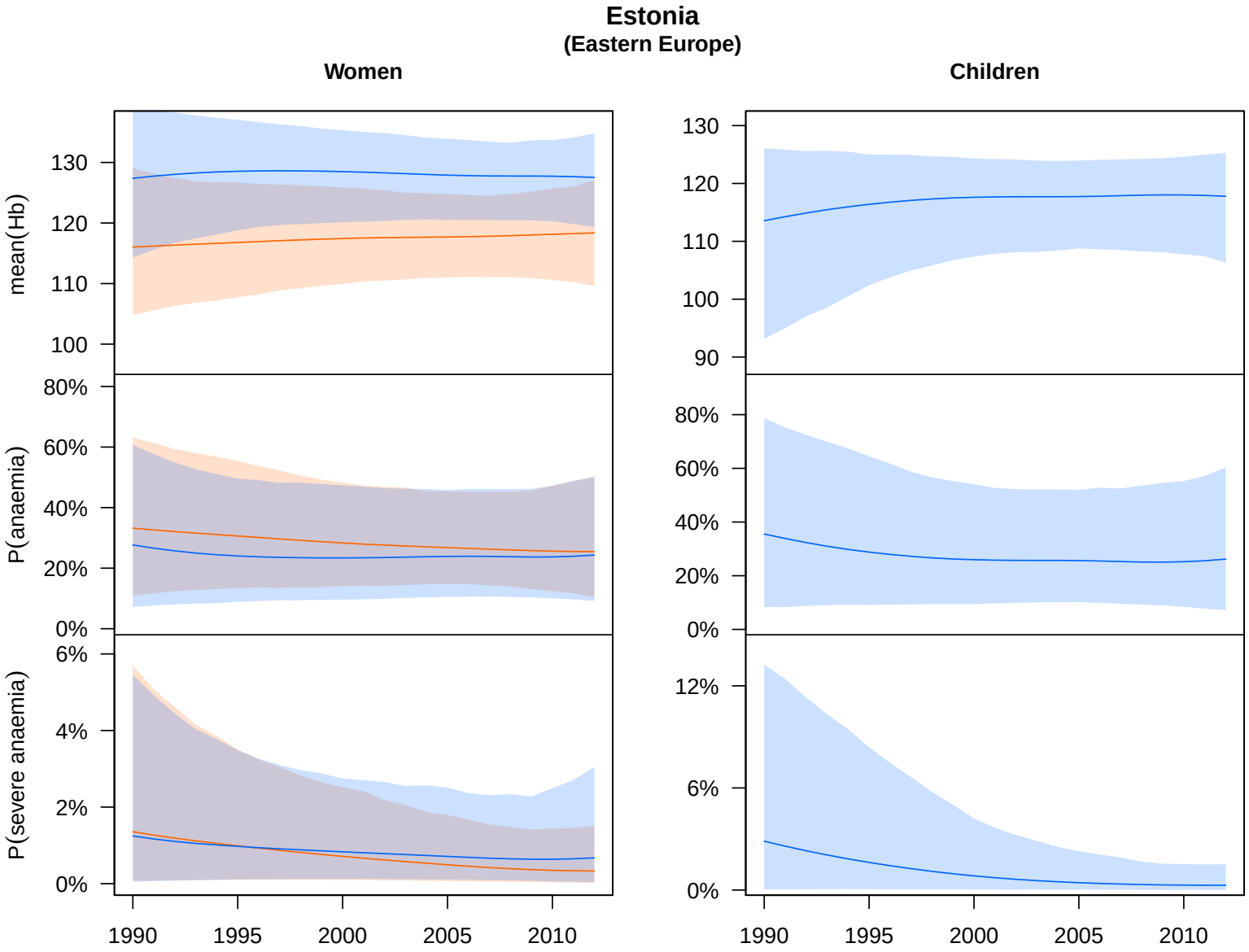
El Salvador

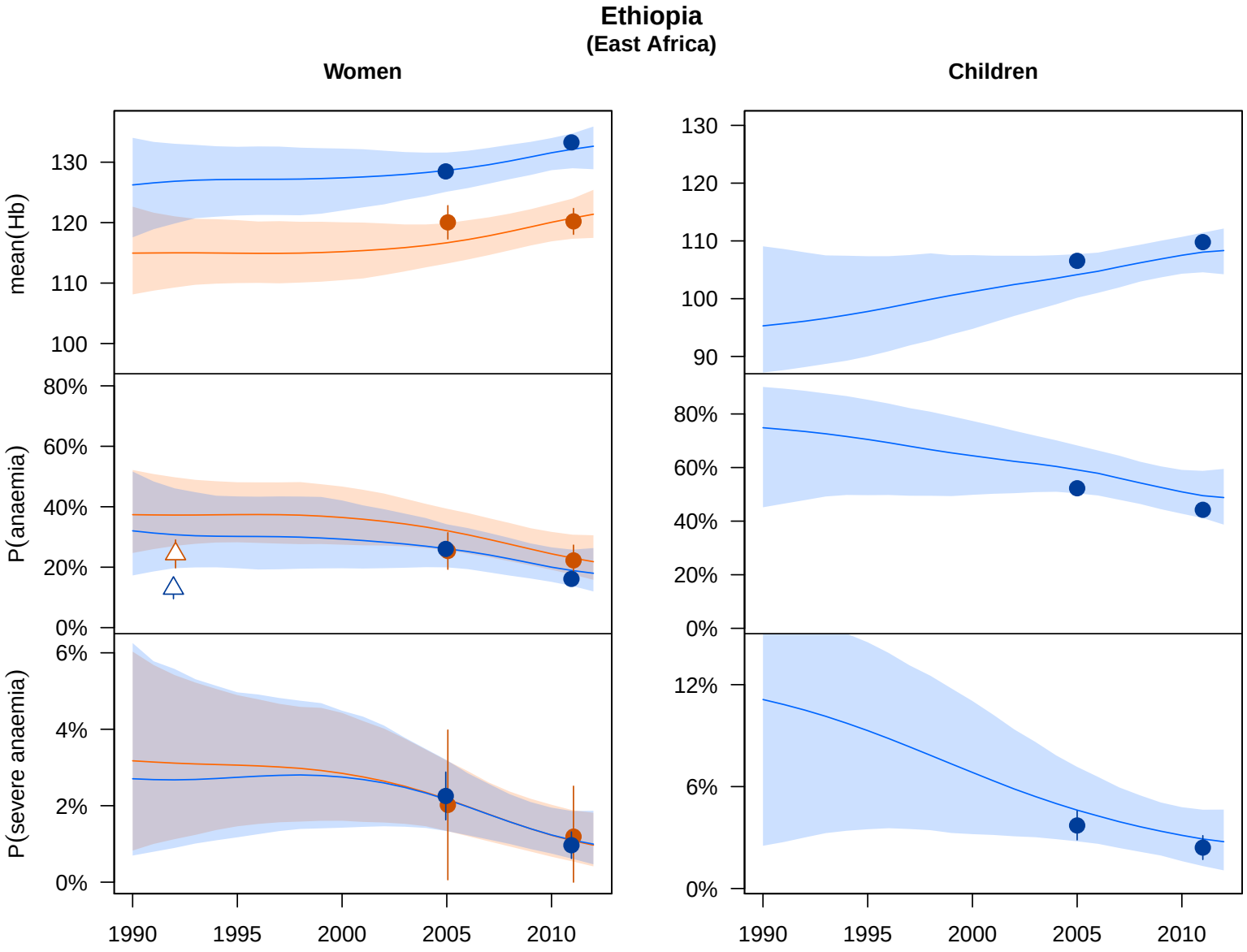
(Andean and Central Latin America and Caribbean)

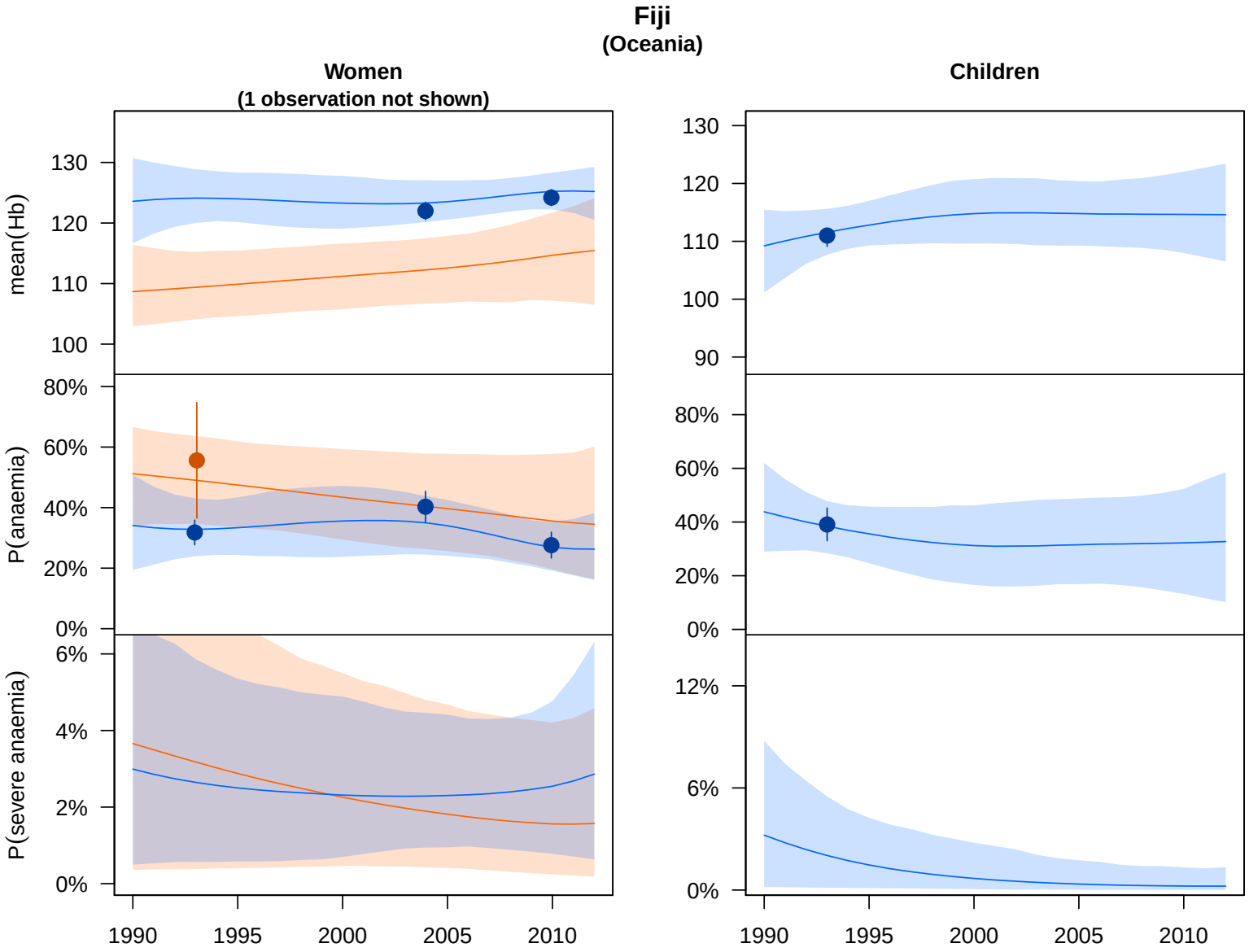


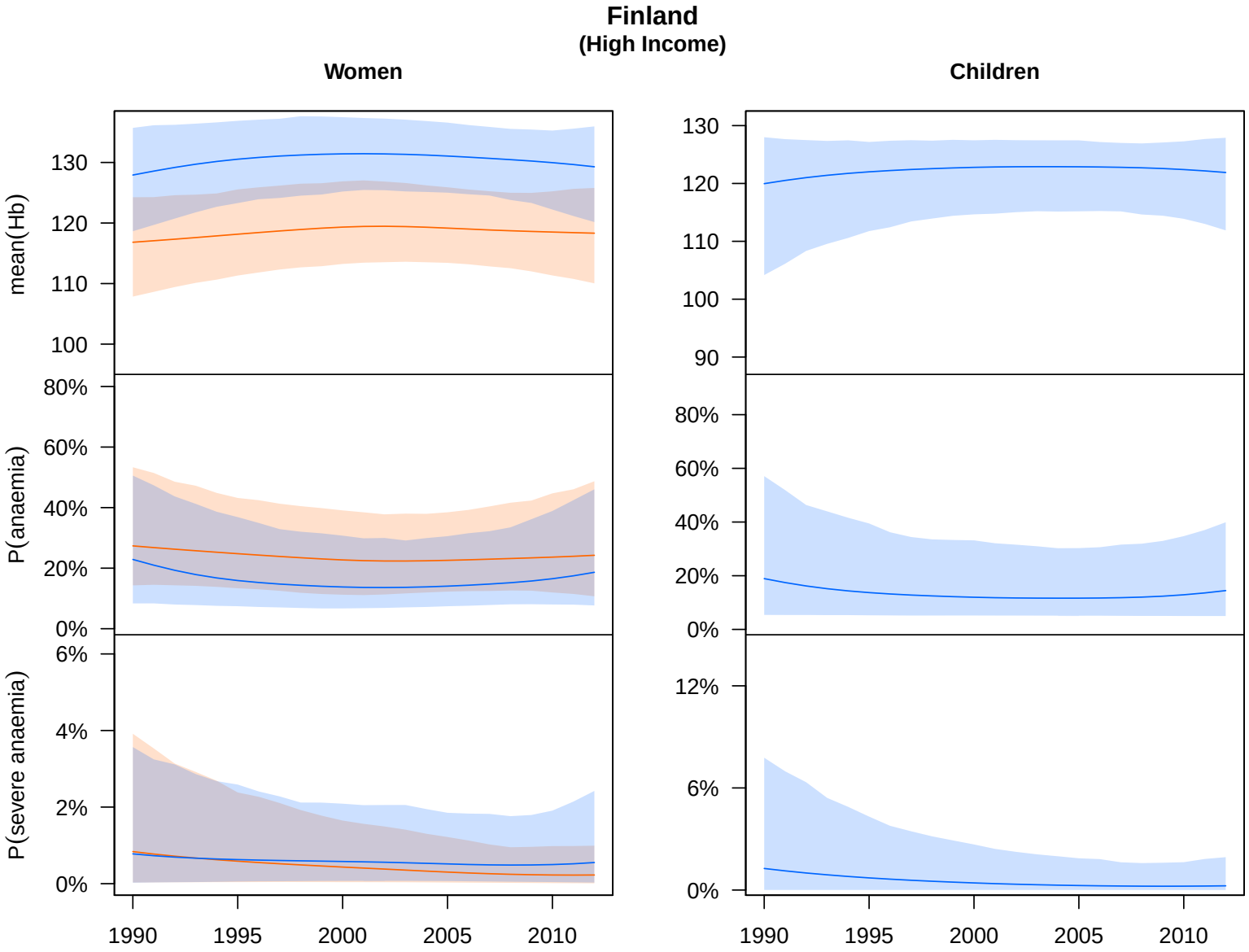

Equatorial Guinea
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

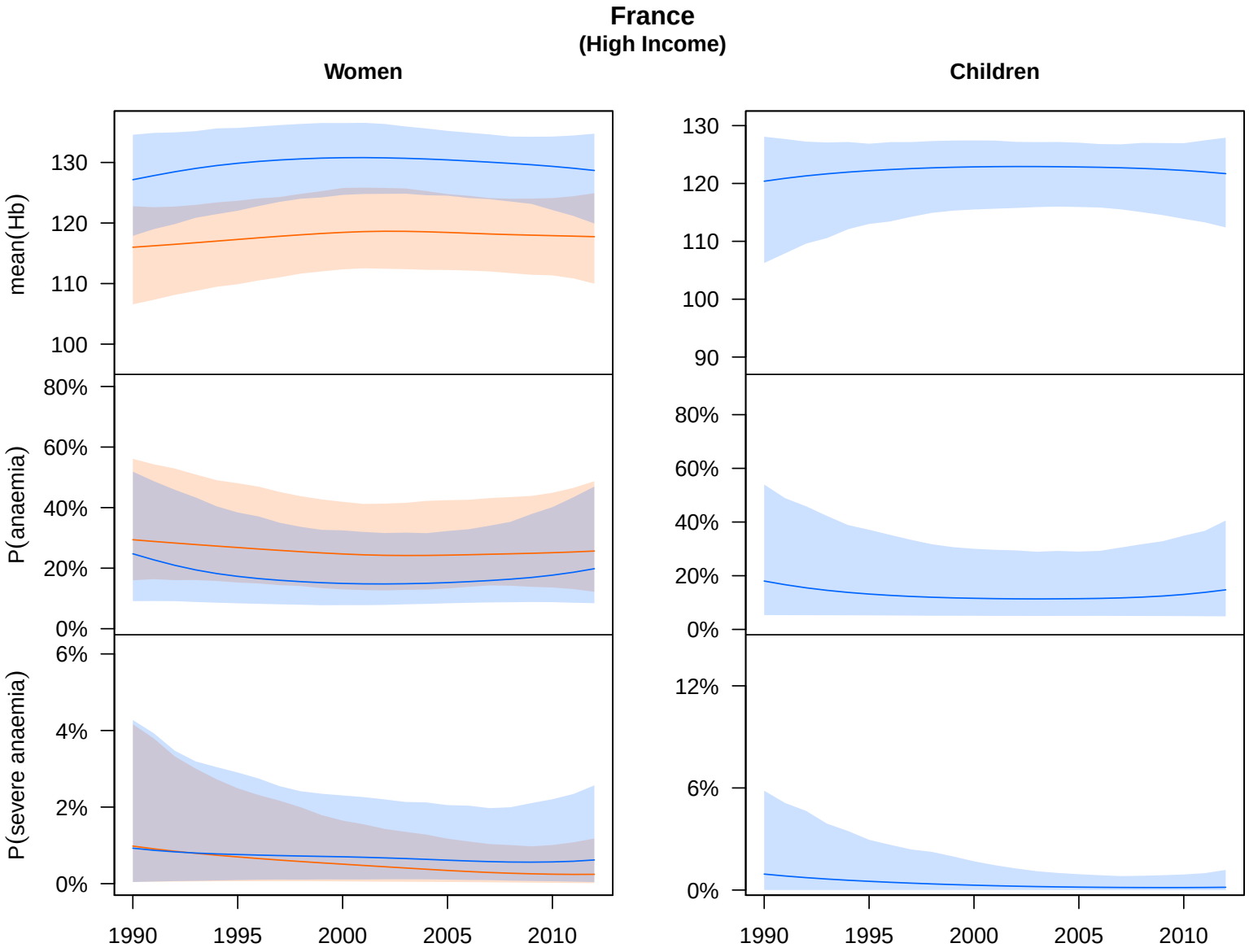

Eritrea
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

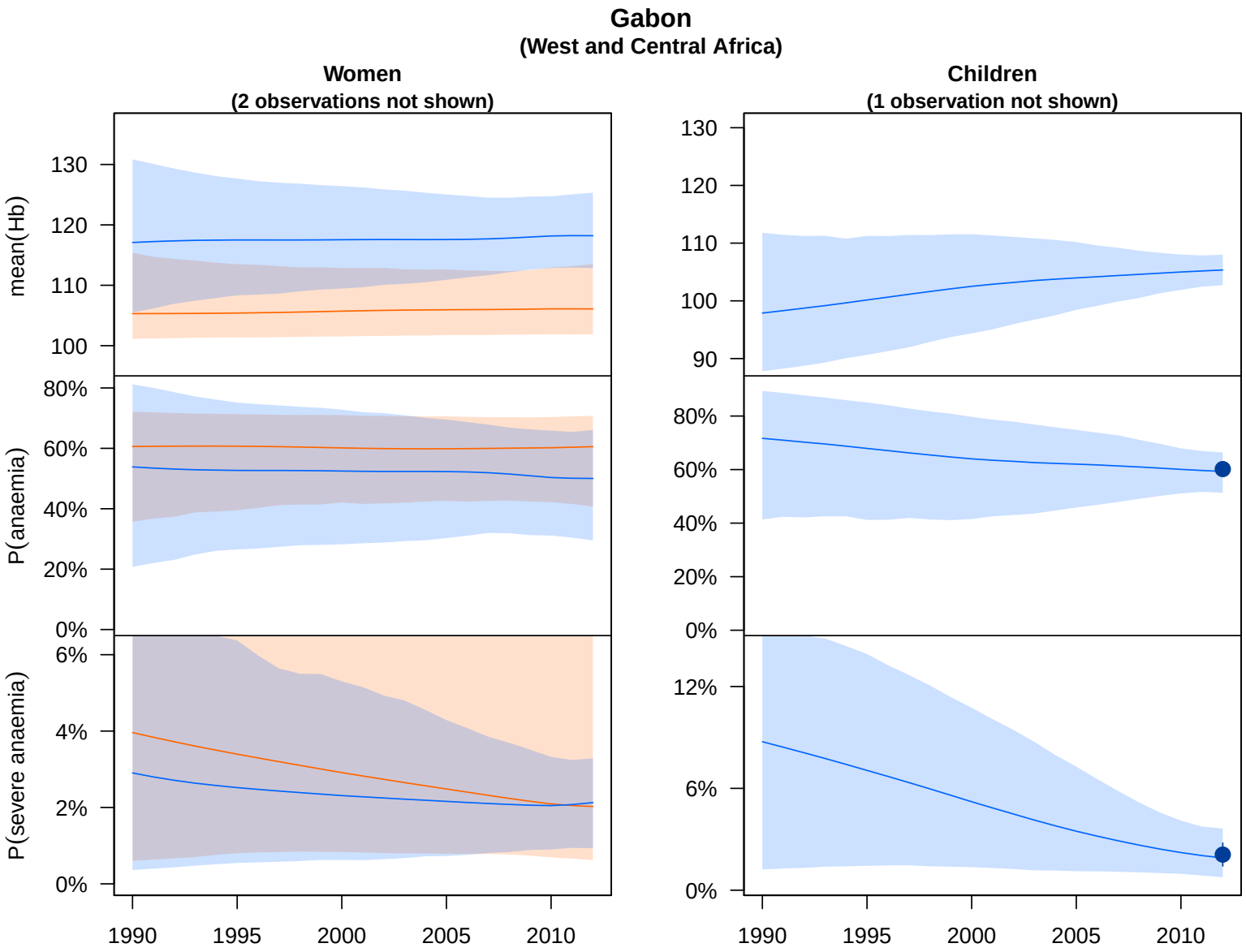

Estonia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

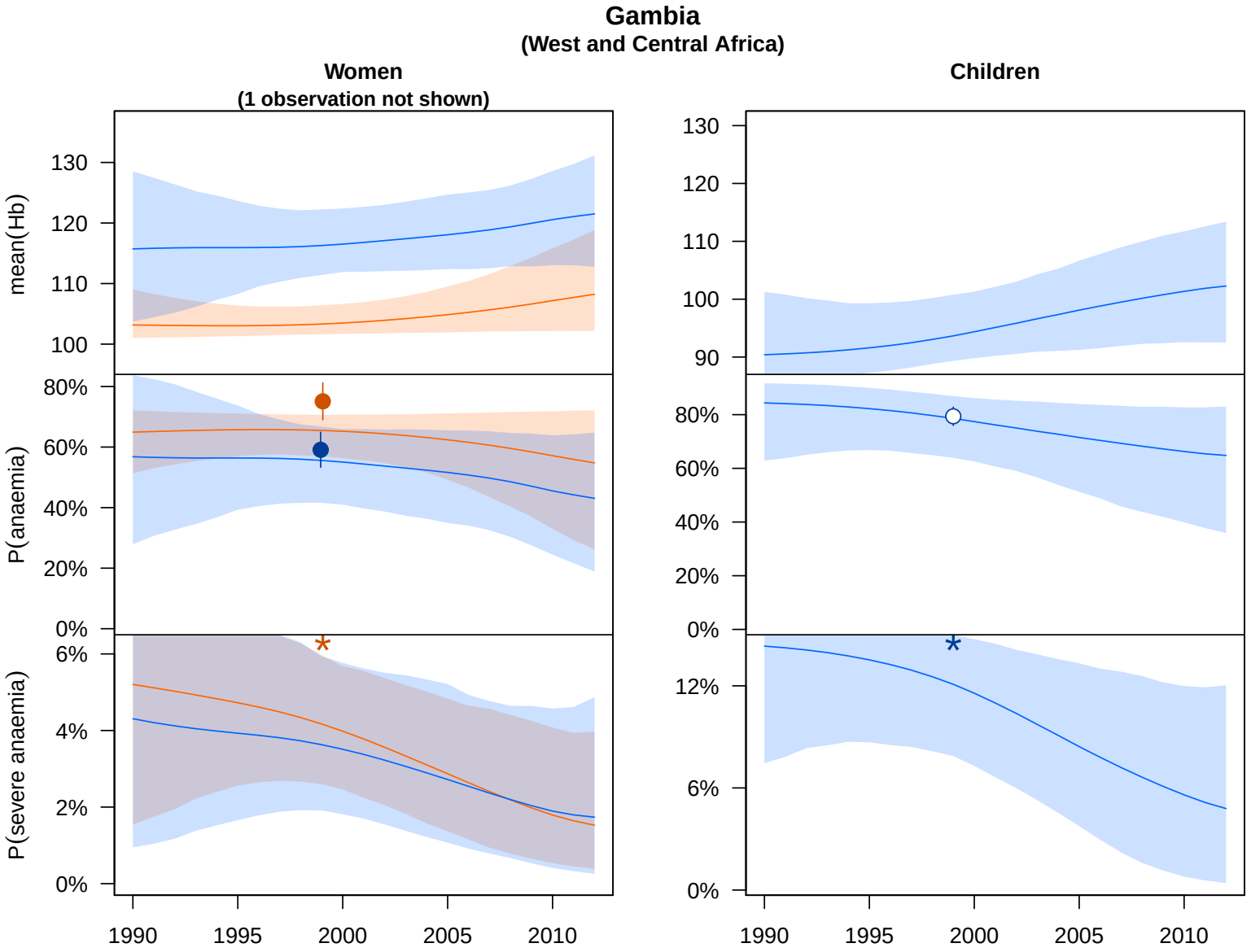

Ethiopia
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

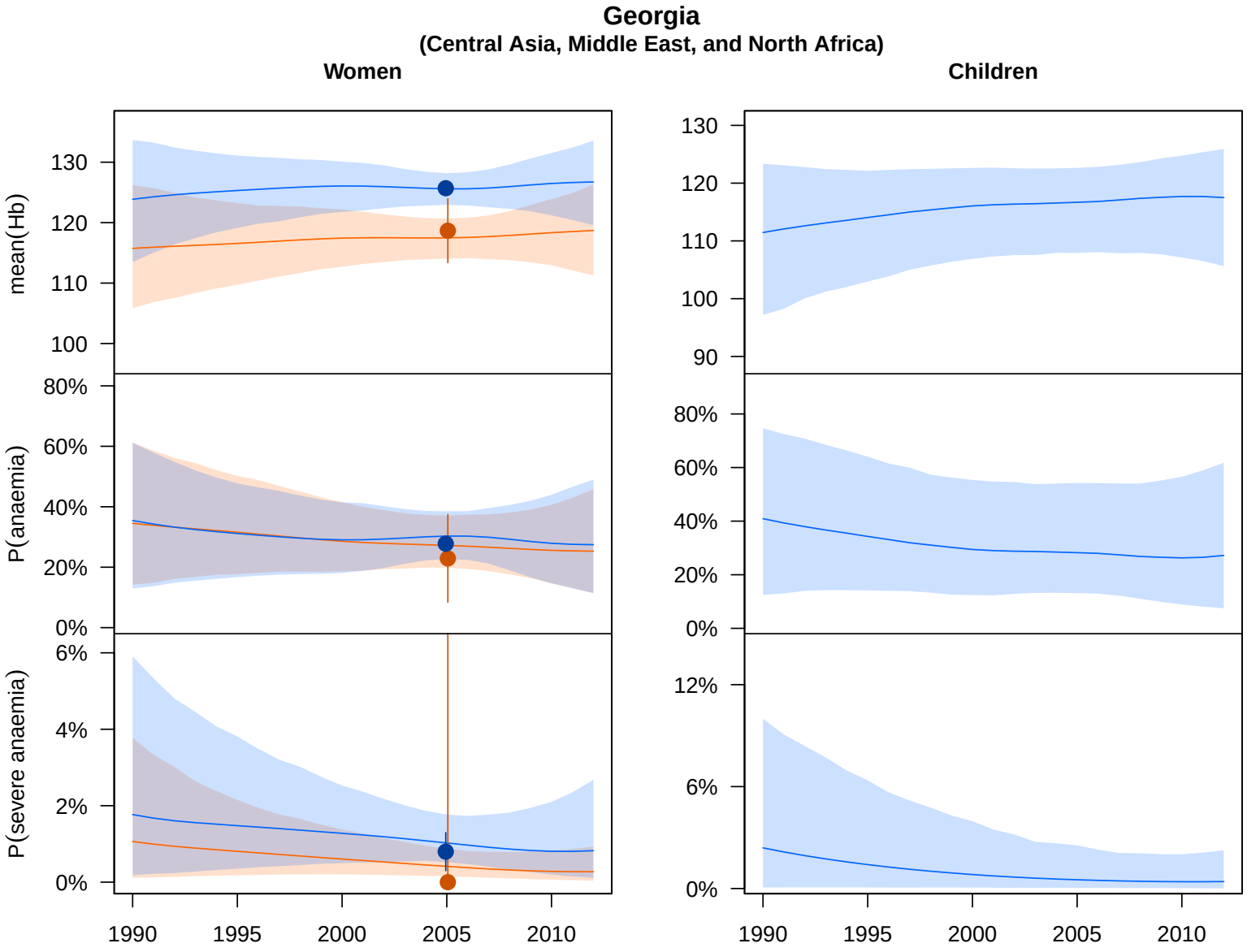

Fiji
(Oceania)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

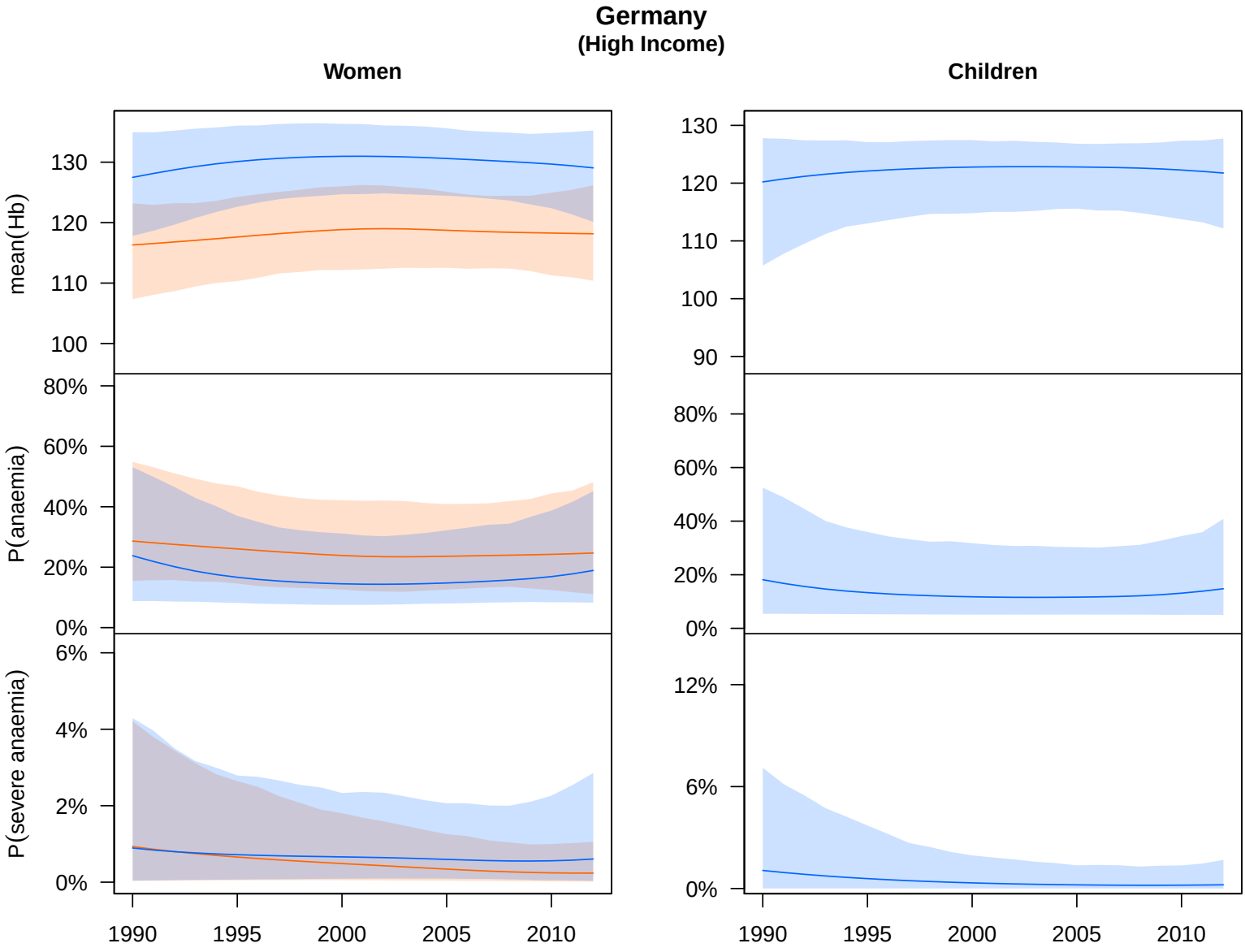

Finland
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

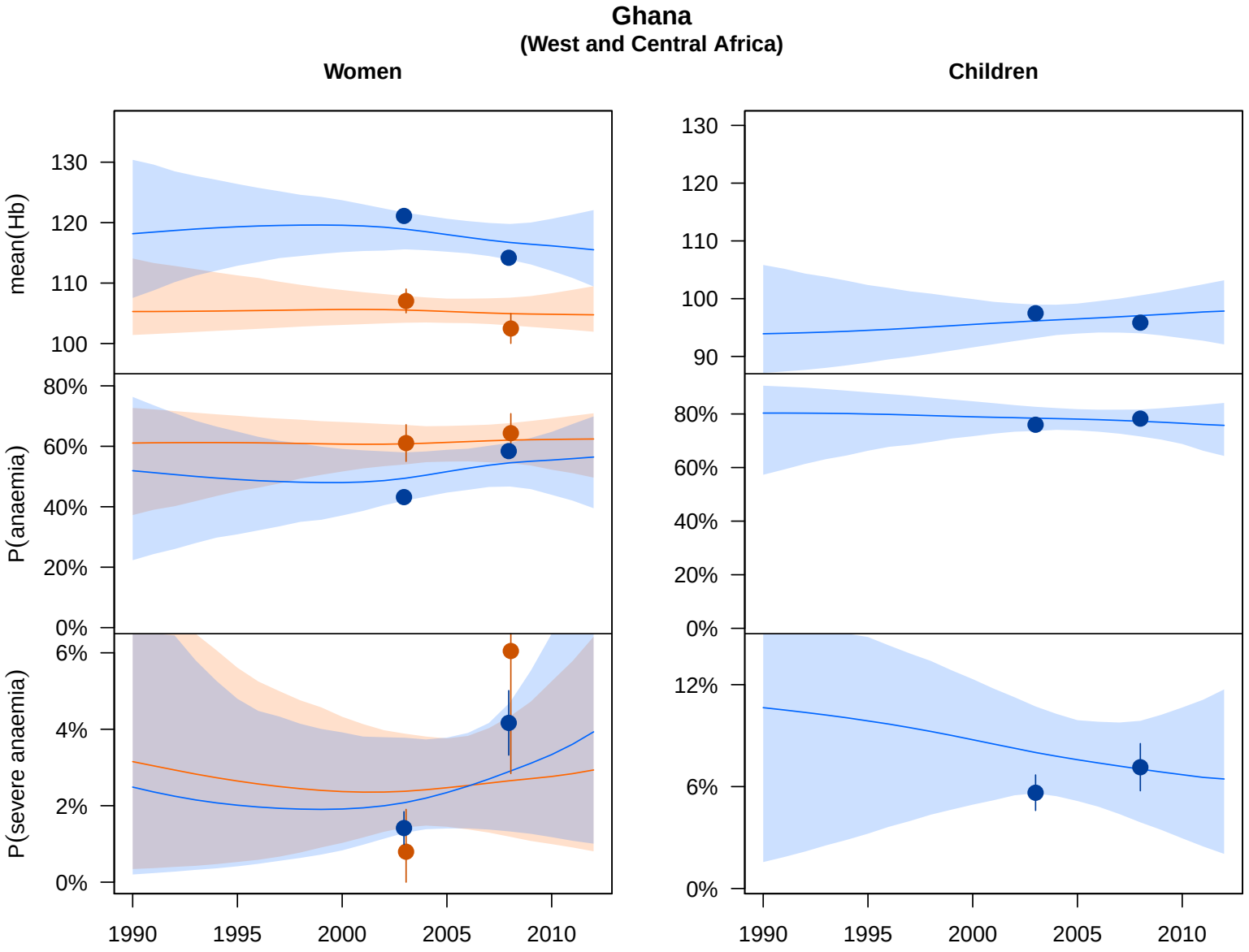

France
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

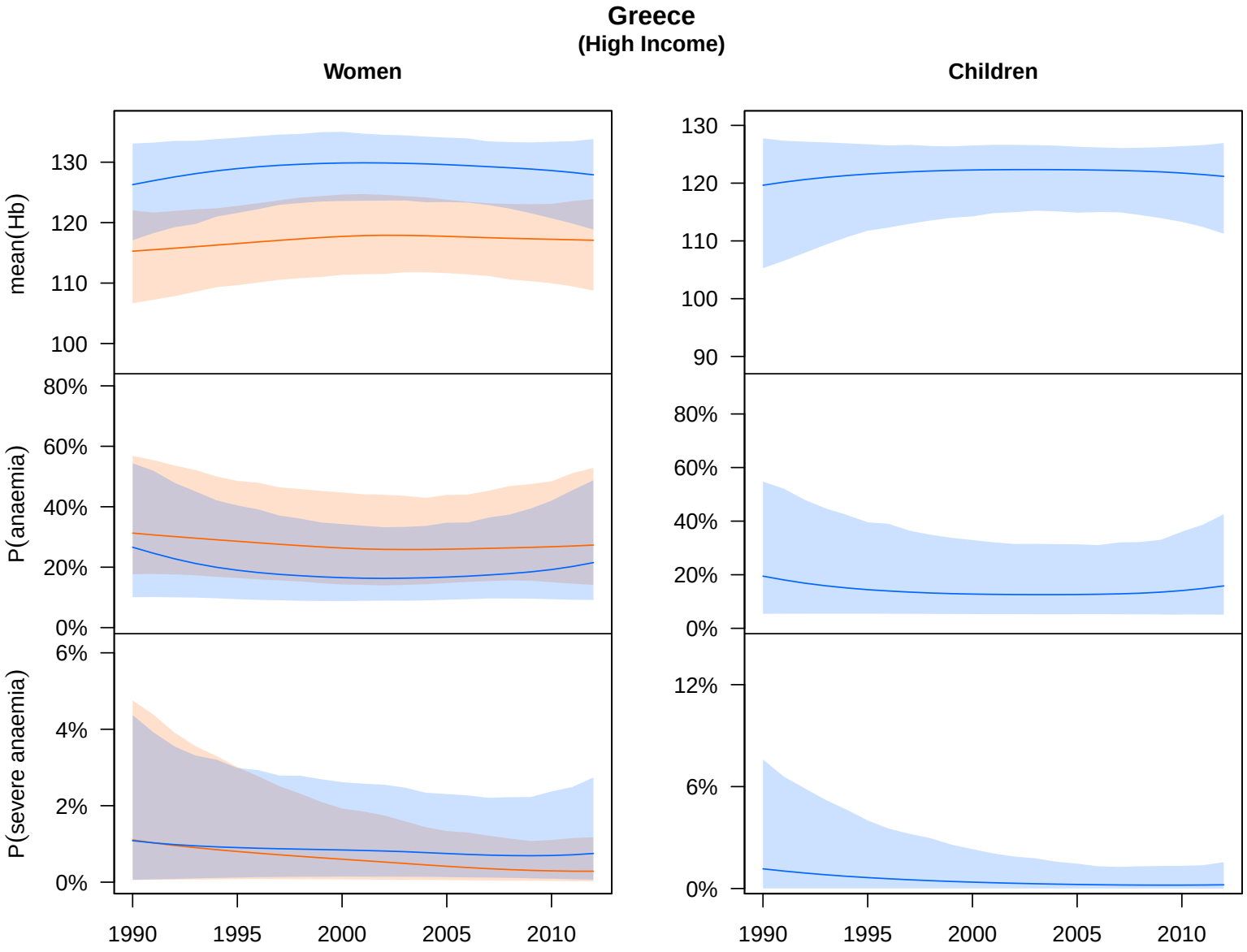

Gabon
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Gambia
(West and Central Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Georgia
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

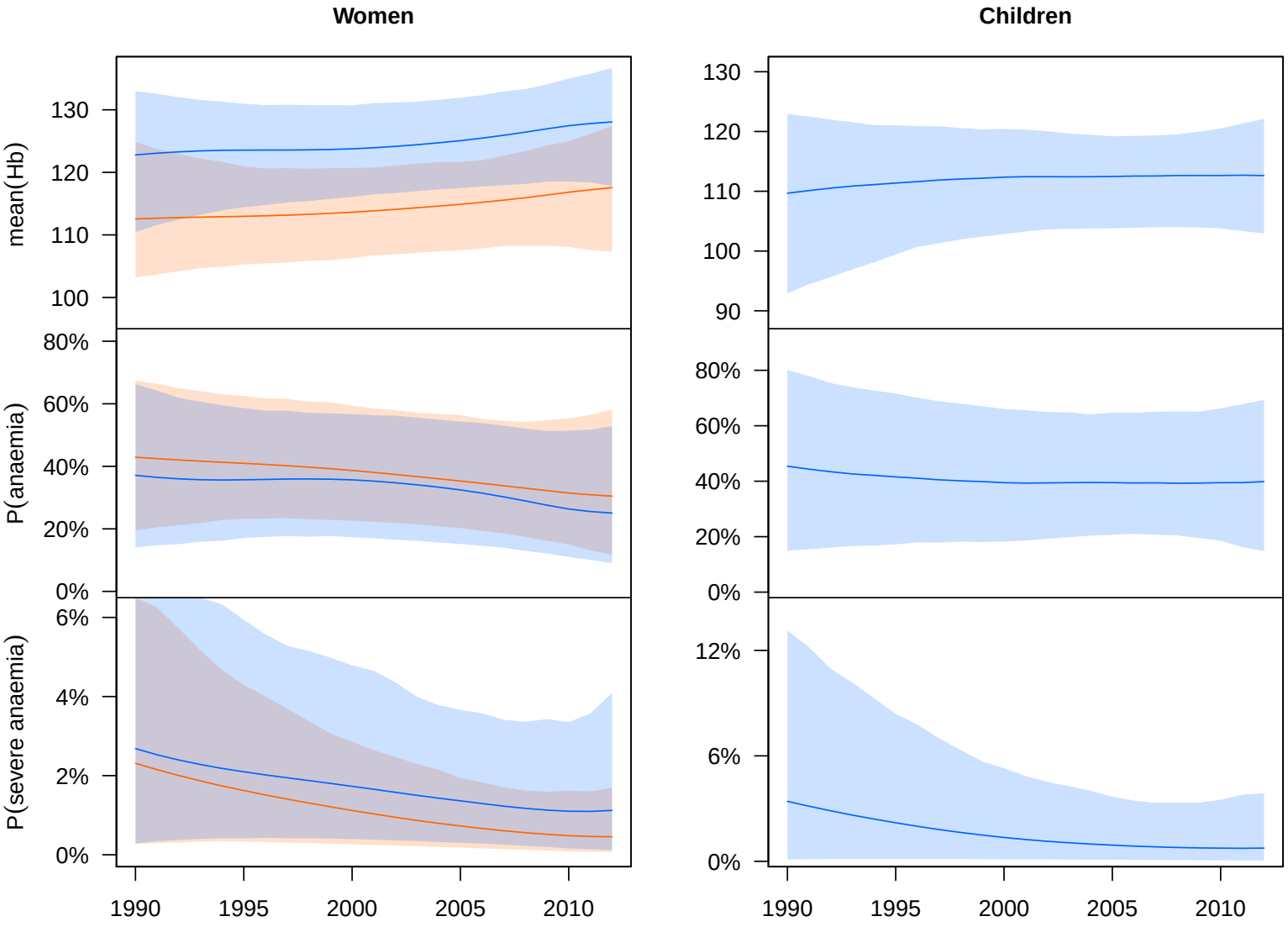

Germany
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Ghana
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Greece
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

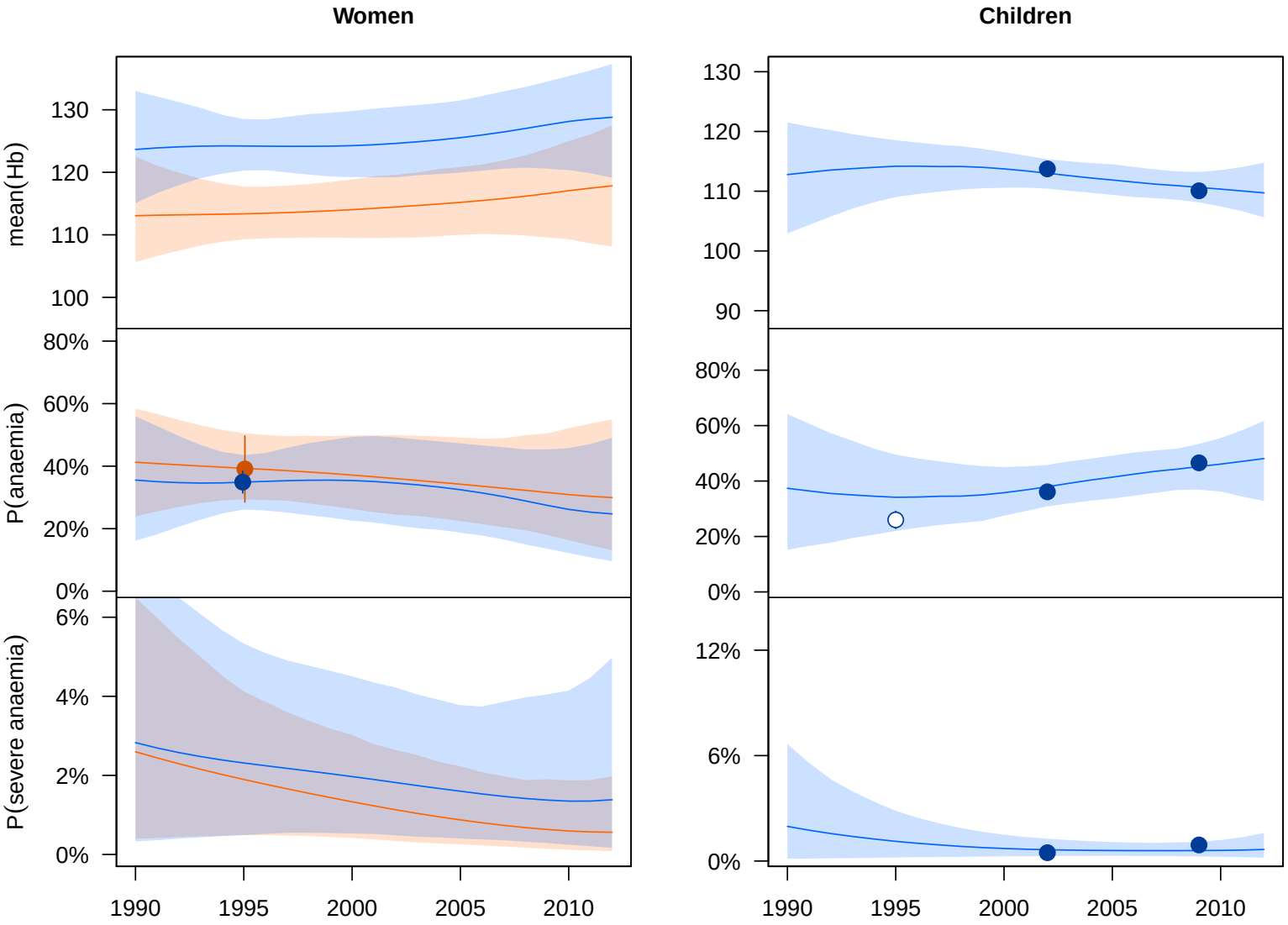
Grenada

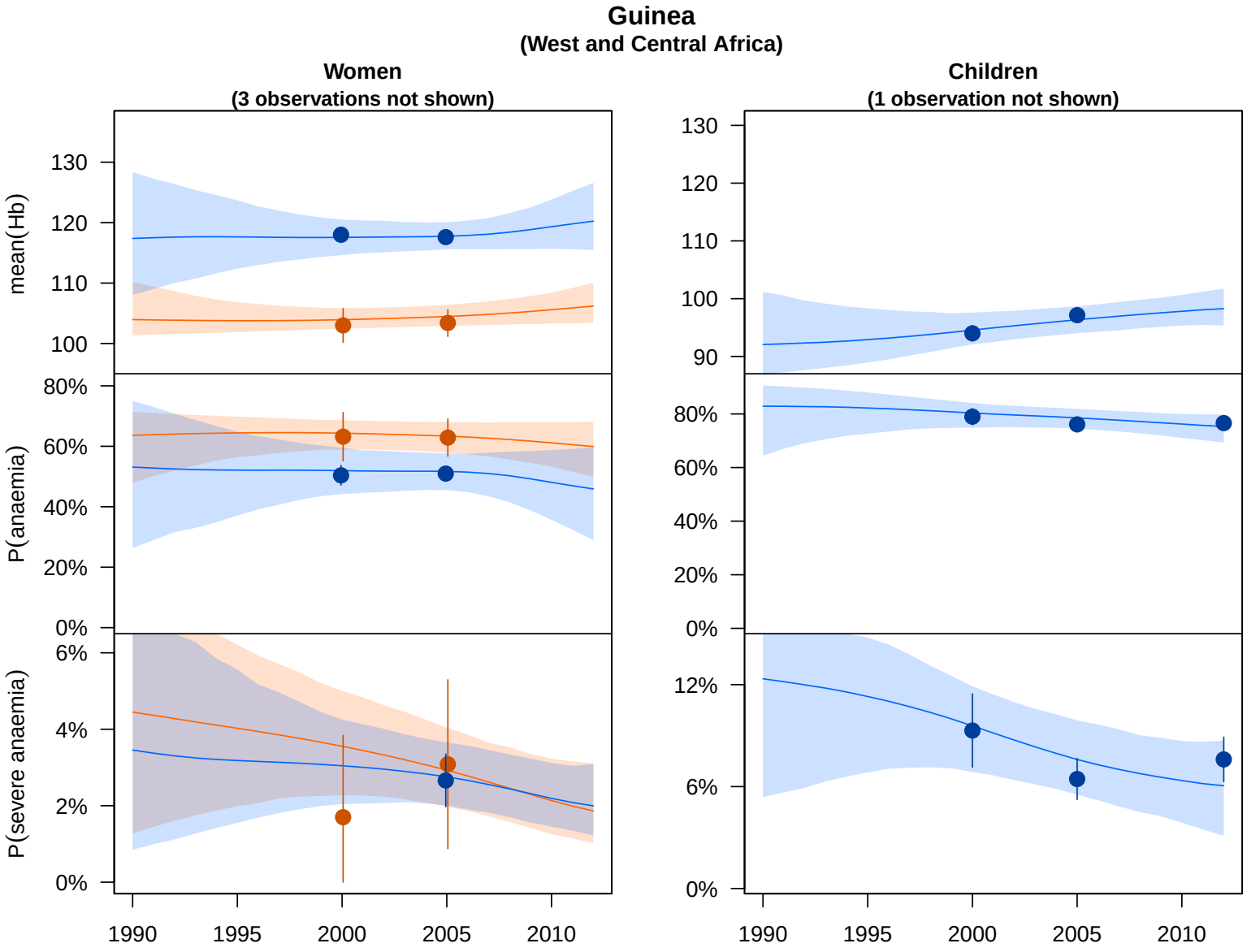
(Andean and Central Latin America and Caribbean)

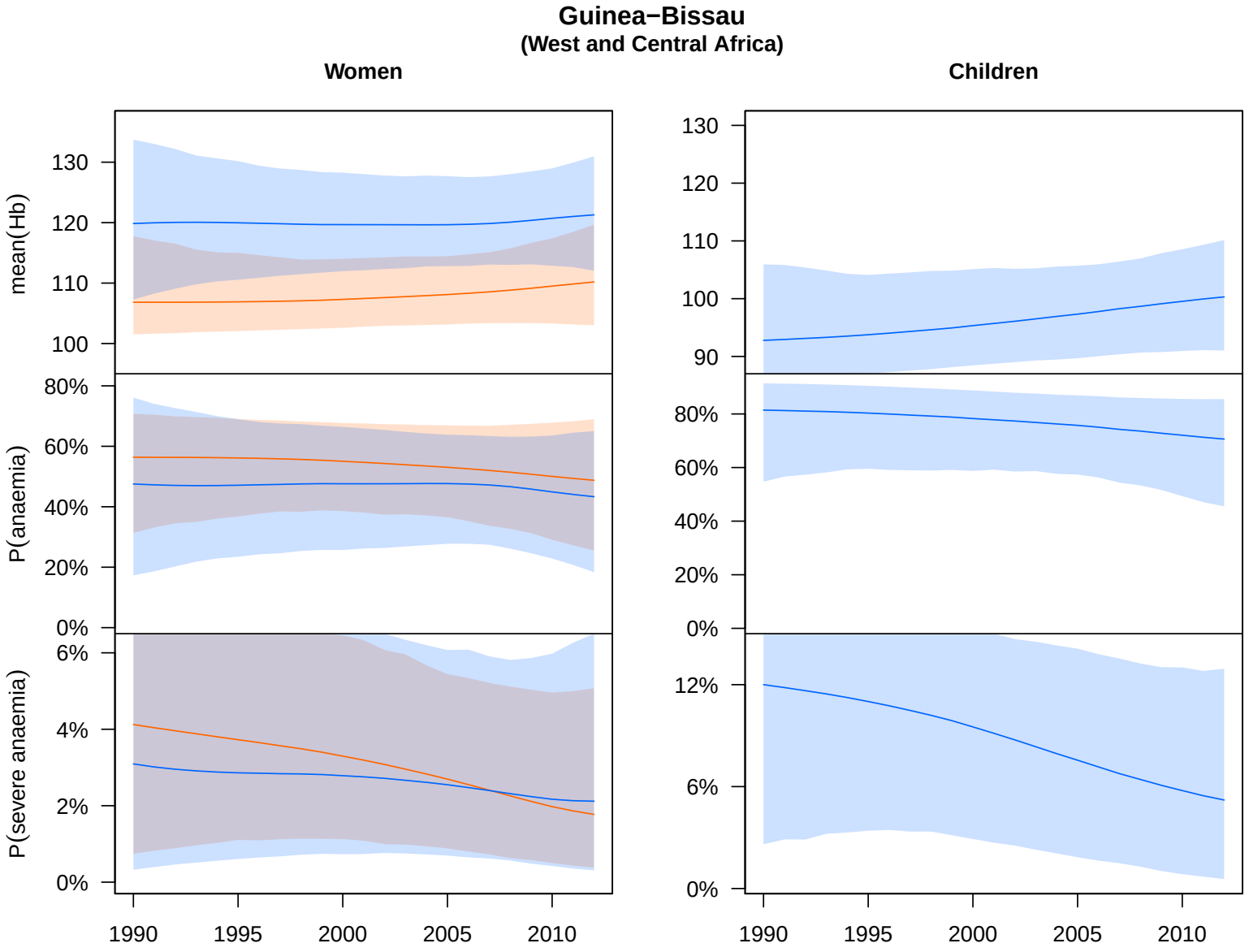


Guatemala

(Andean and Central Latin America and Caribbean)

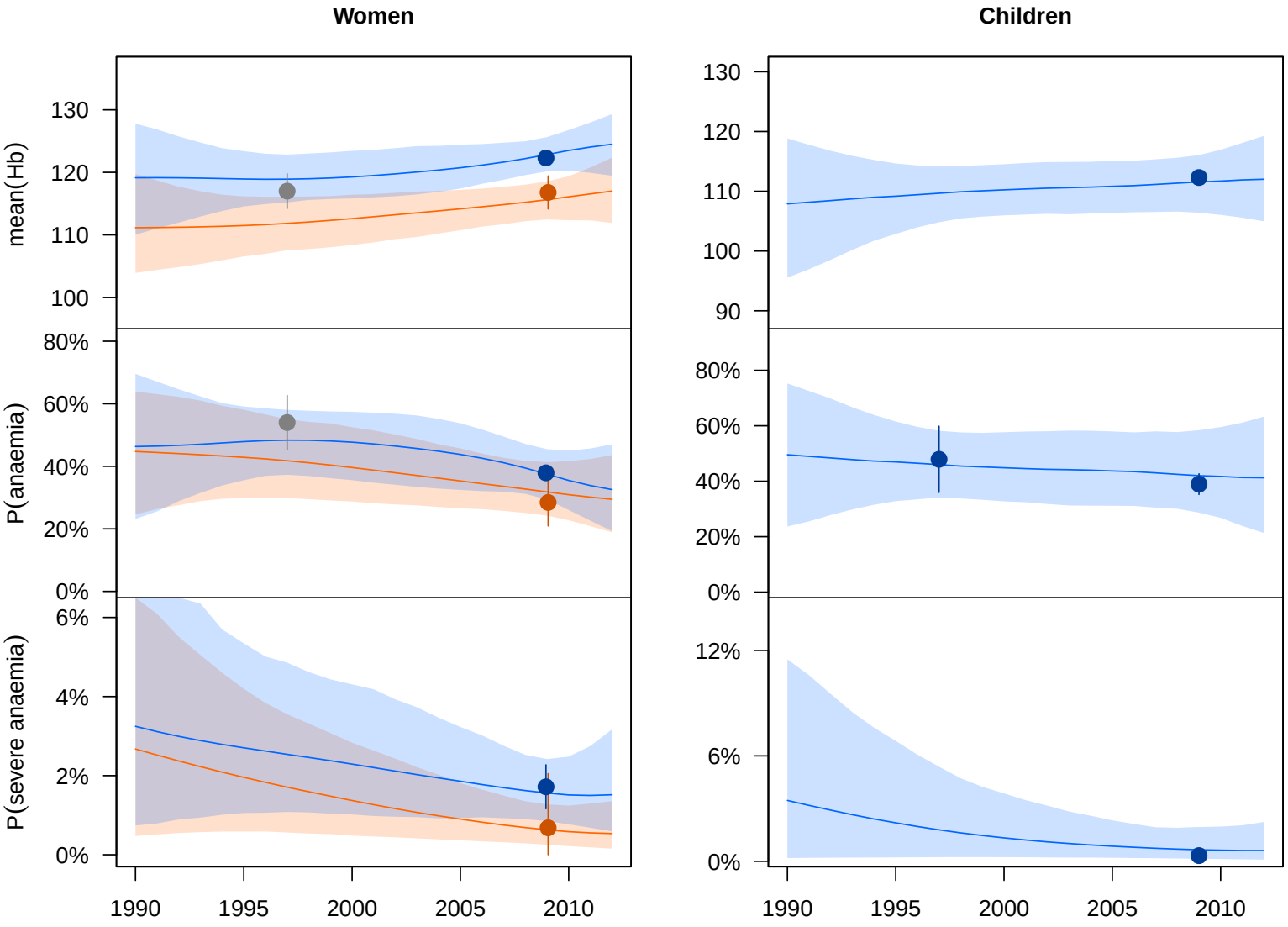


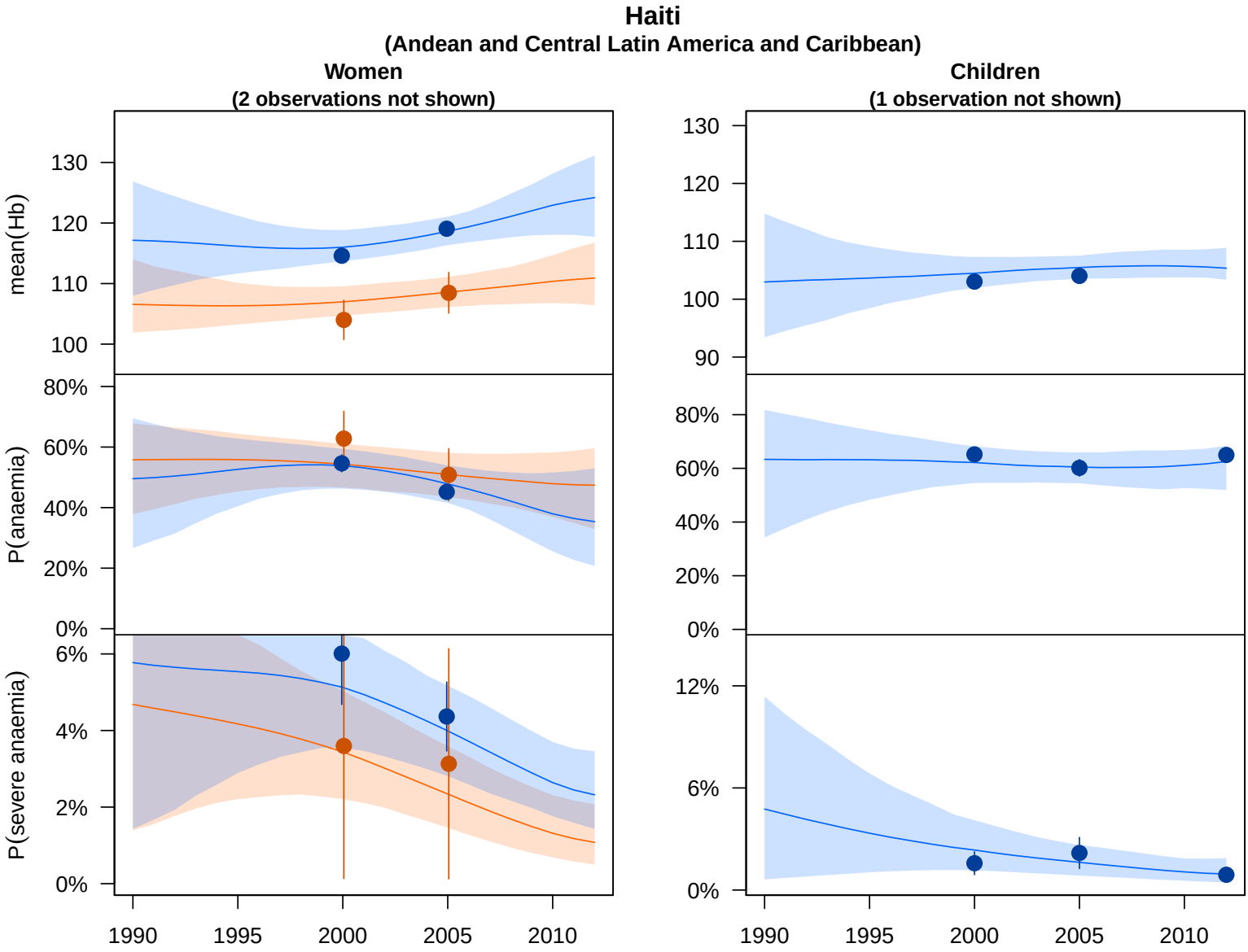

Guinea
(West and Central Africa)
Women
(3 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

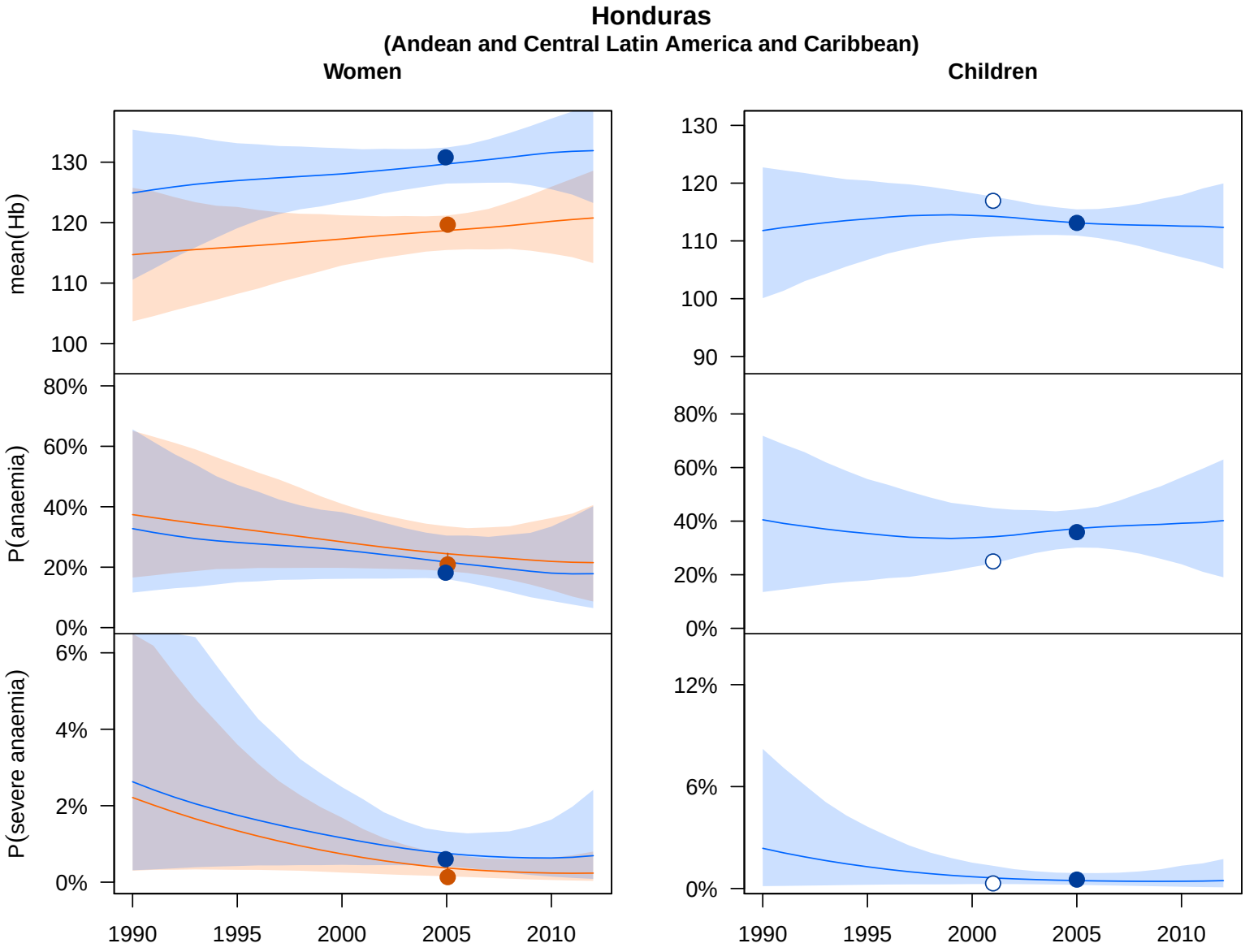

Guinea−Bissau
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

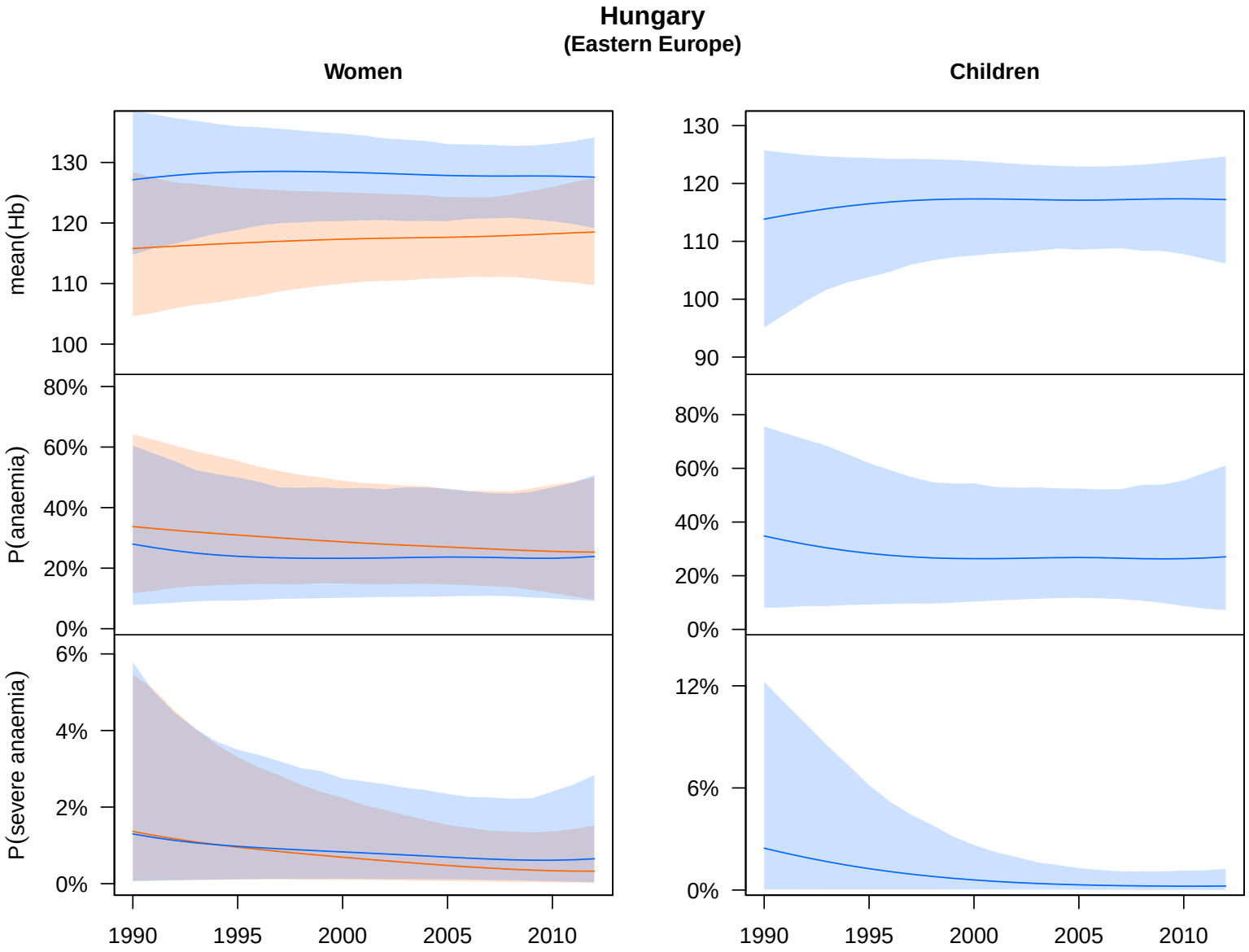
Guyana

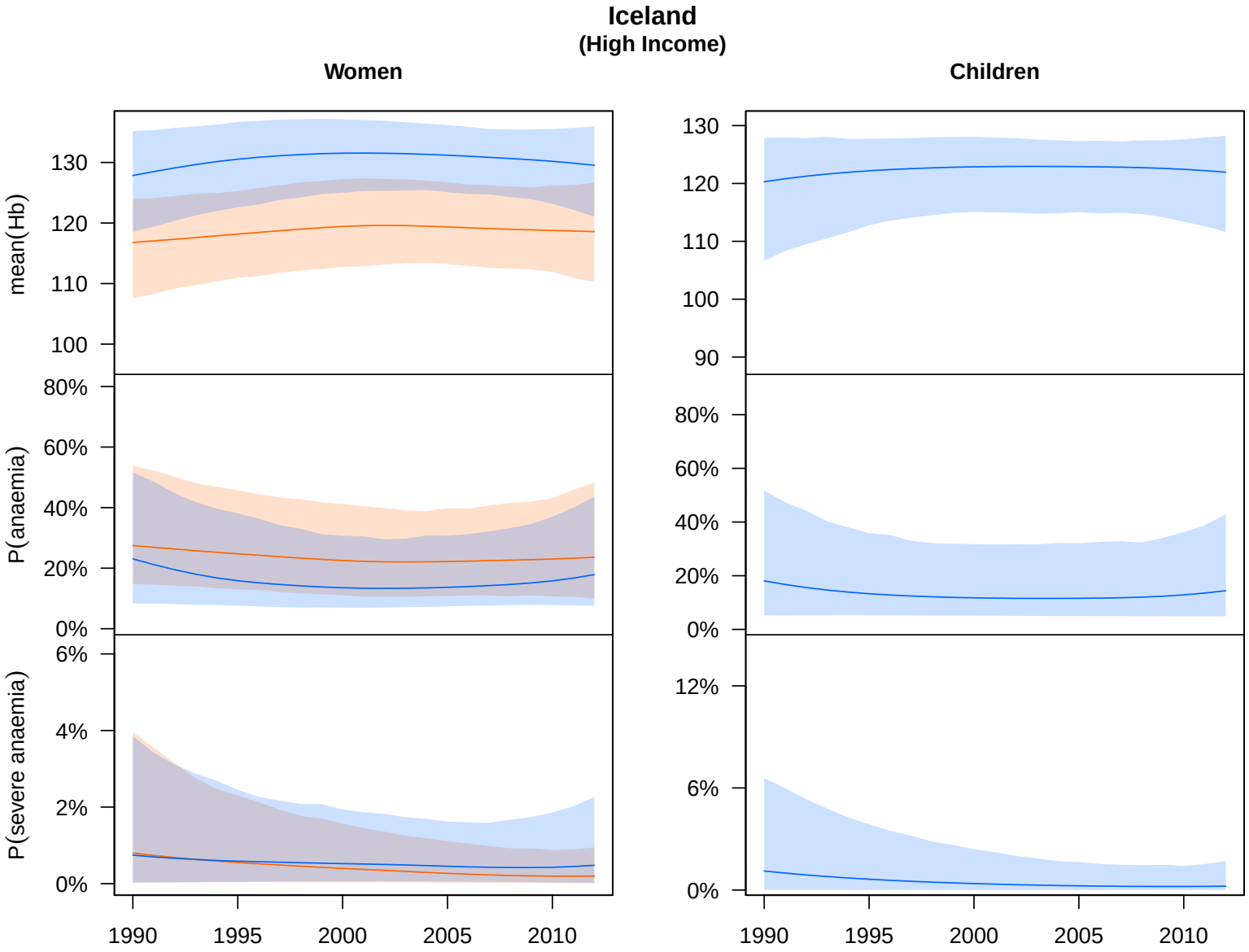
(Andean and Central Latin America and Caribbean)

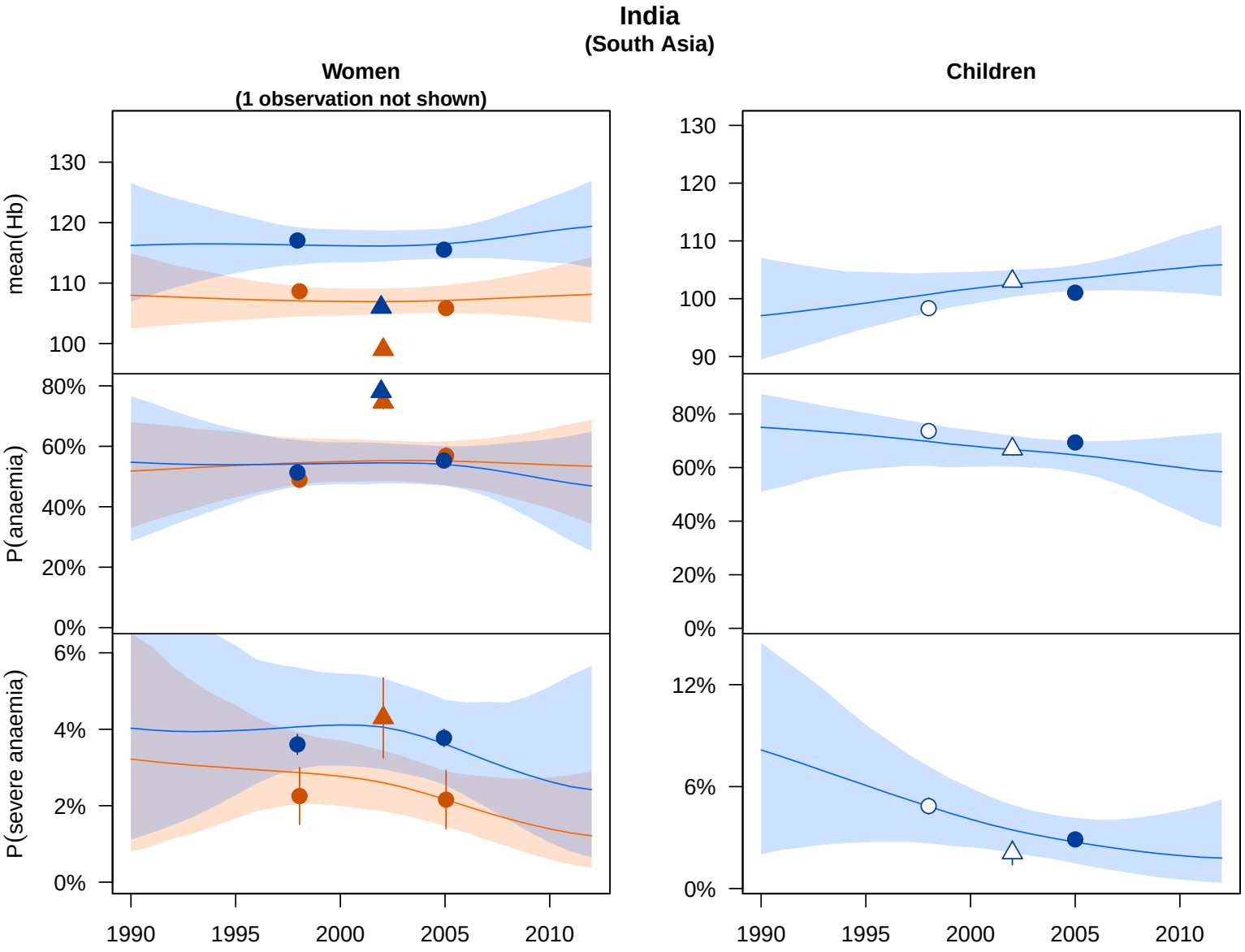


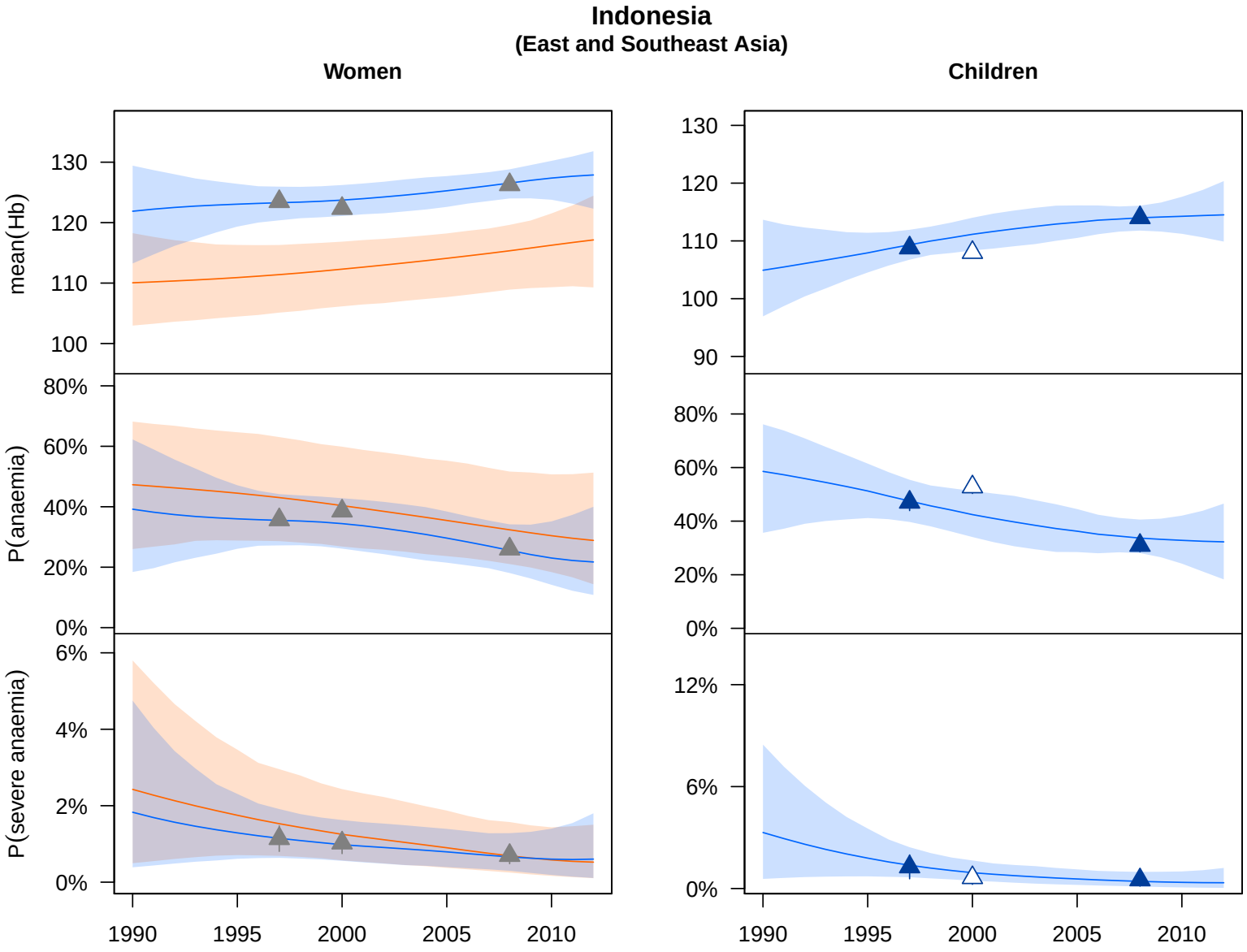

Haiti
(Andean and Central Latin America and Caribbean)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Honduras
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Hungary
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

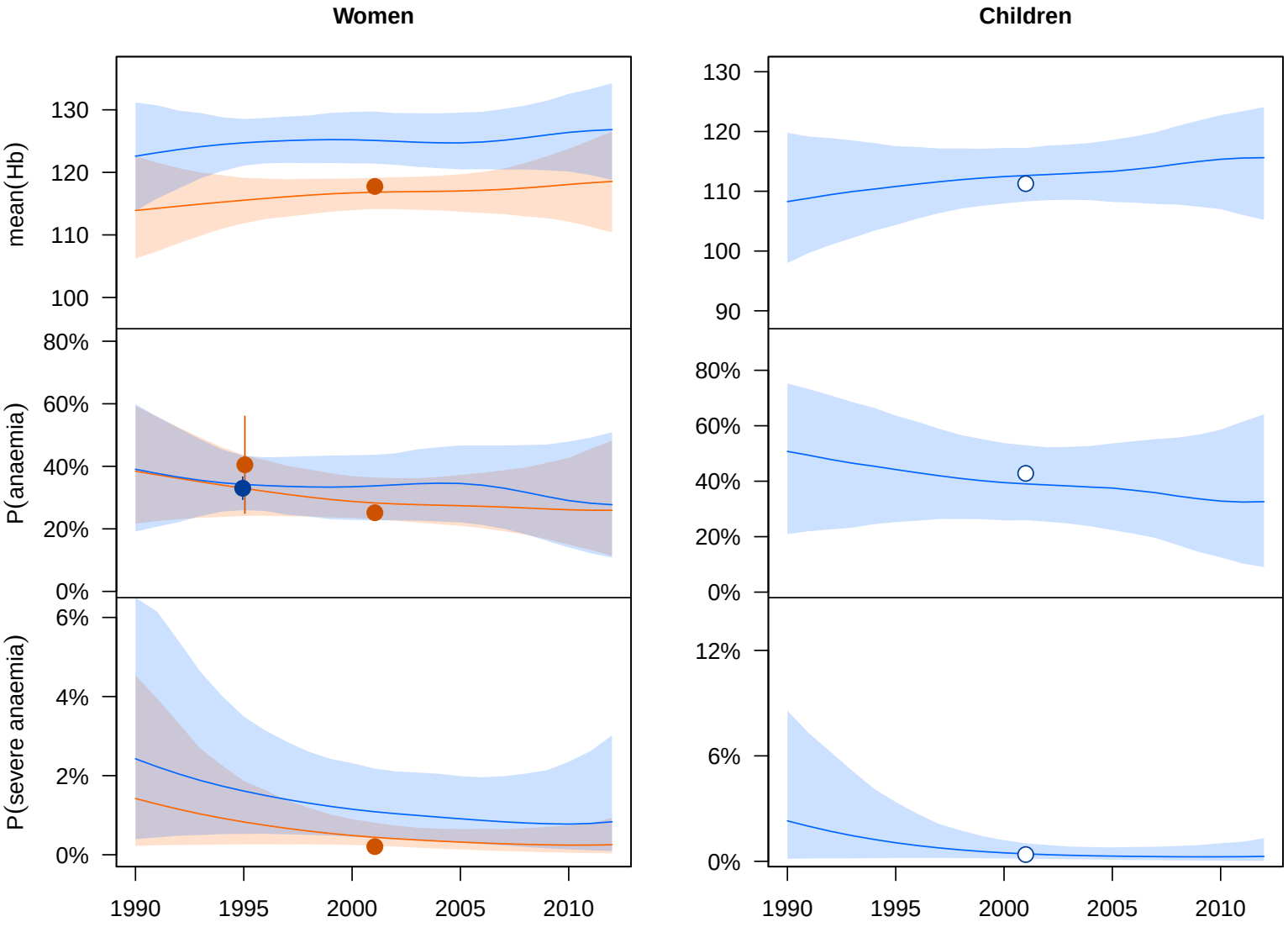

Iceland
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


India
(South Asia)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Indonesia
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

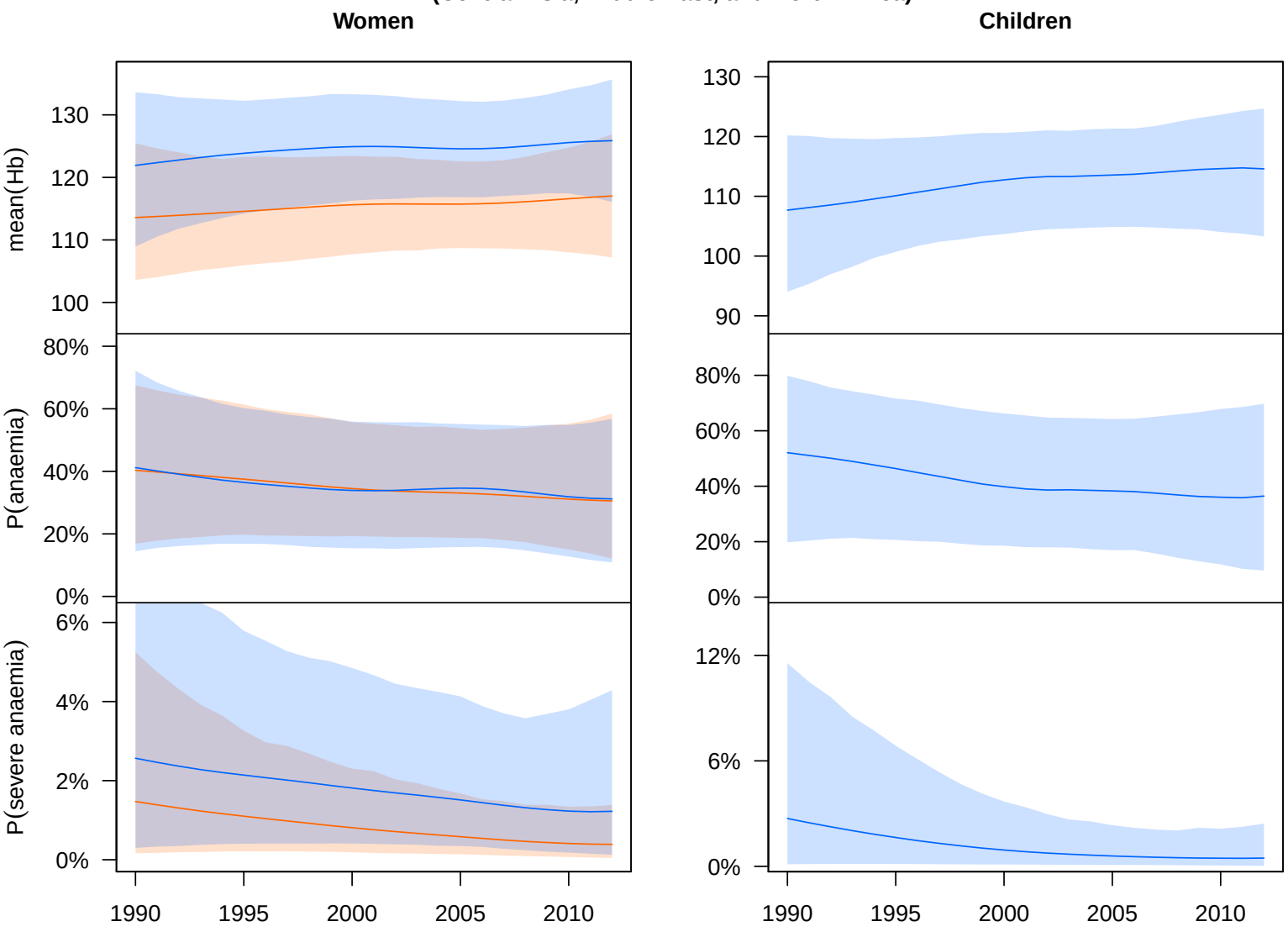
Iran (Islamic Republic of)

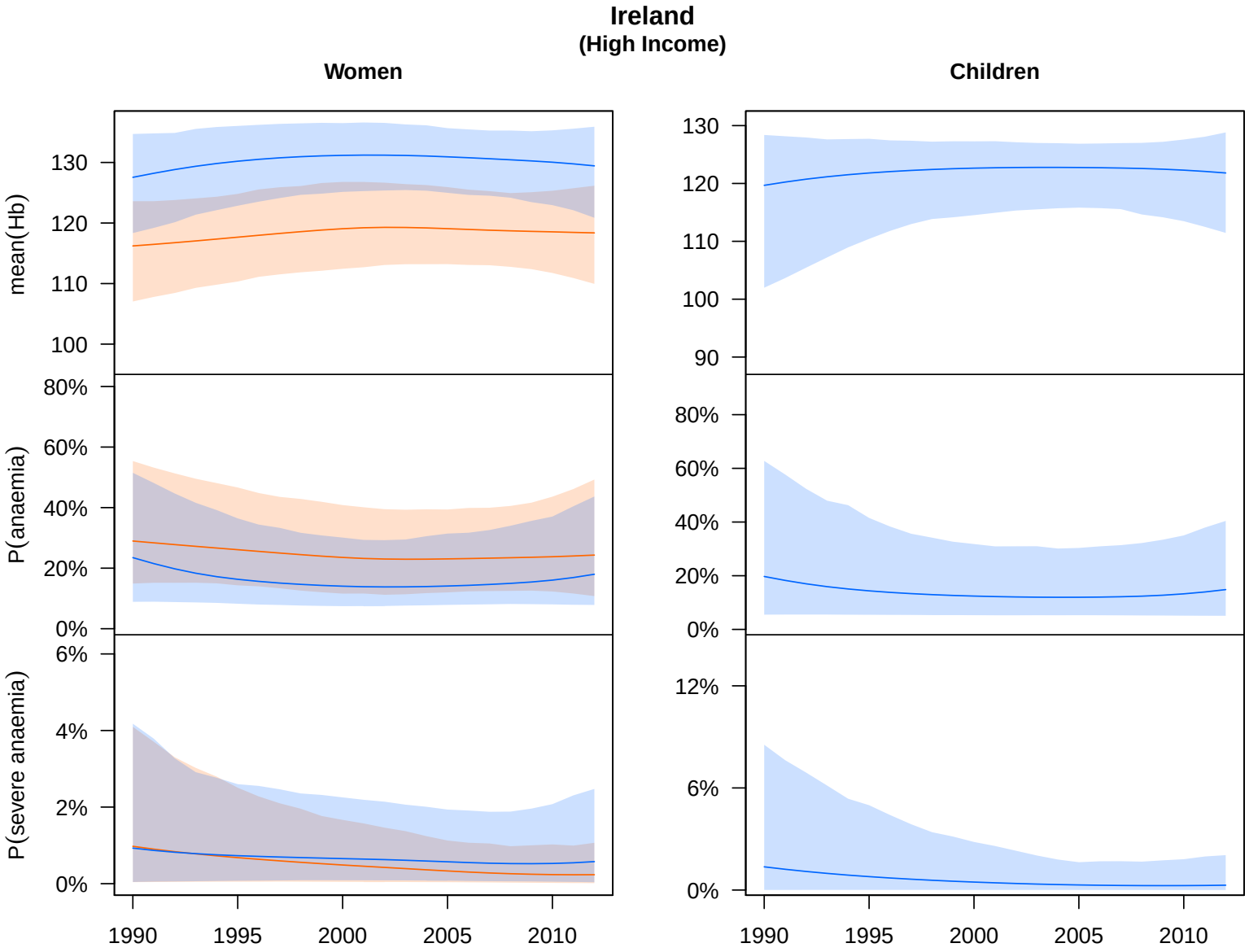
(Central Asia, Middle East, and North Africa)

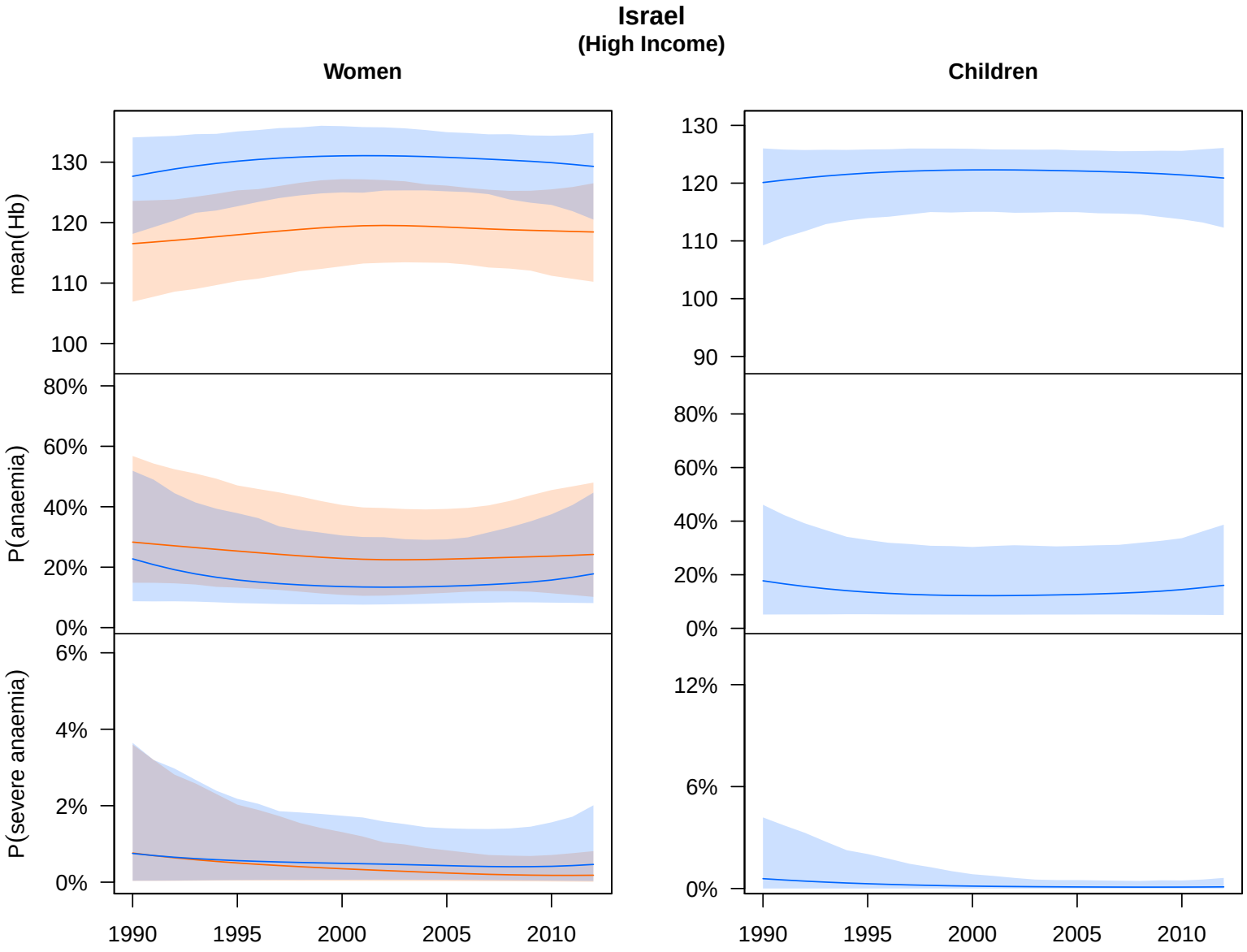


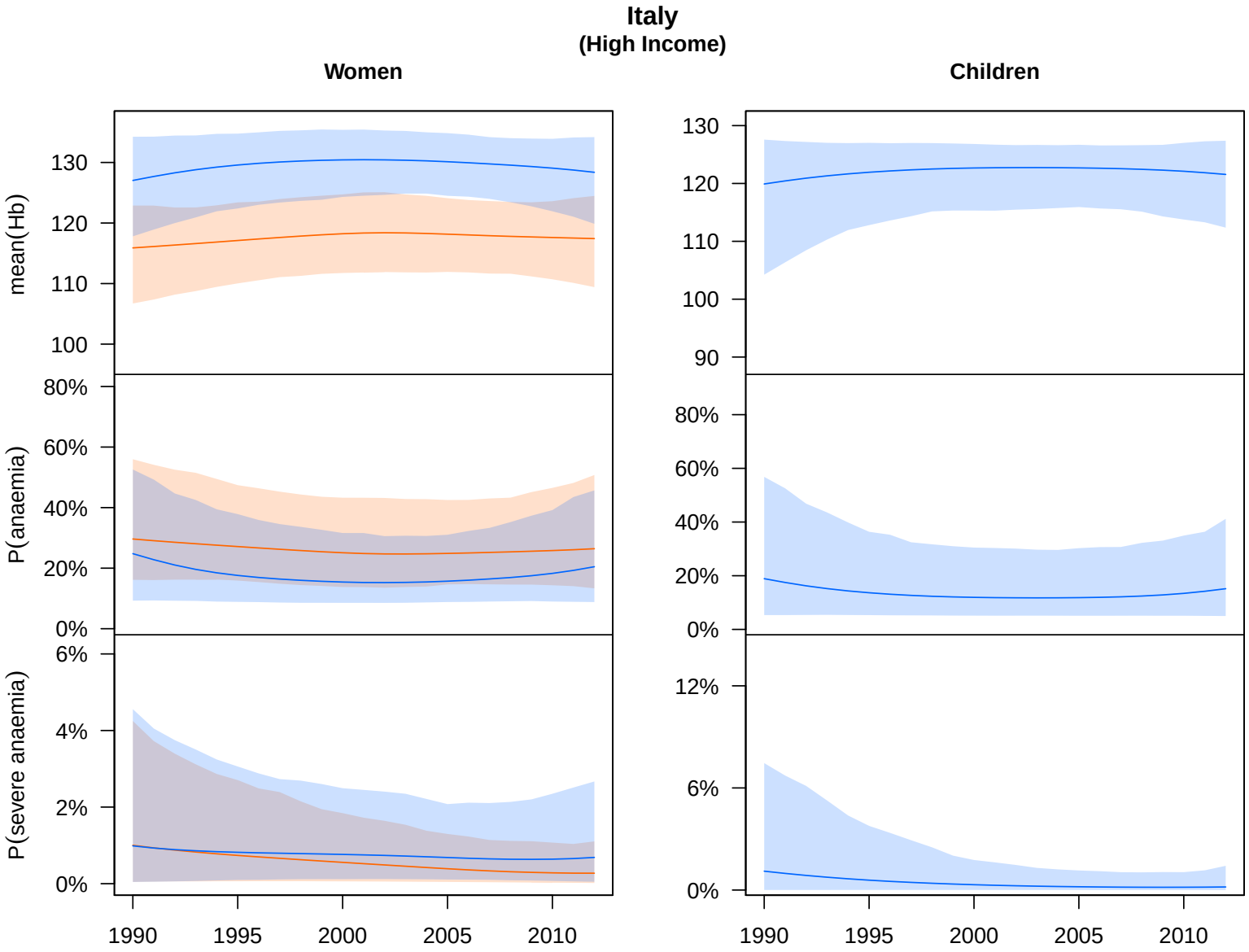
Iraq

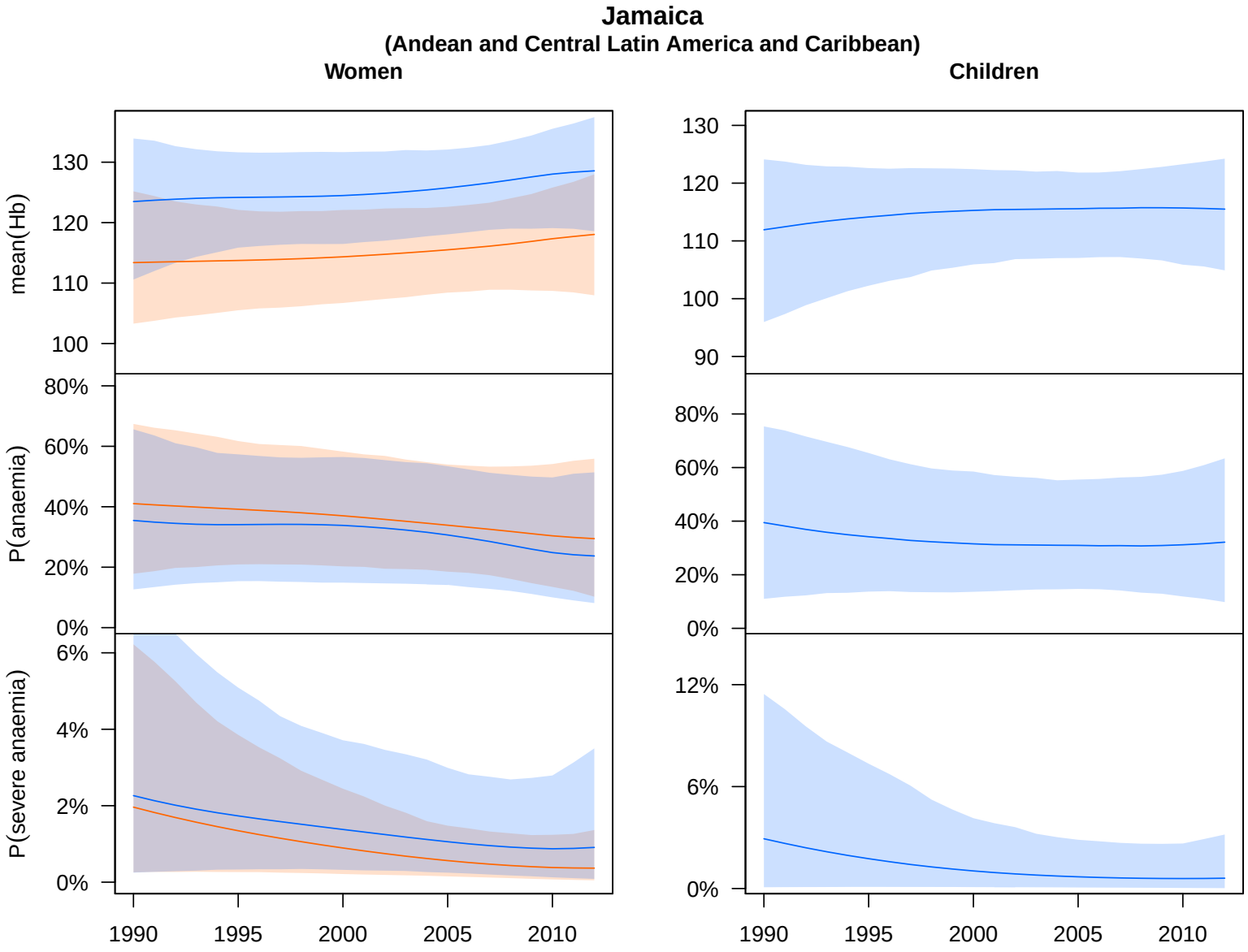
(Central Asia, Middle East, and North Africa)

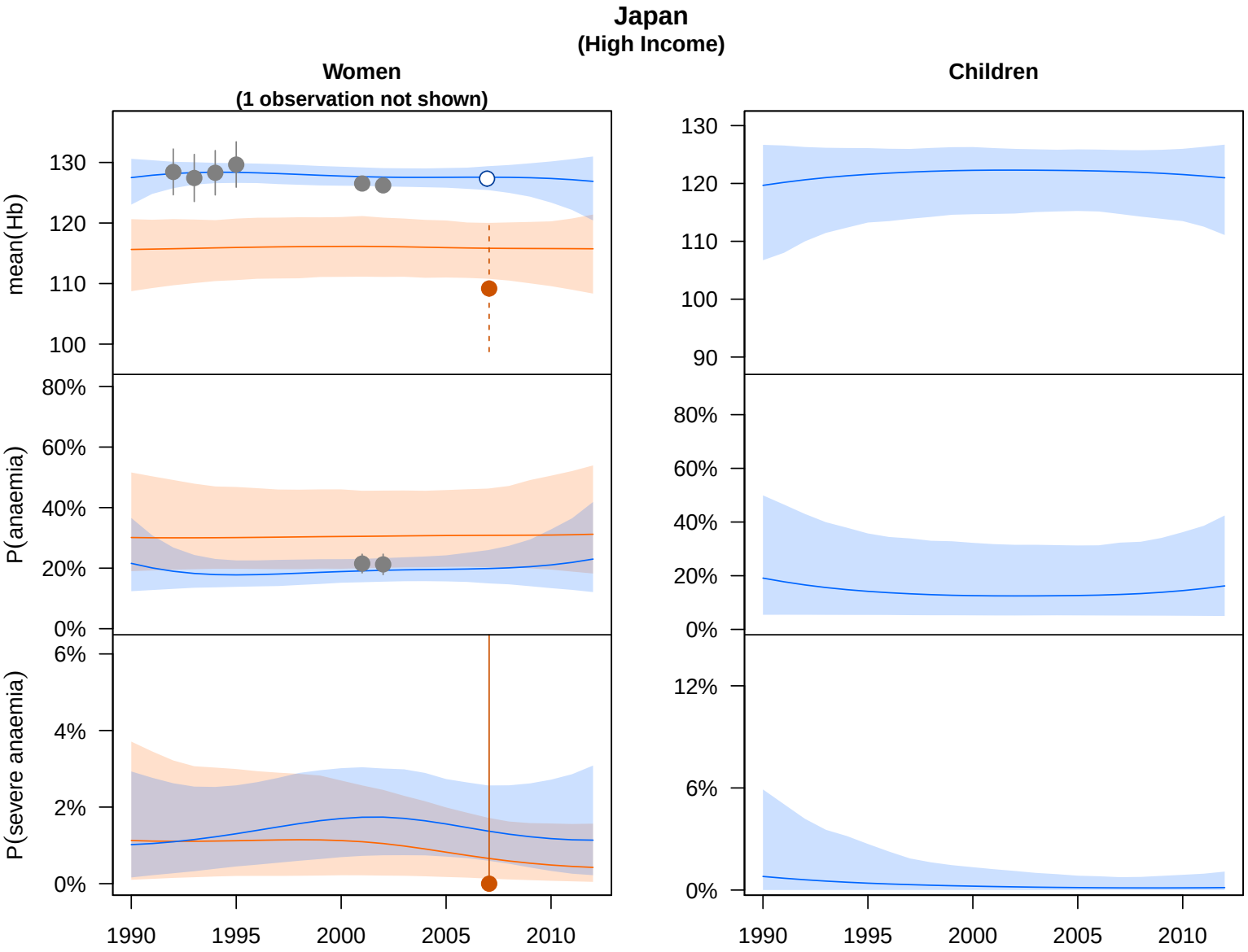


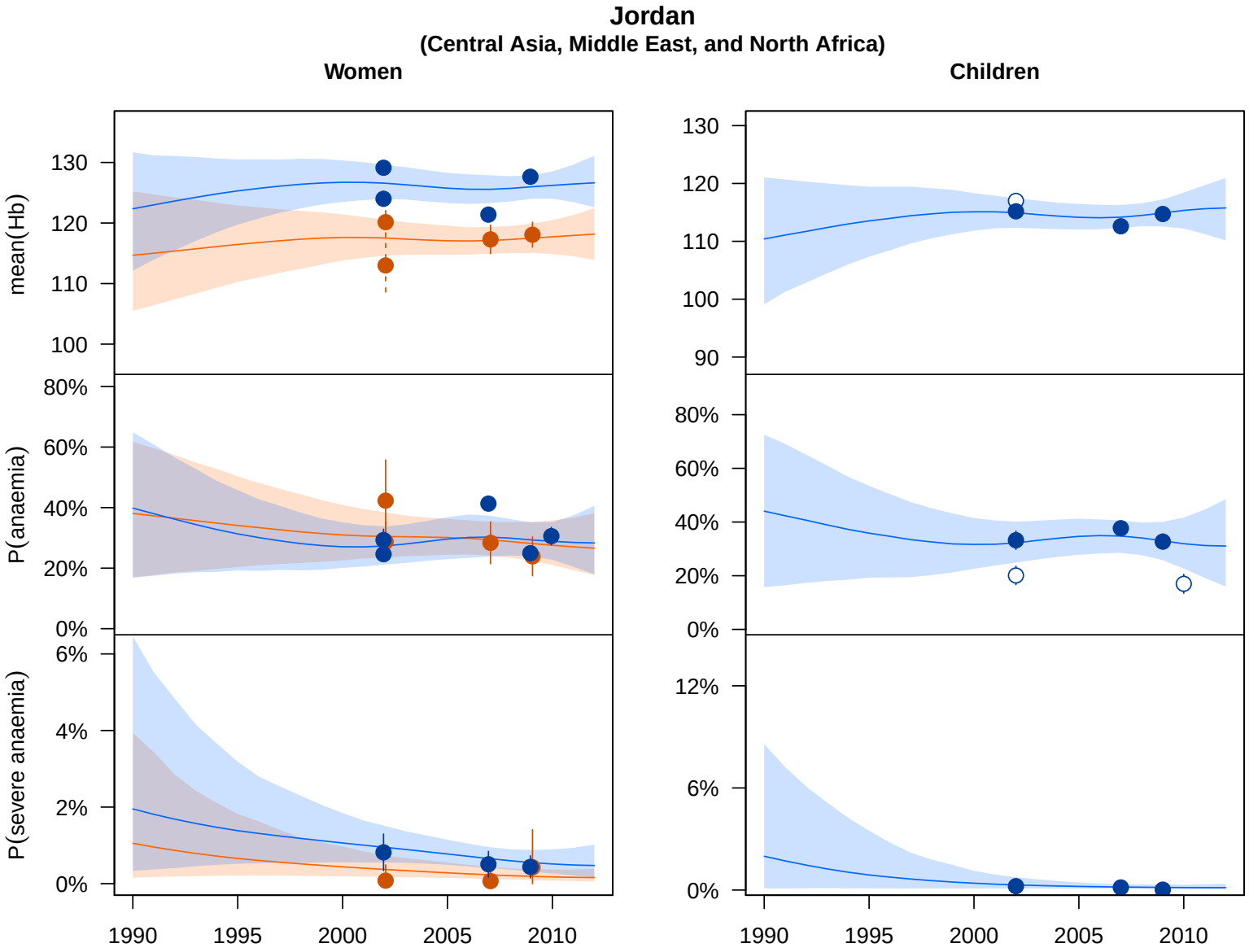

Ireland
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

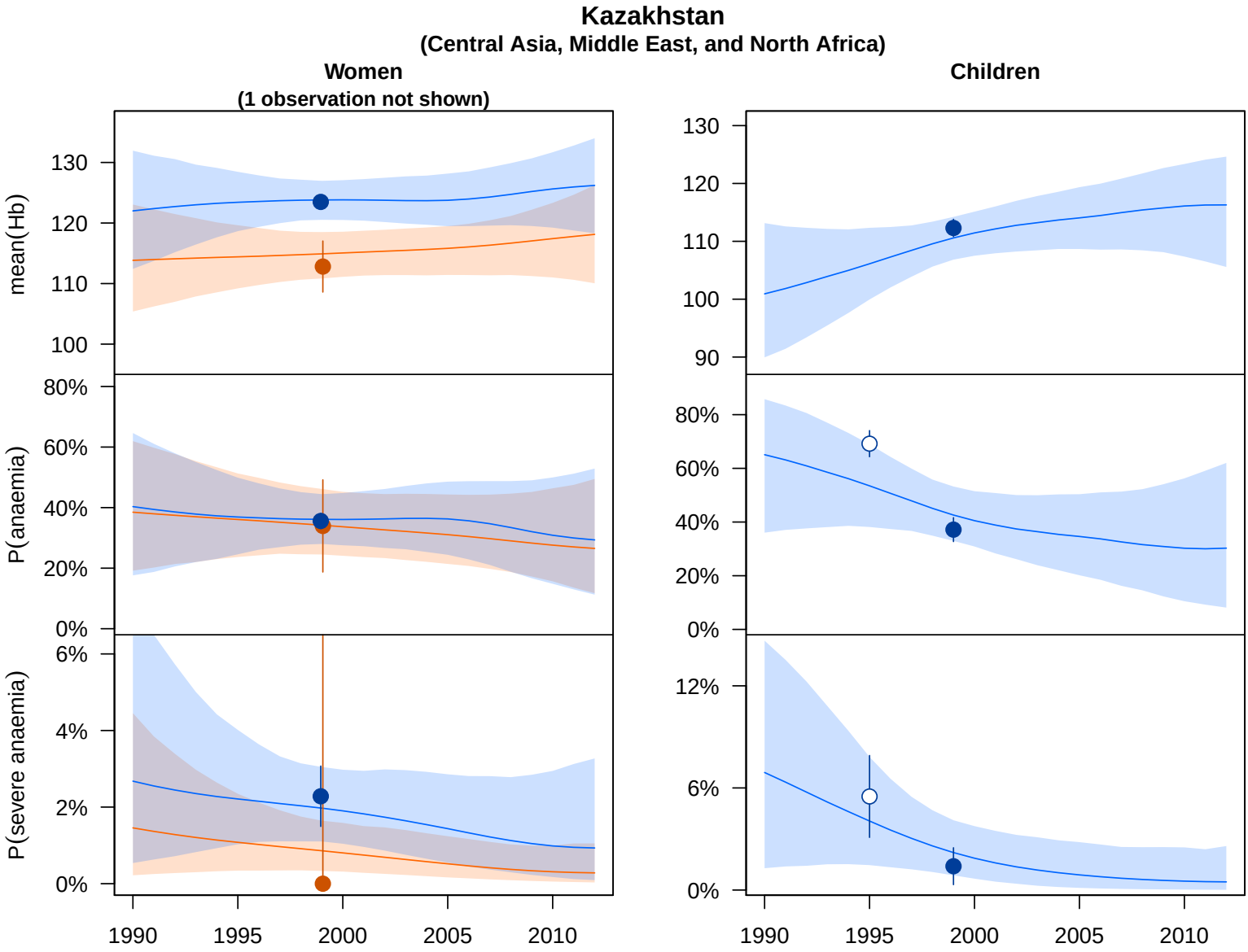

Israel
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

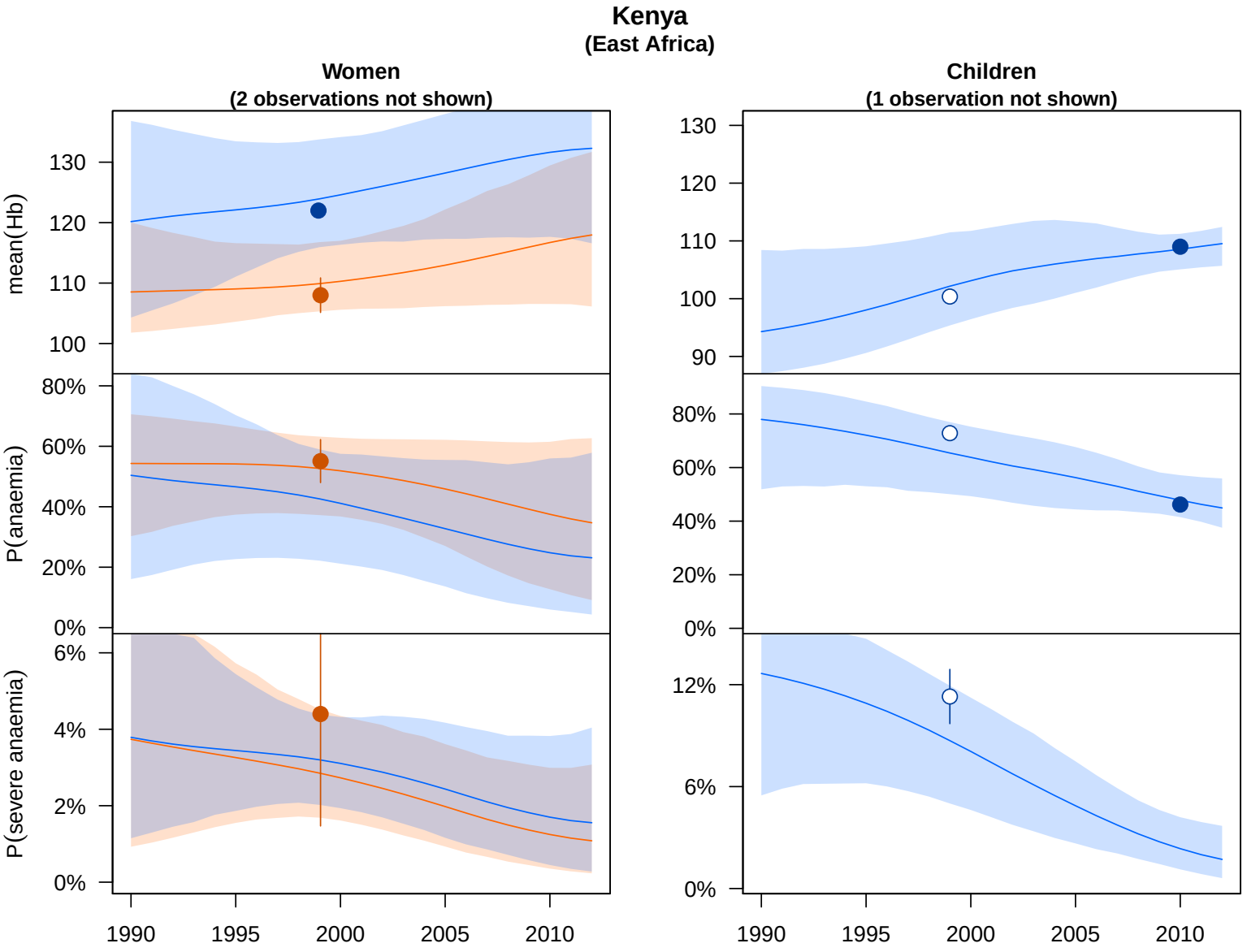

Italy
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

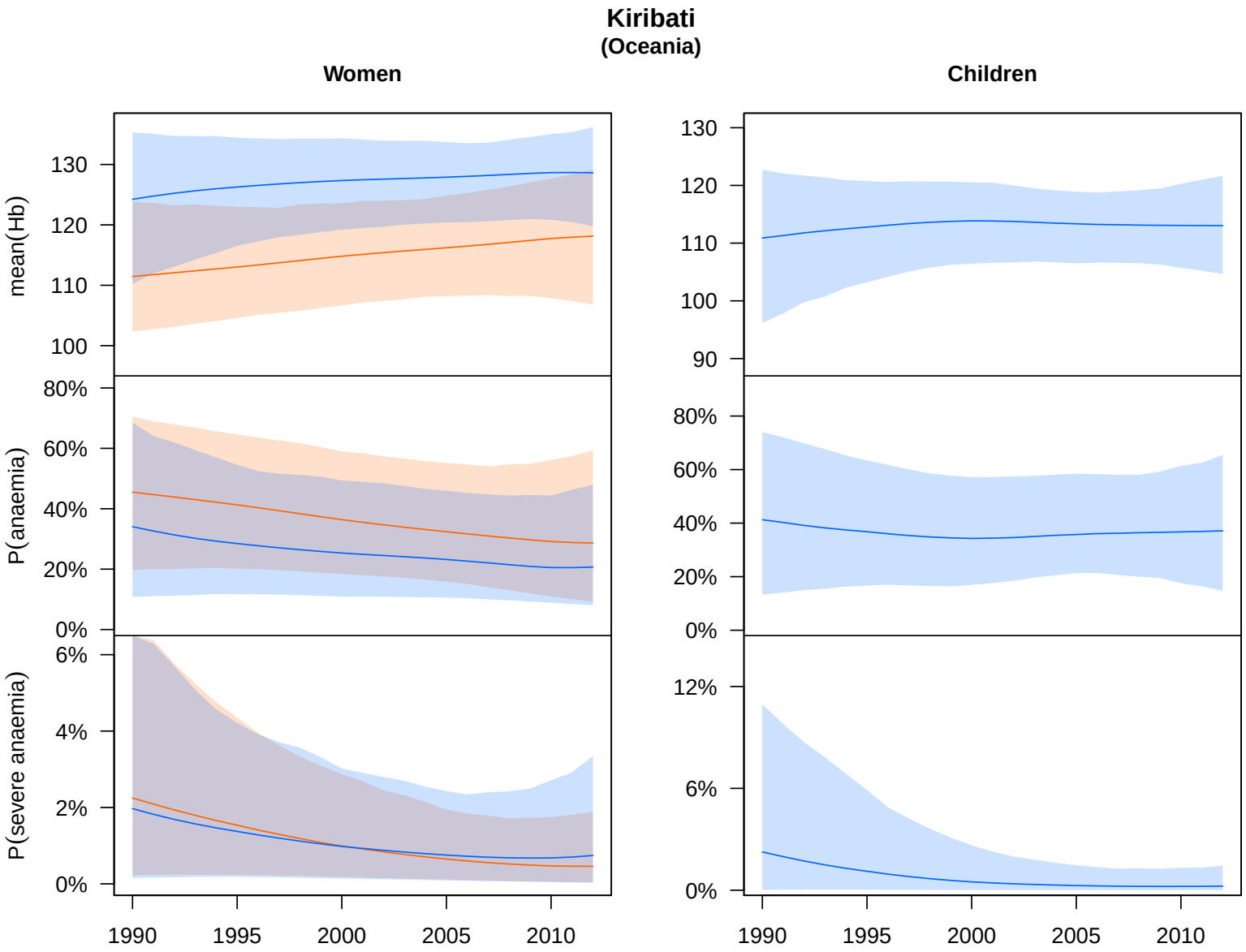

Jamaica
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Japan
(High Income)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Jordan
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

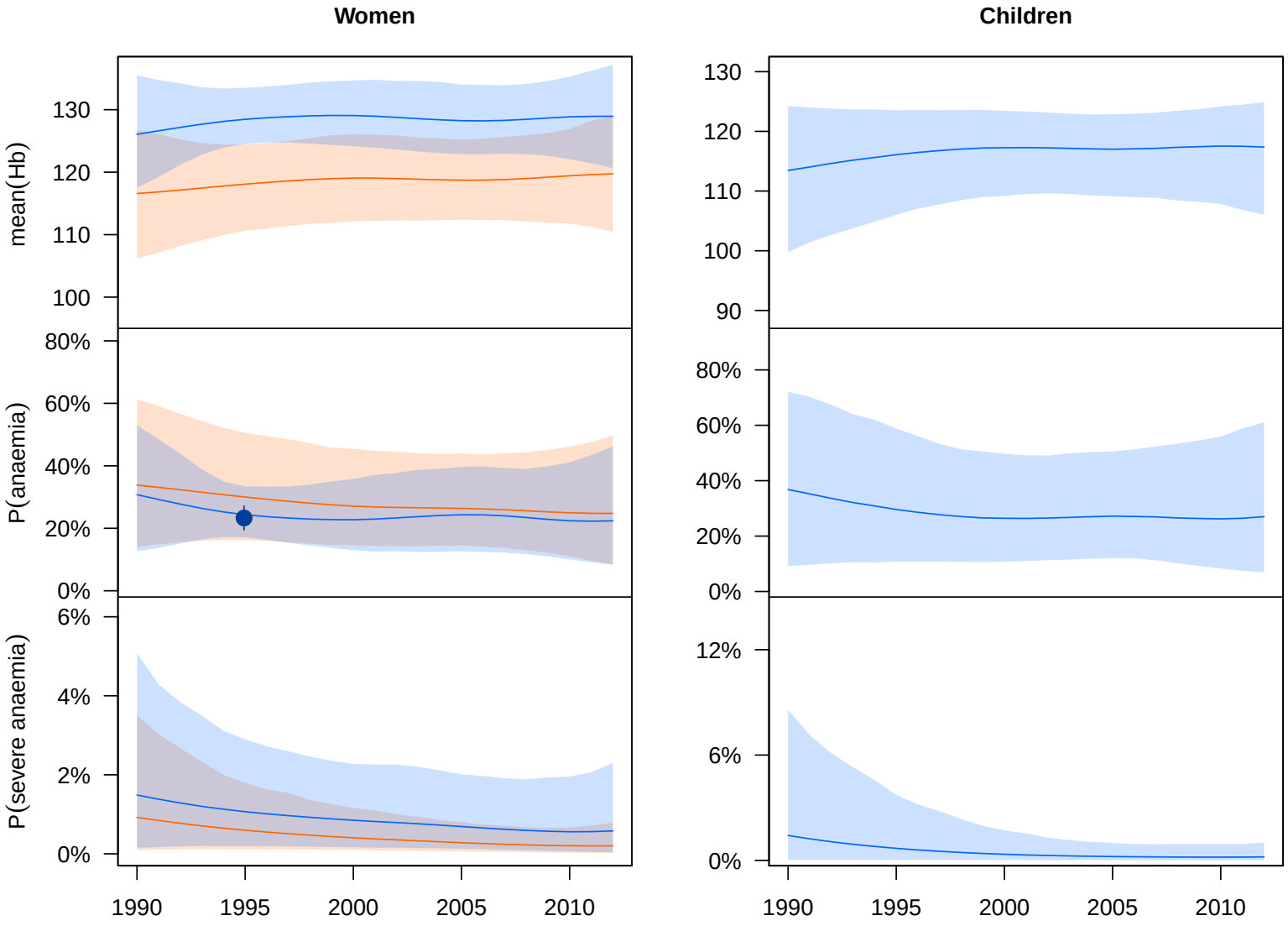

Kazakhstan
(Central Asia, Middle East, and North Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

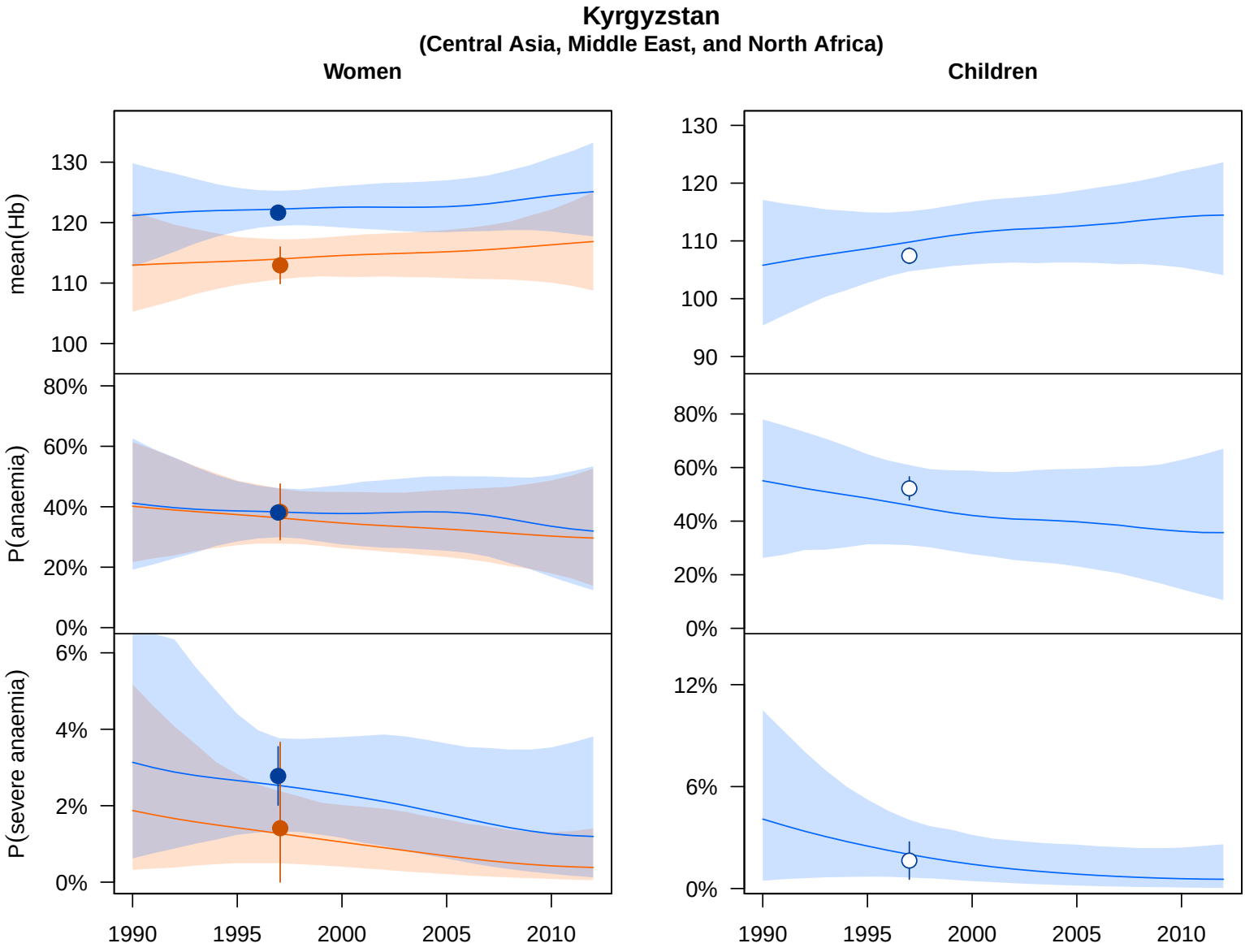

Kenya
(East Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Kiribati
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

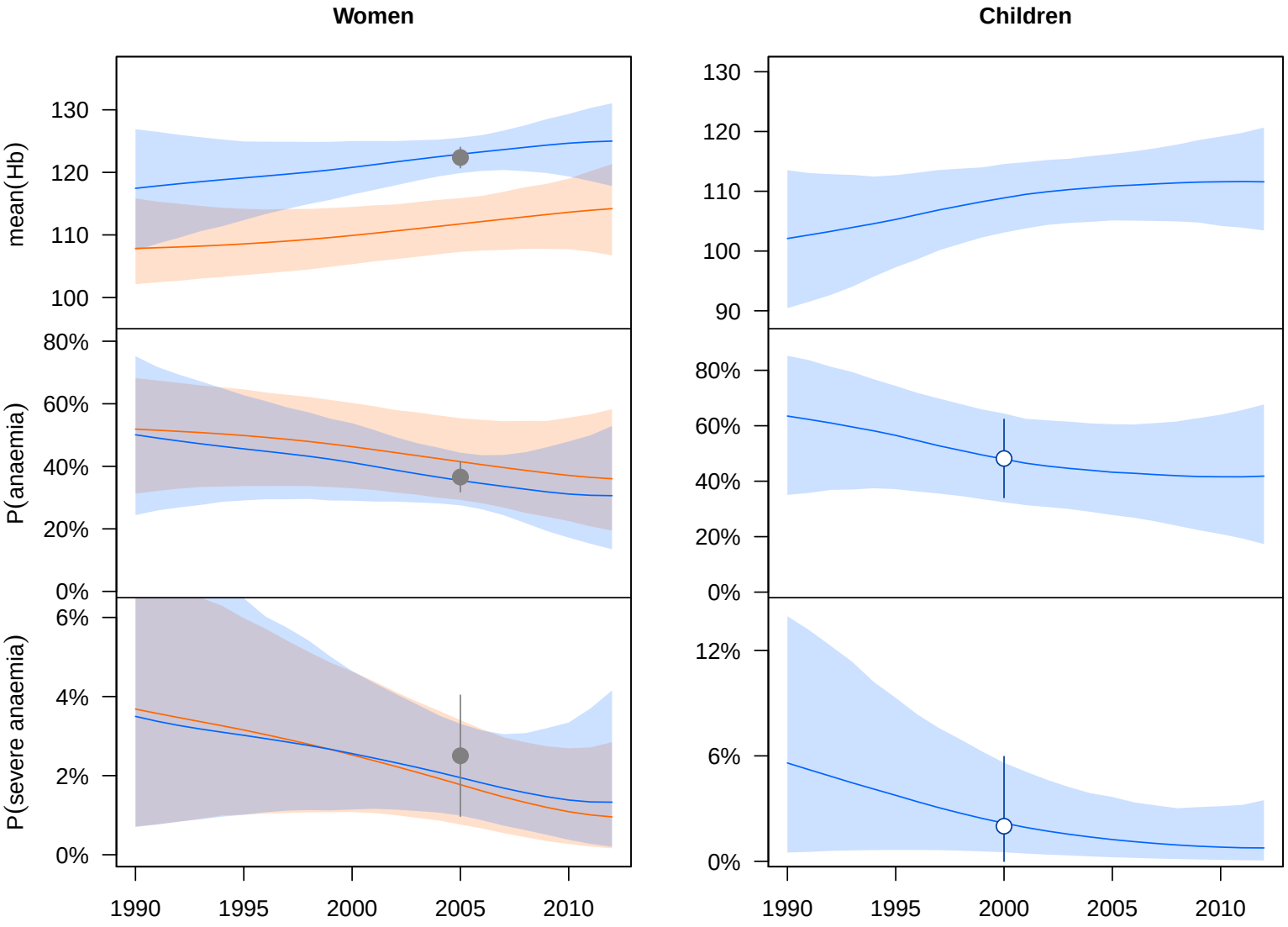
Kuwait

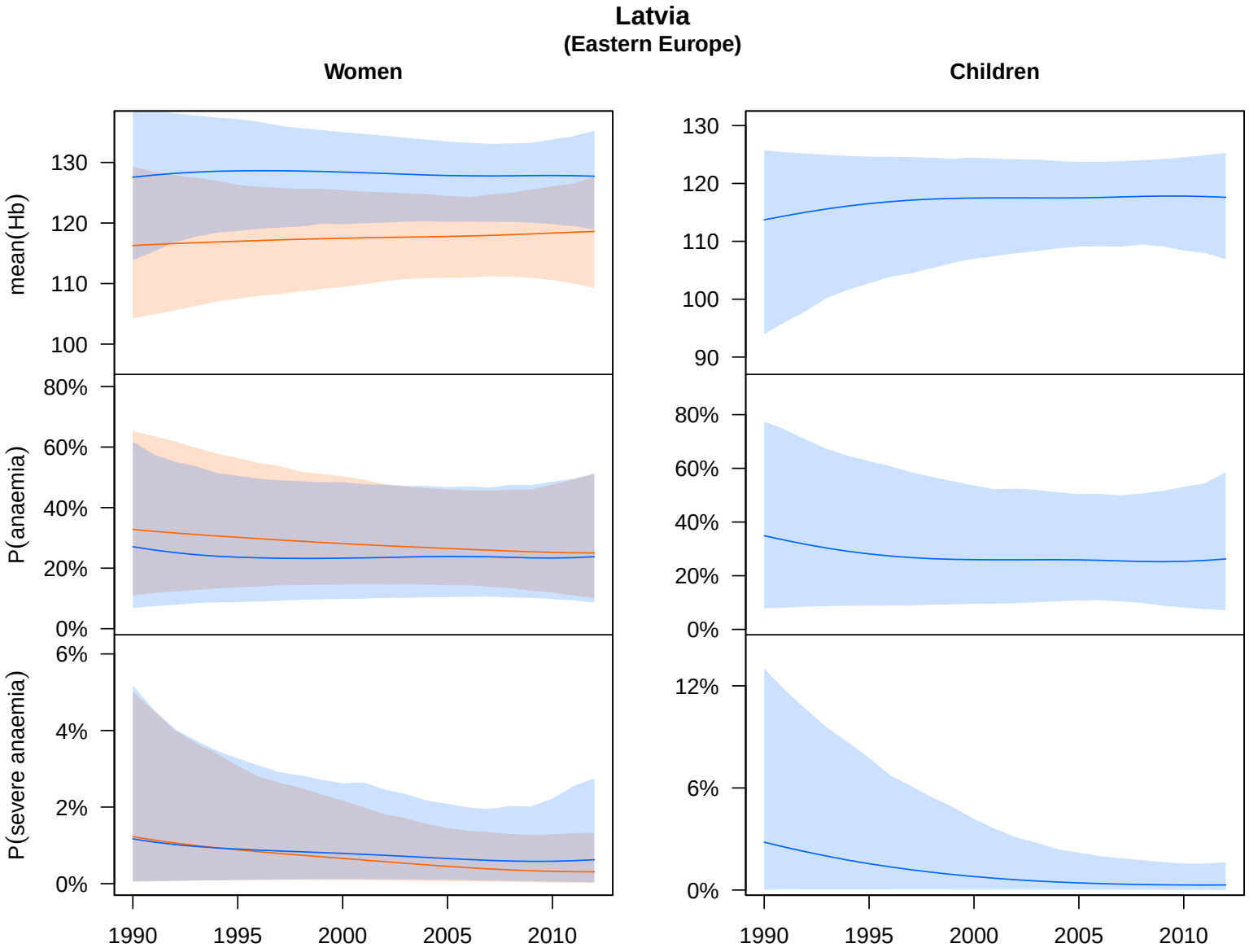
(Central Asia, Middle East, and North Africa)




Kyrgyzstan
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

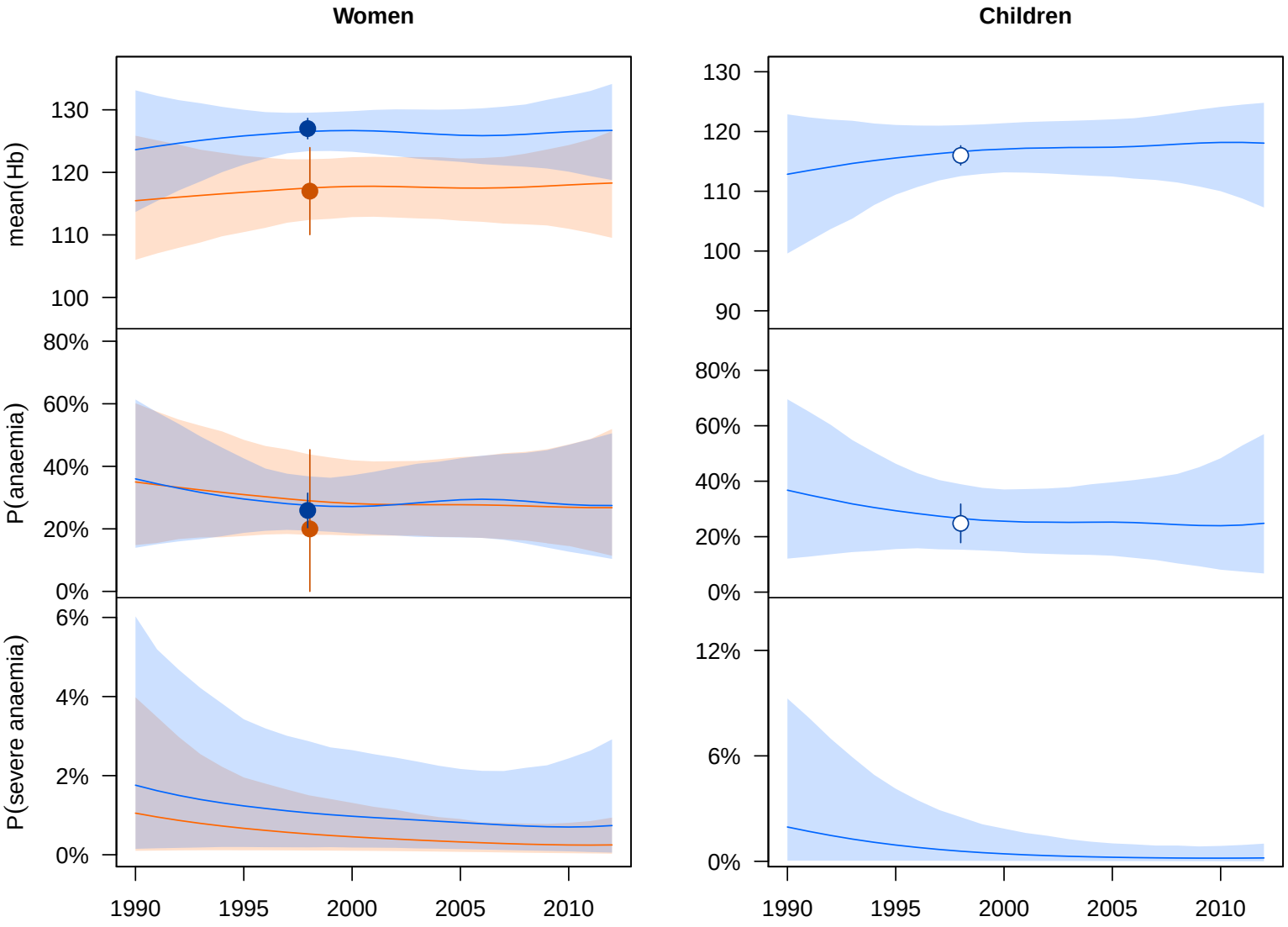
Lao People's Democratic Republic
(East and Southeast Asia)

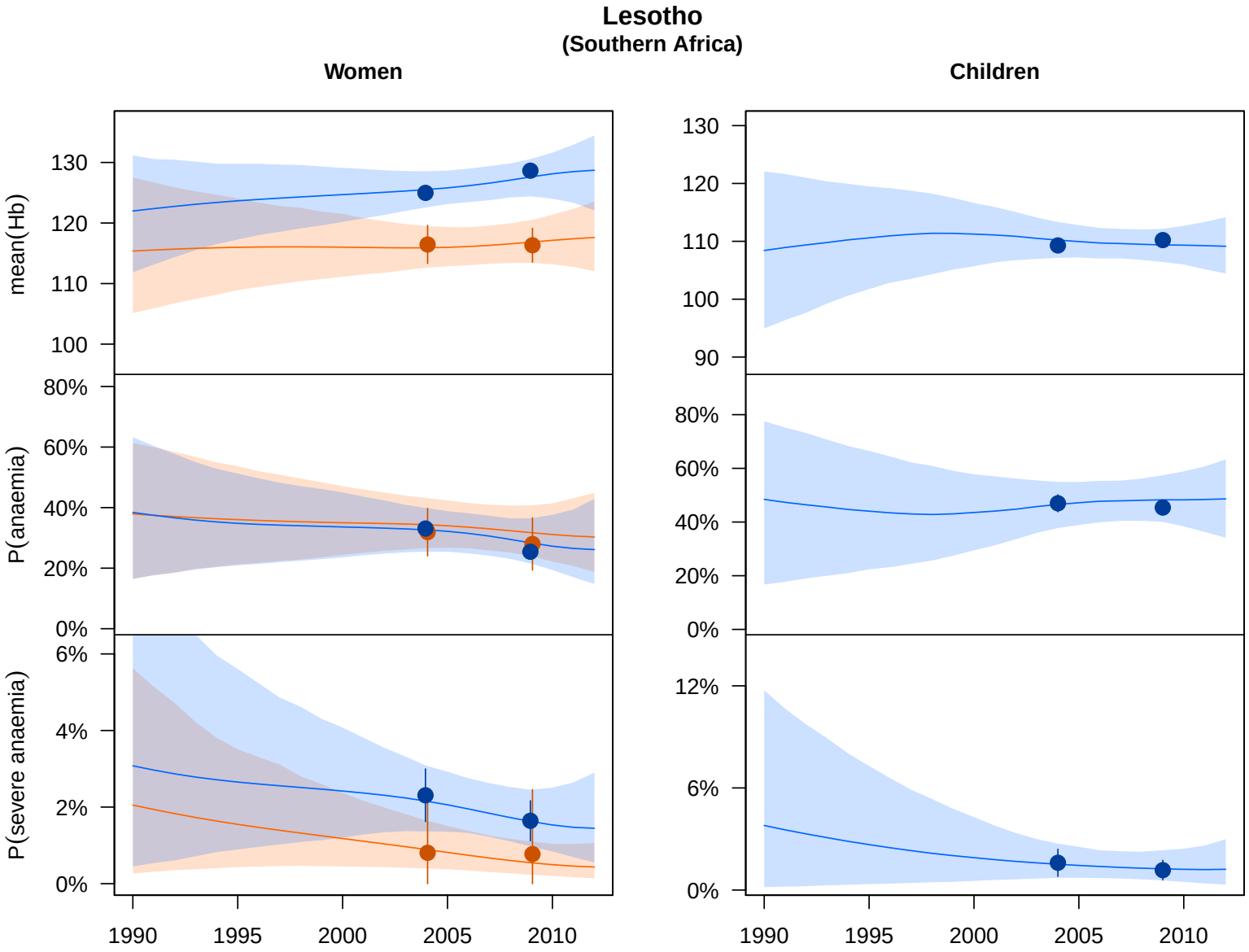



Latvia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

Lebanon

(Central Asia, Middle East, and North Africa)




Lesotho
(Southern Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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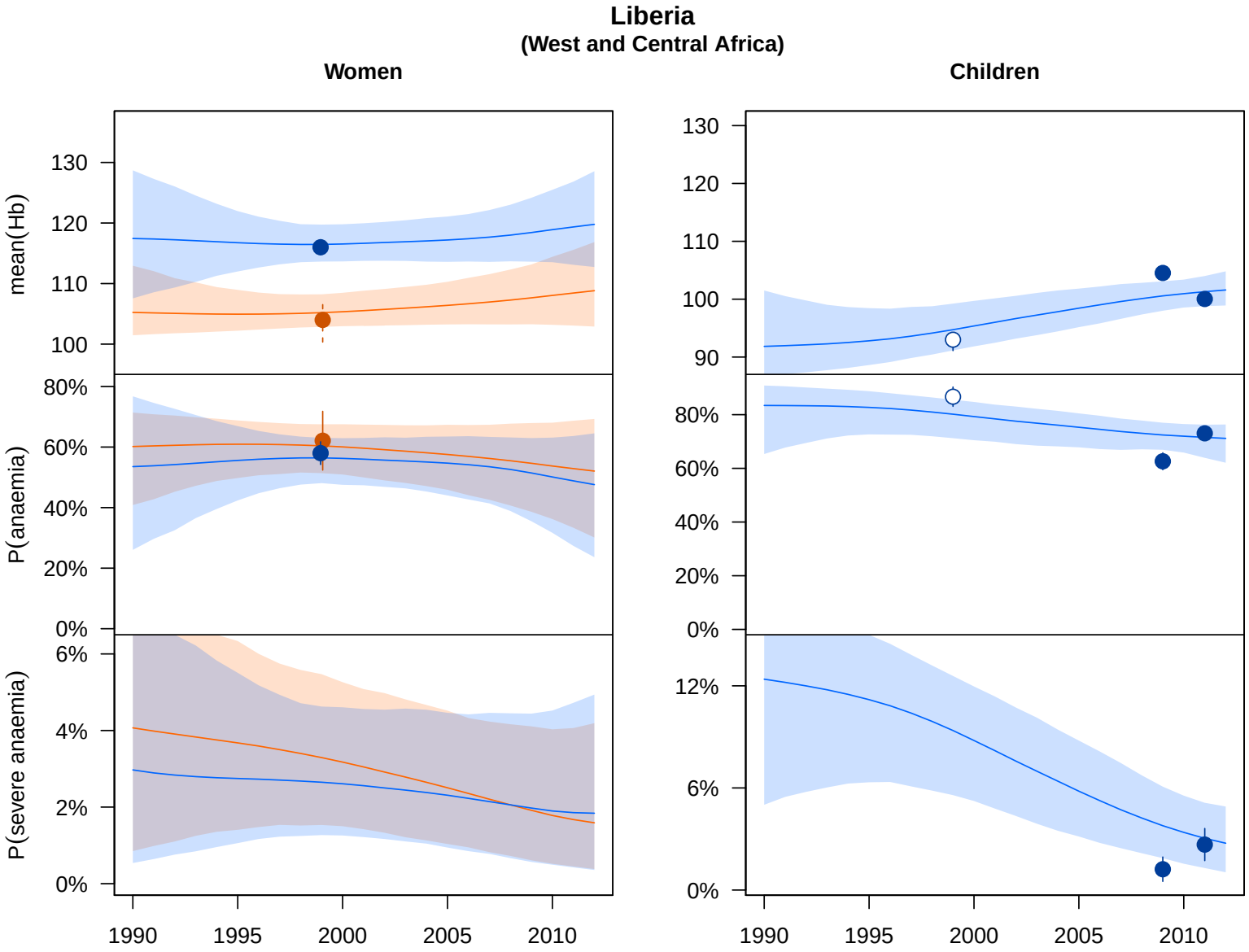
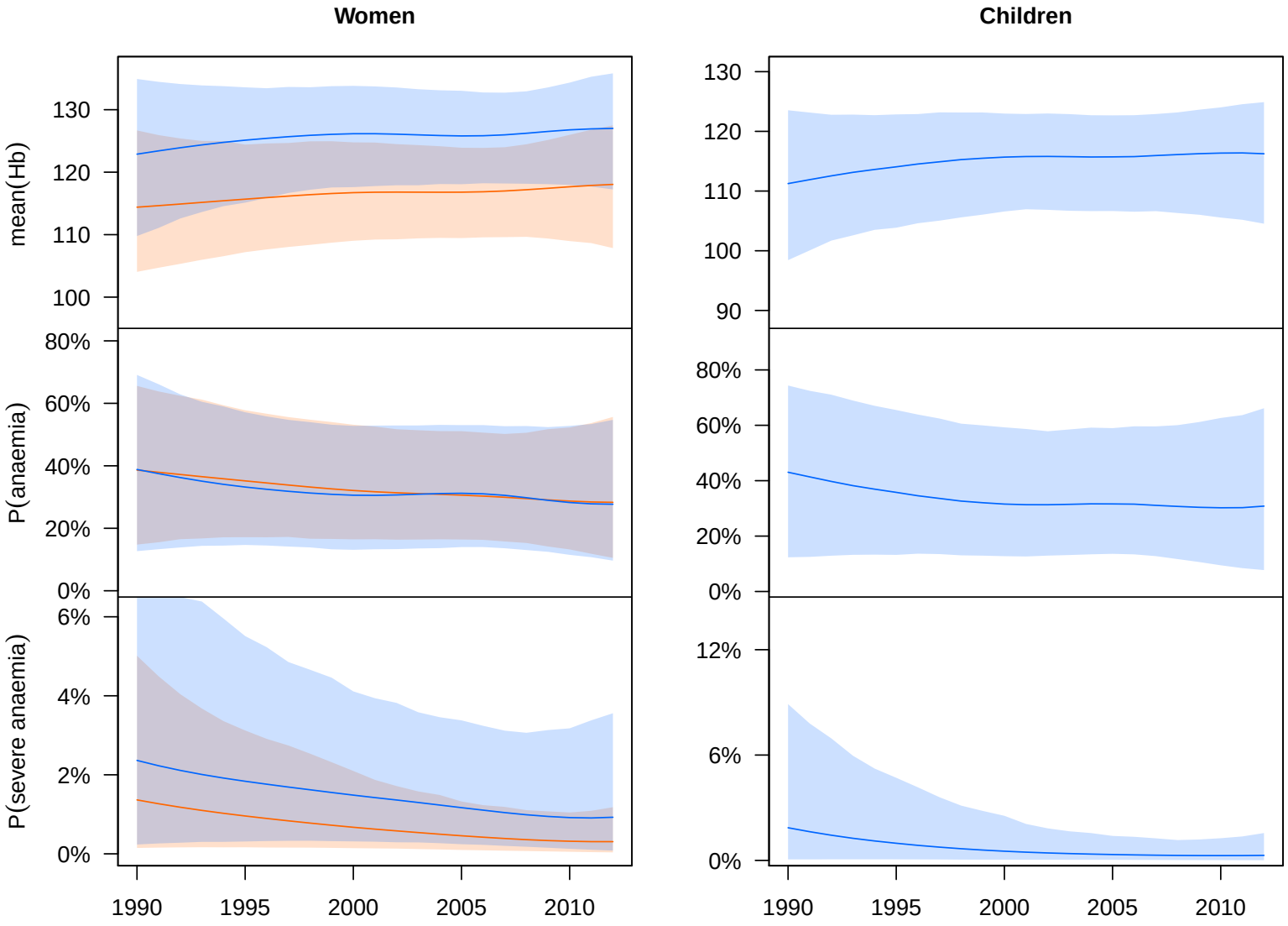
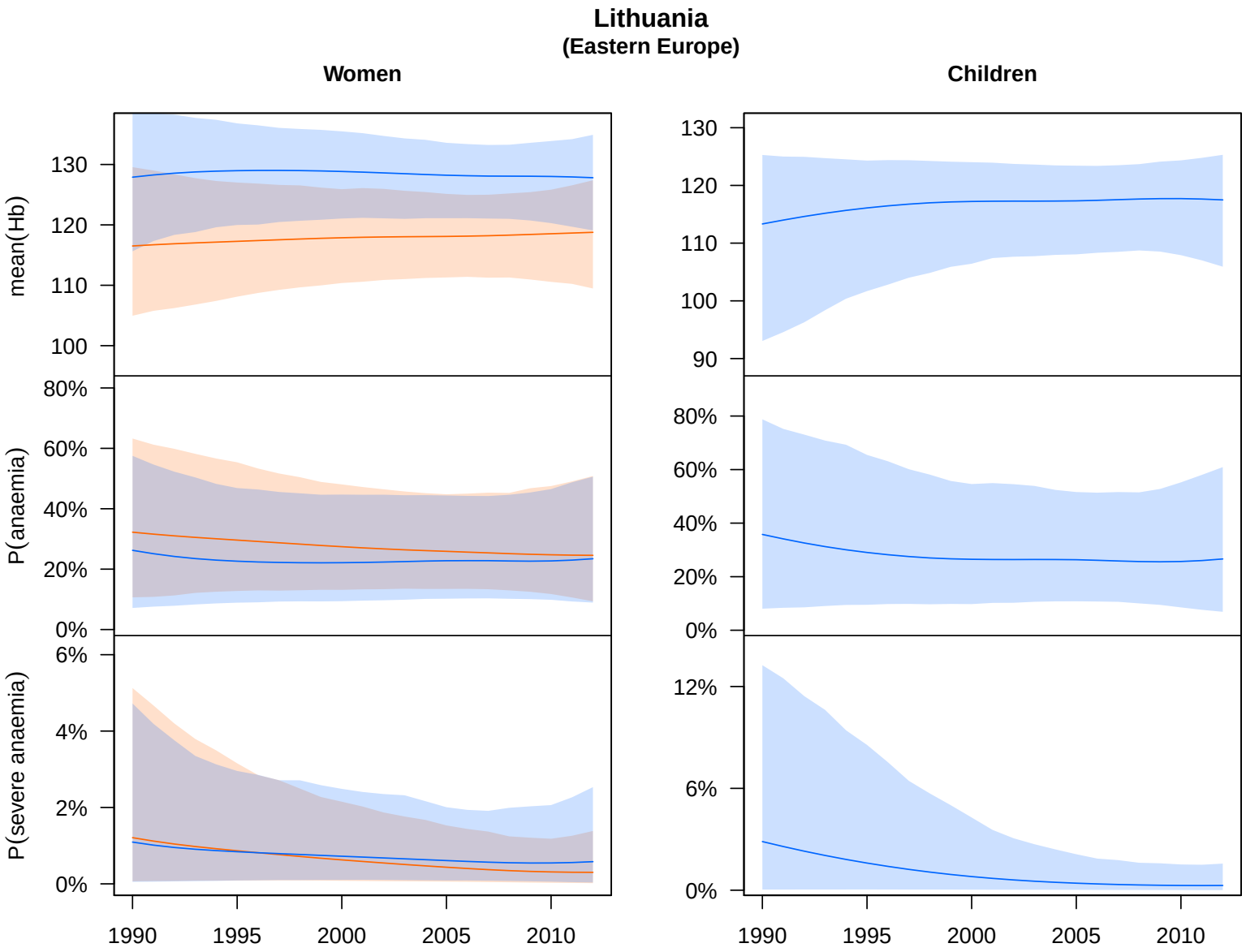
2%
12%
1990
1995
2000
2005
2010

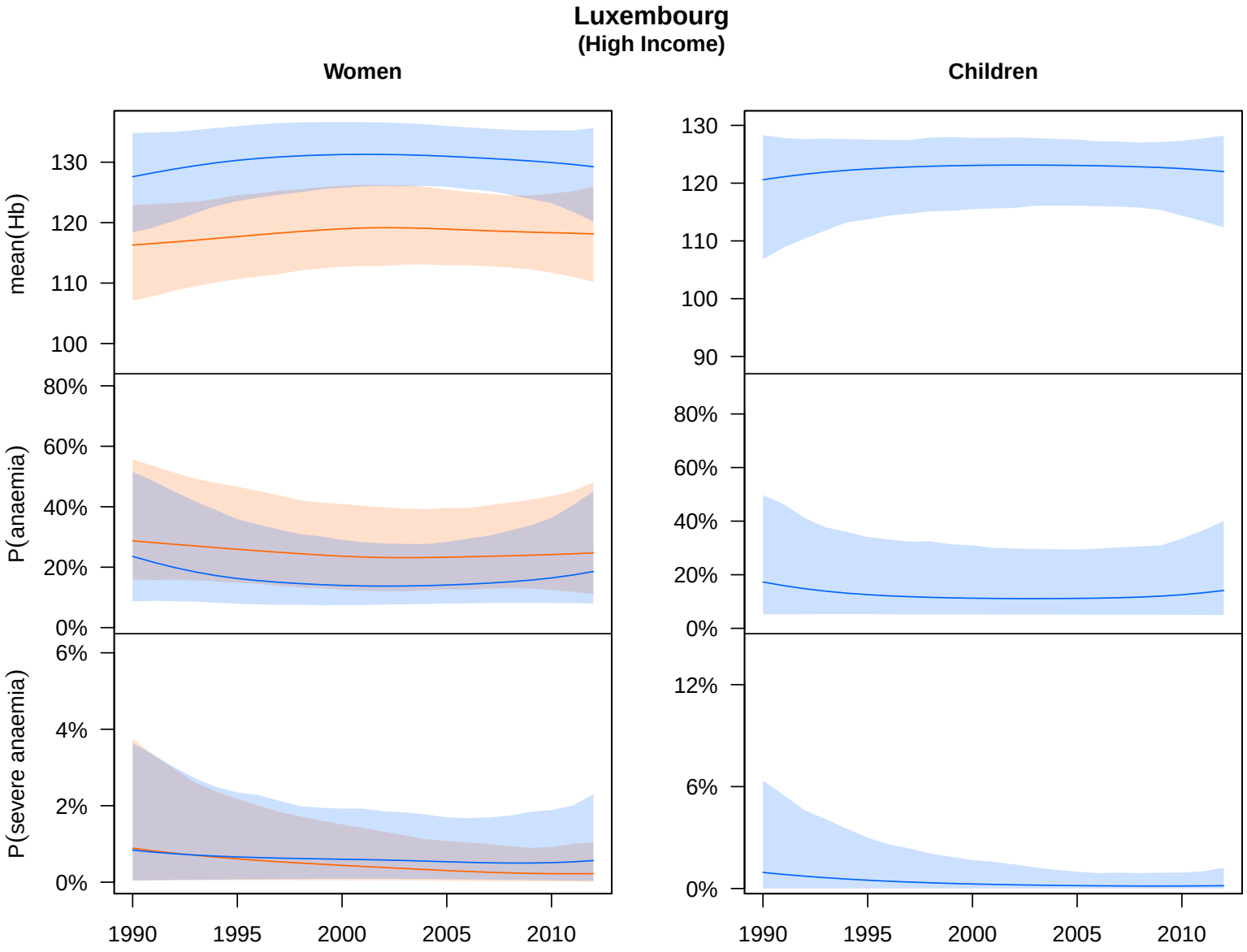

Liberia
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

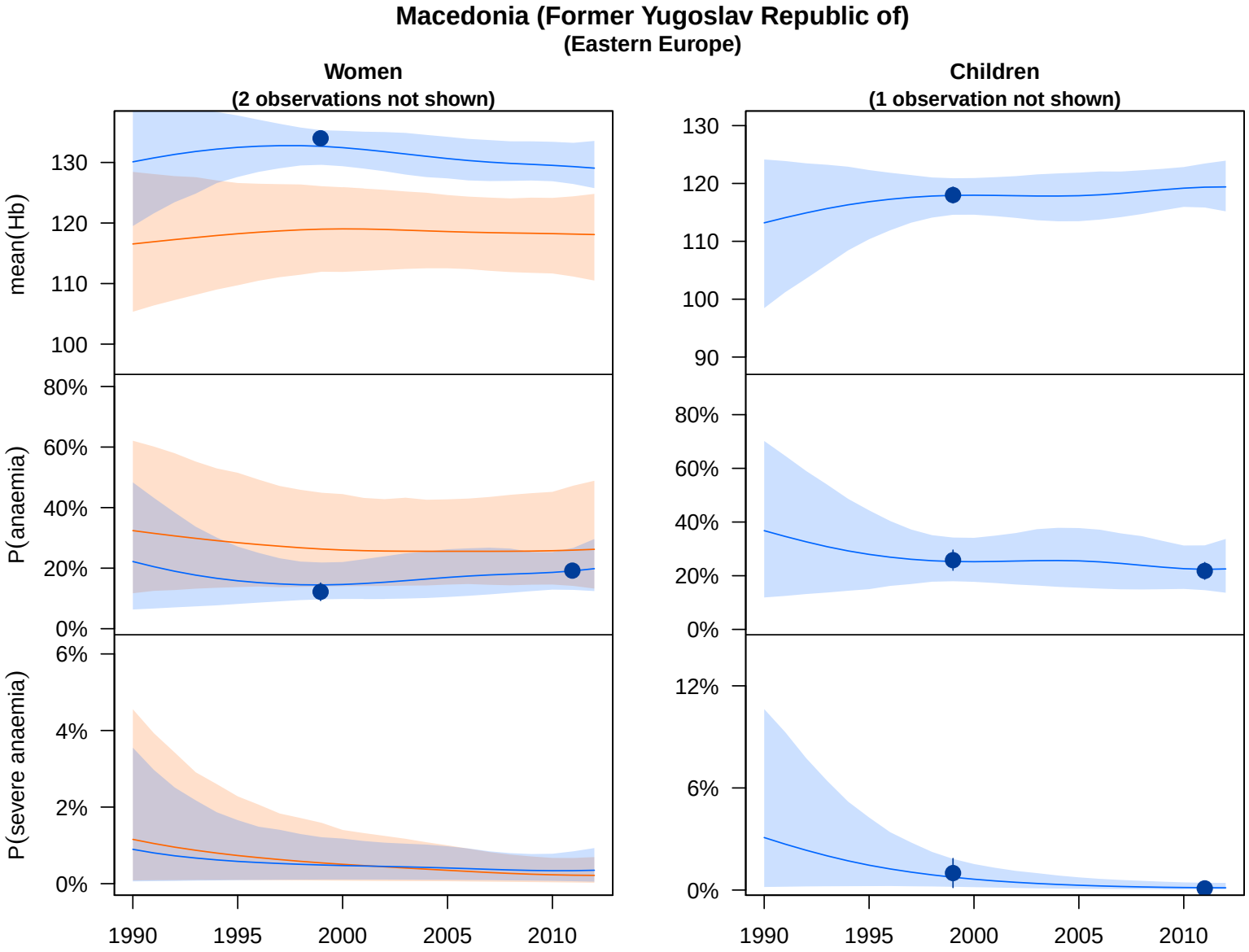
Libyan Arab Jamahiriya

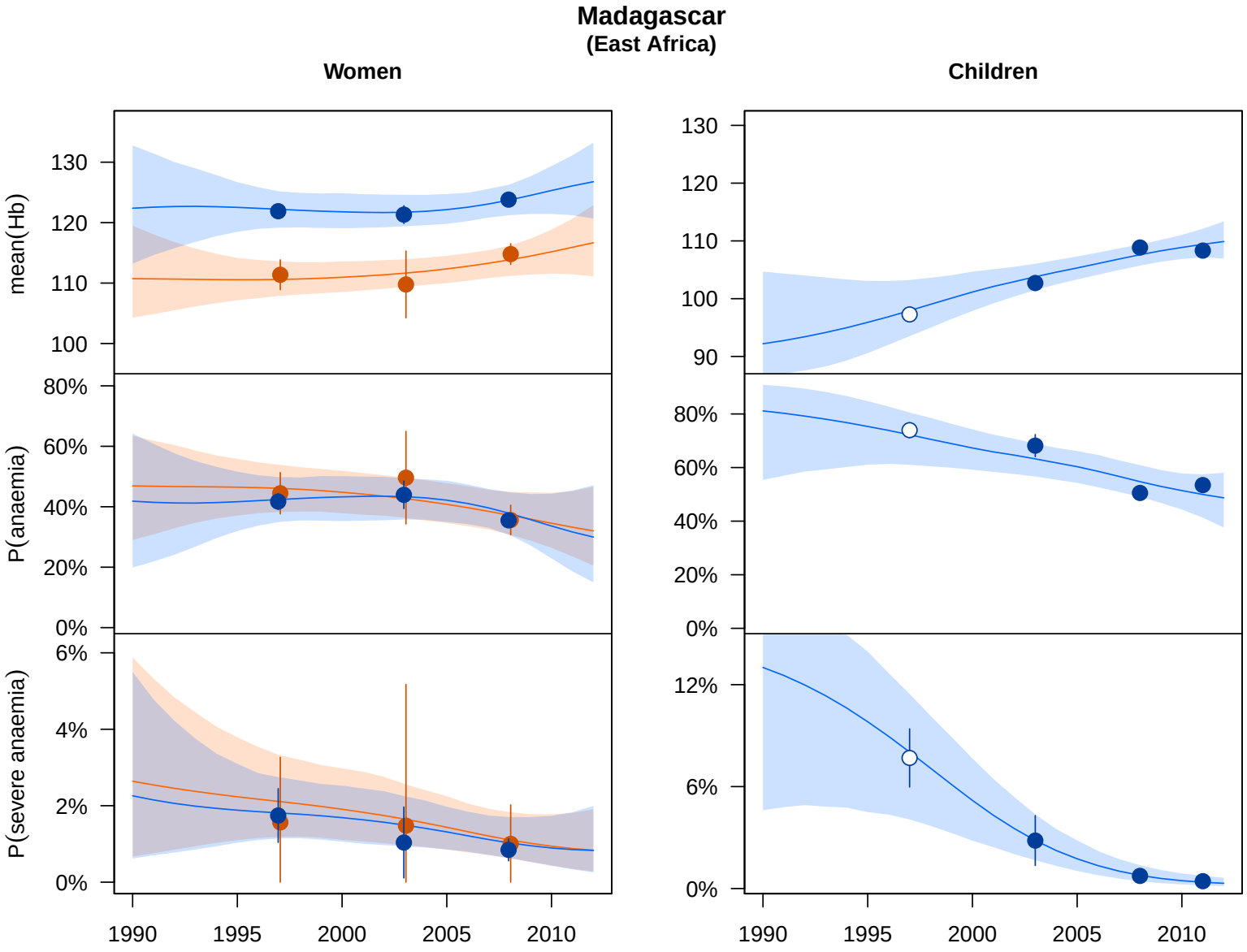
(Central Asia, Middle East, and North Africa)




Lithuania
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Luxembourg
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Macedonia (Former Yugoslav Republic of)
(Eastern Europe)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Madagascar
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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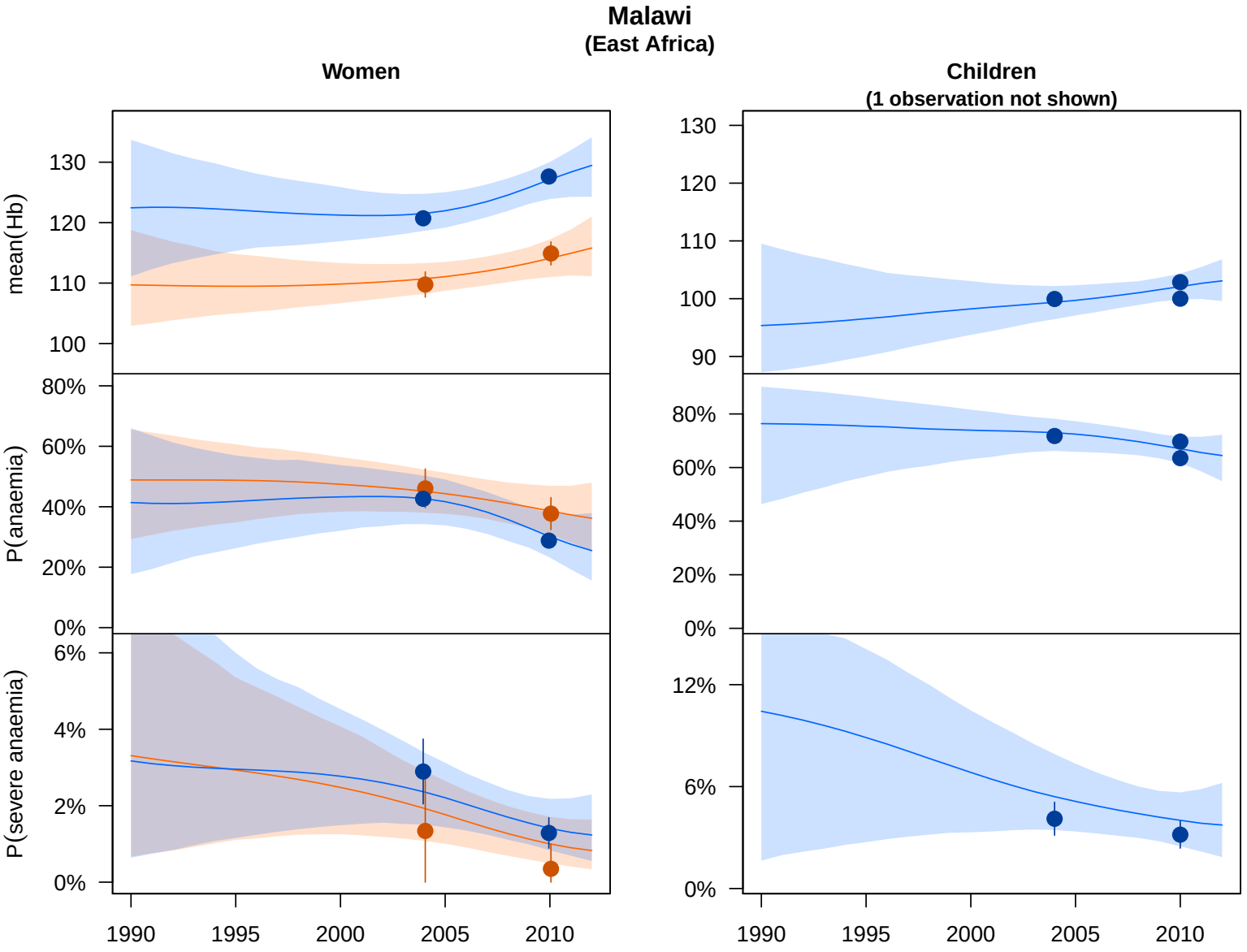
2%
12%
1990
1995
2000
2005
2010


Malawi
(East Africa)
Women
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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1990
1995
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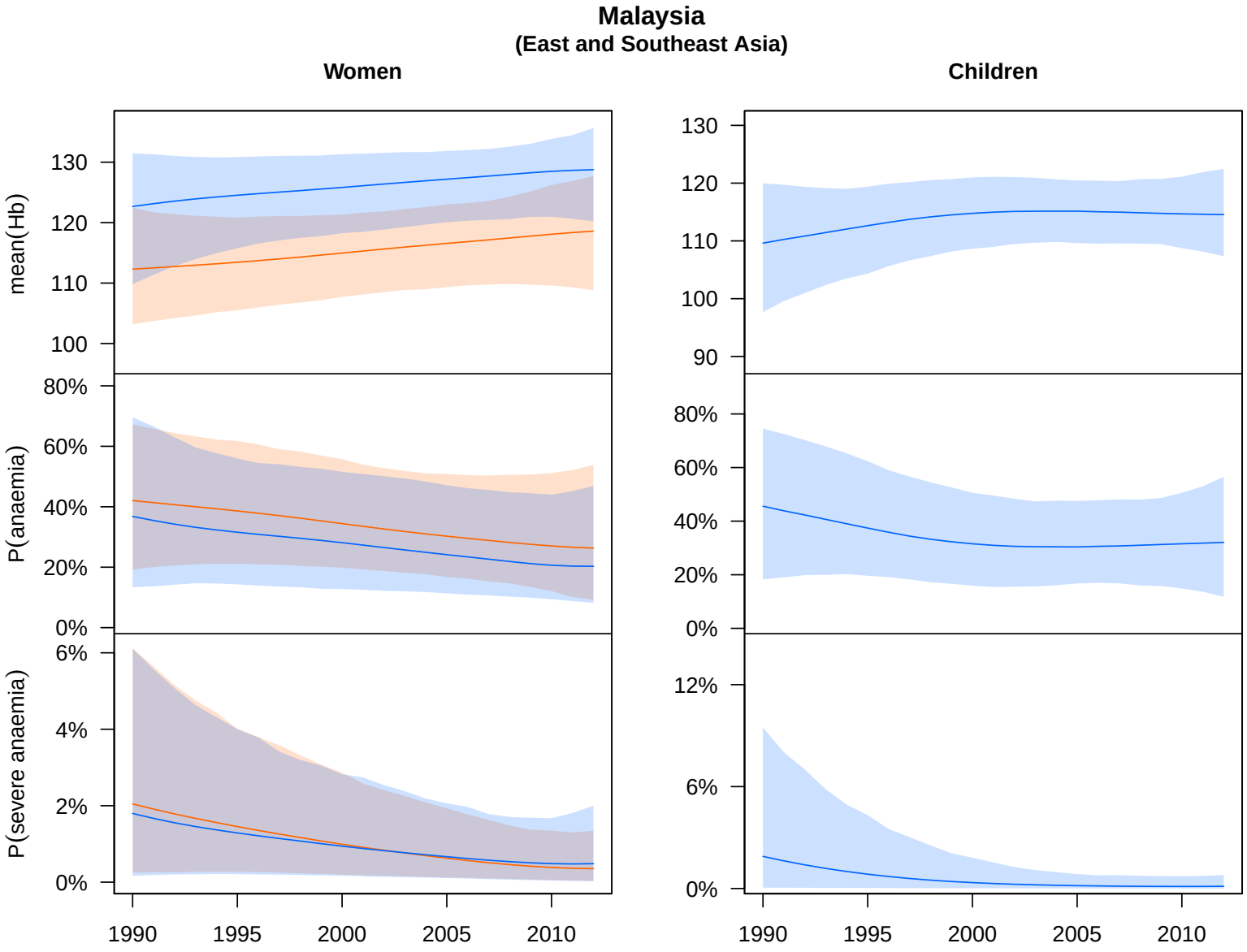
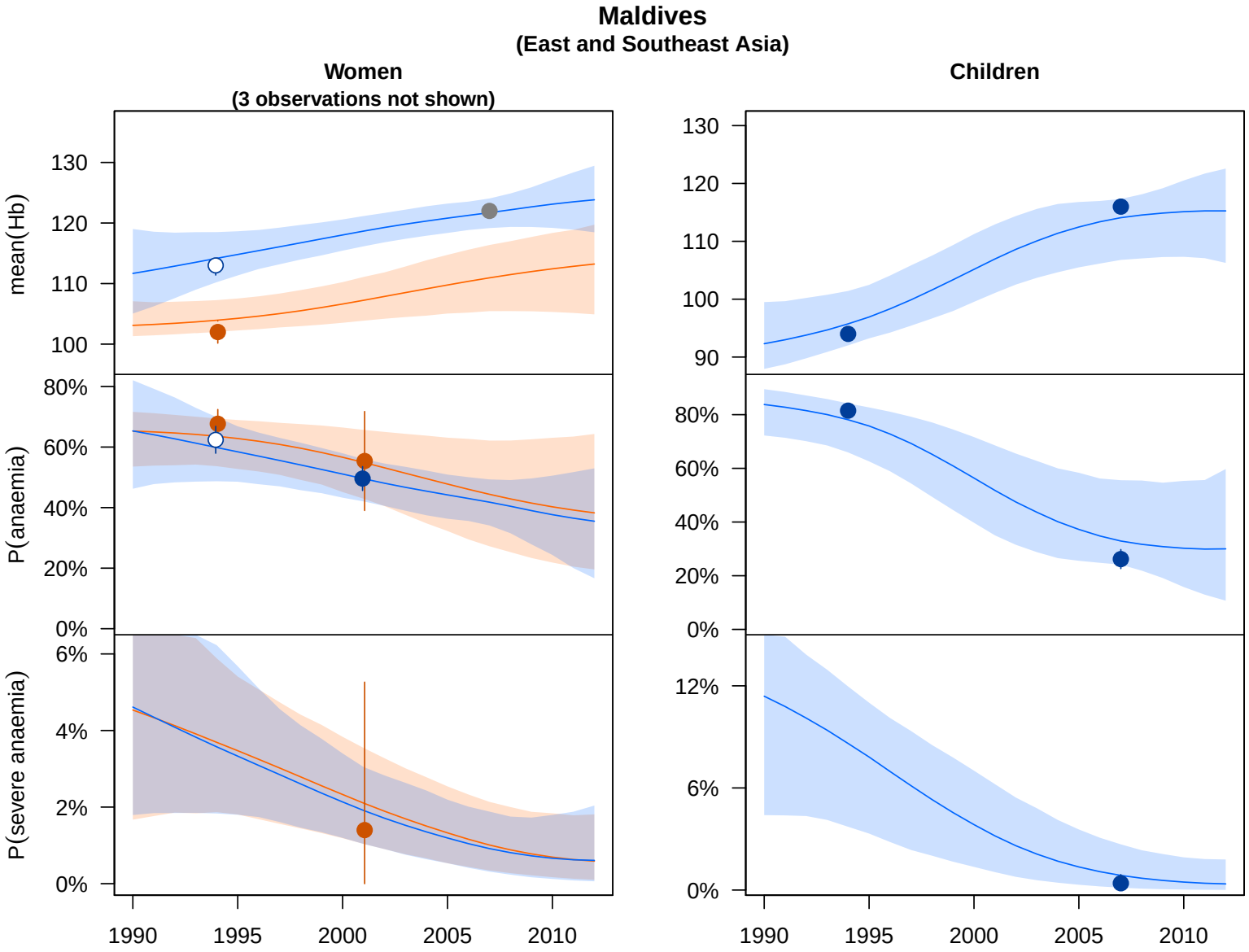
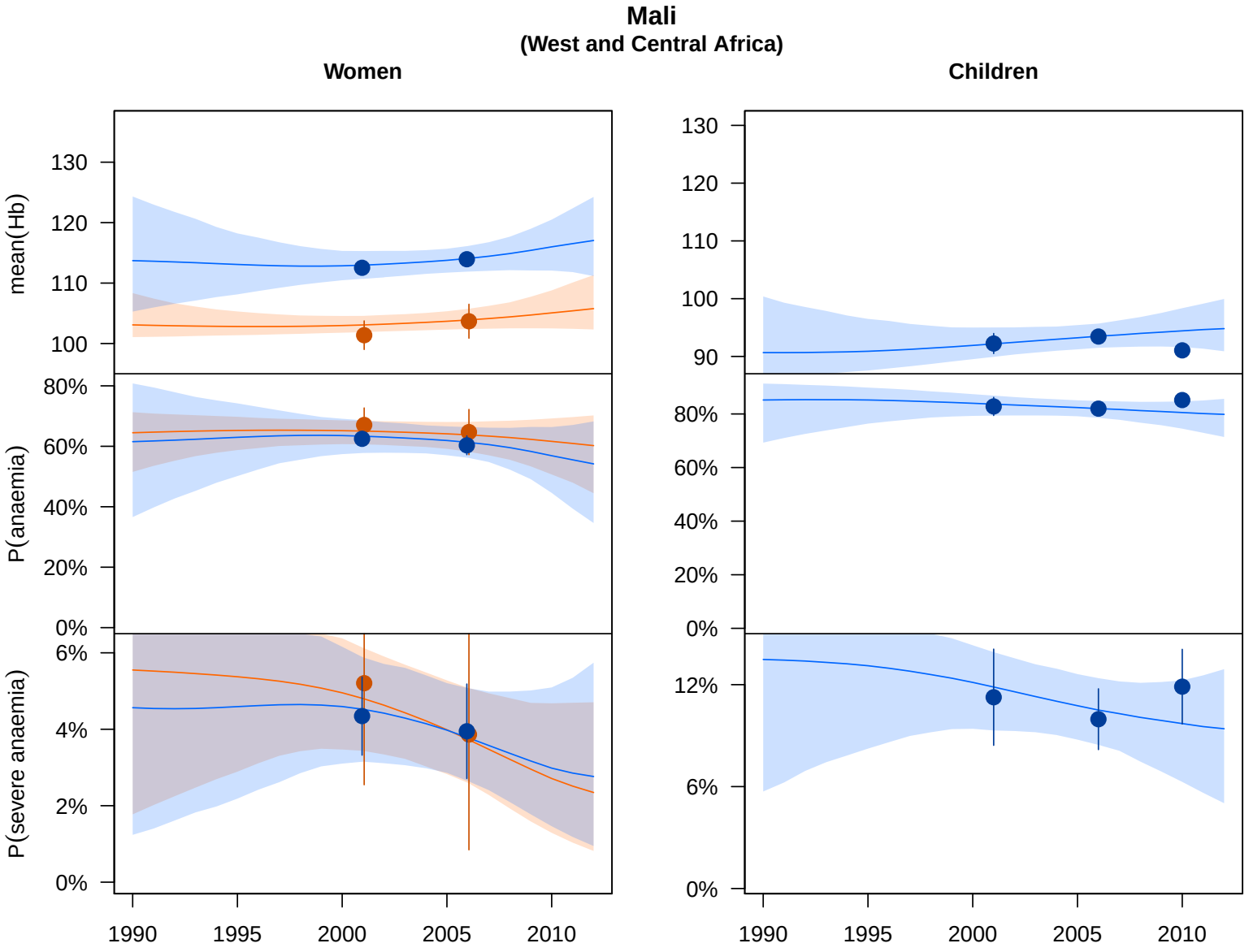
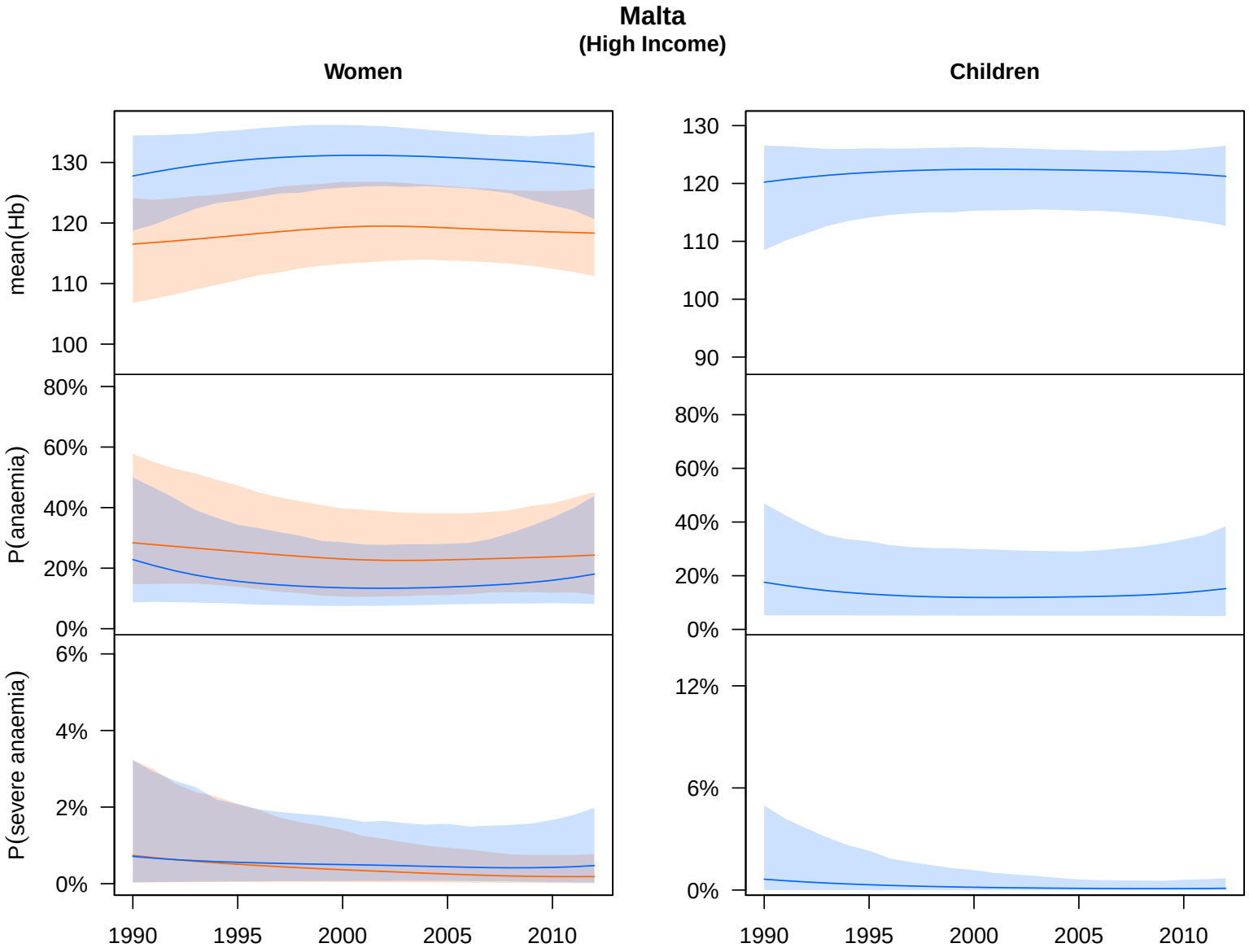
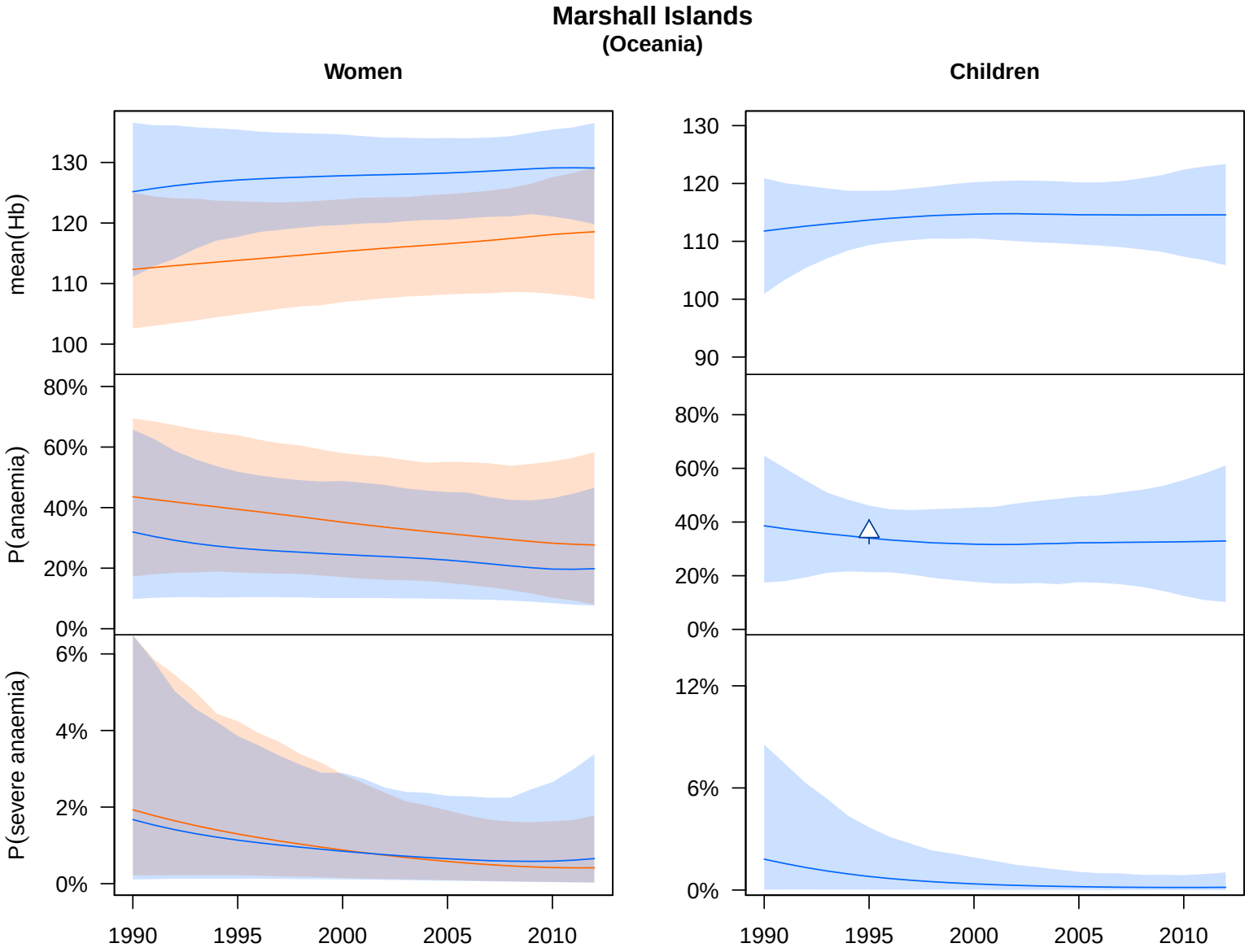
2010

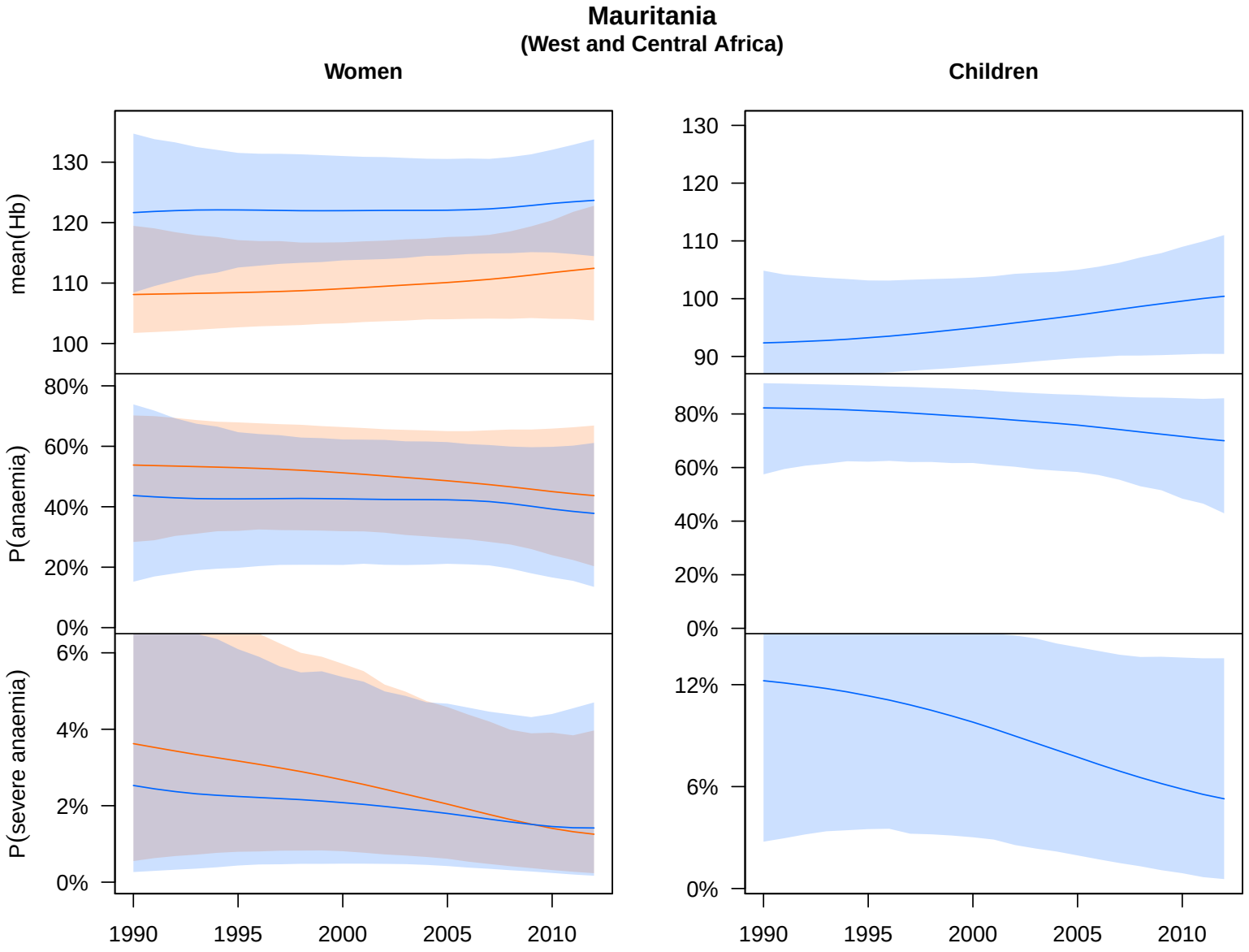

Malaysia
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

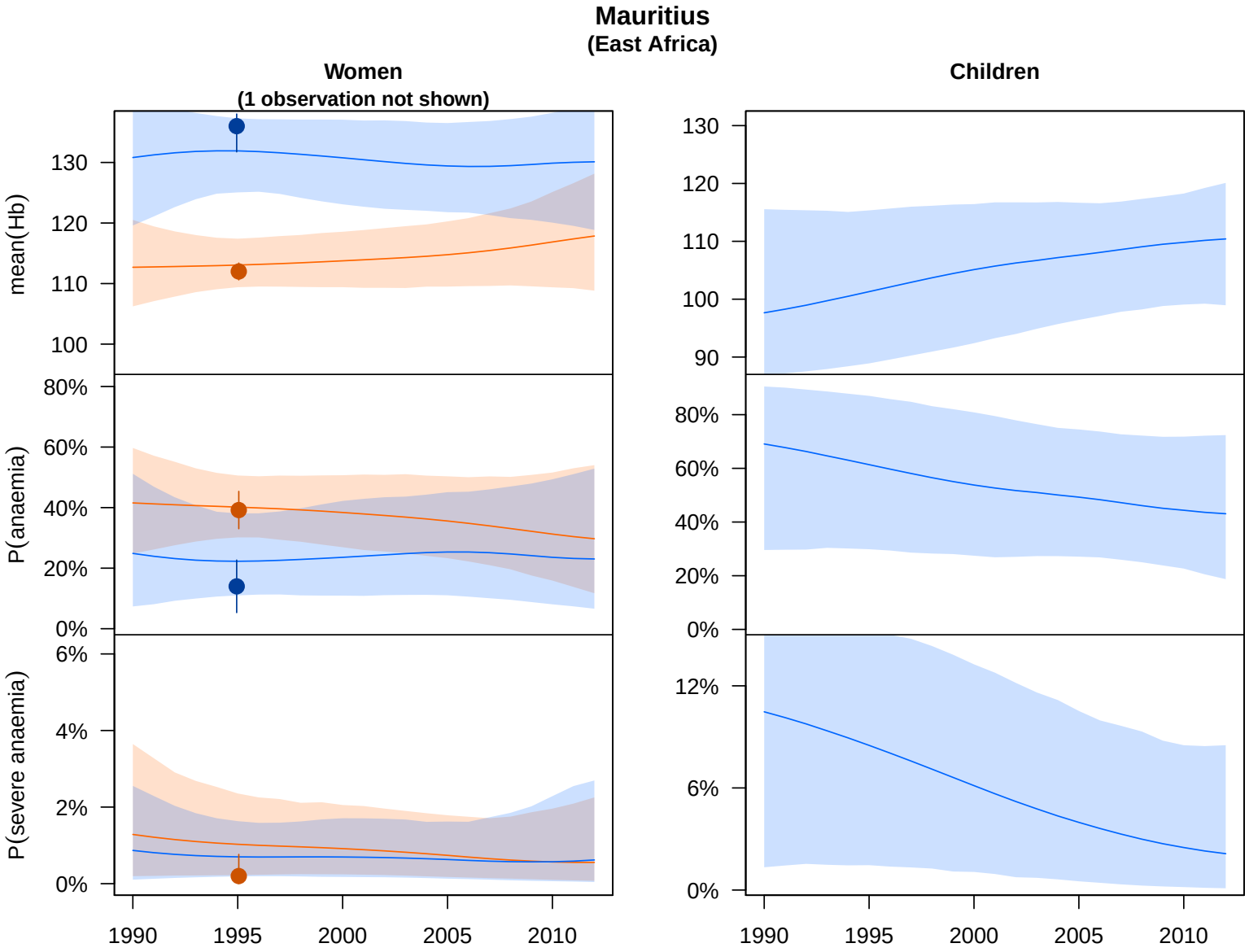

Maldives
(East and Southeast Asia)
Women
(3 observations not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

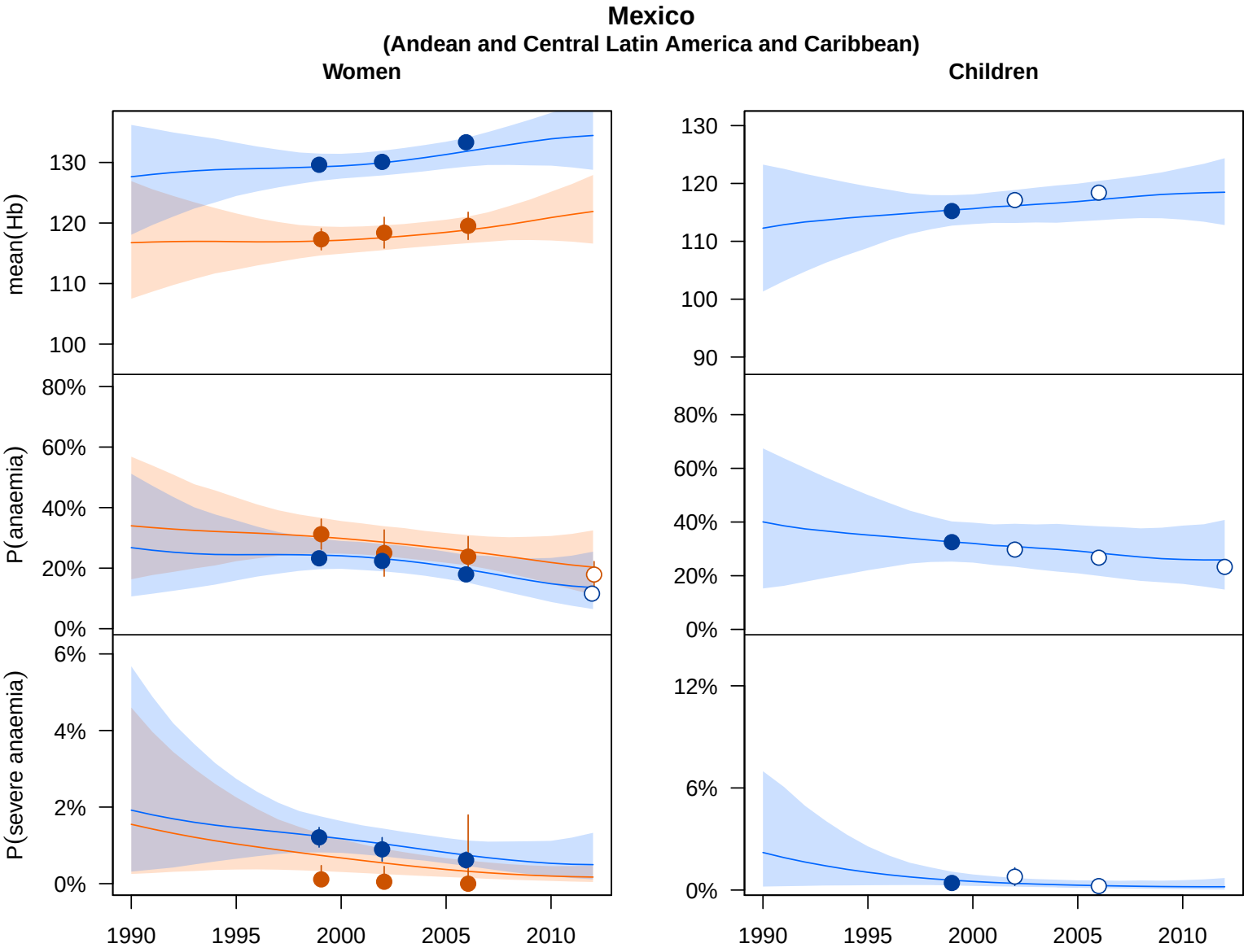

Mali
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

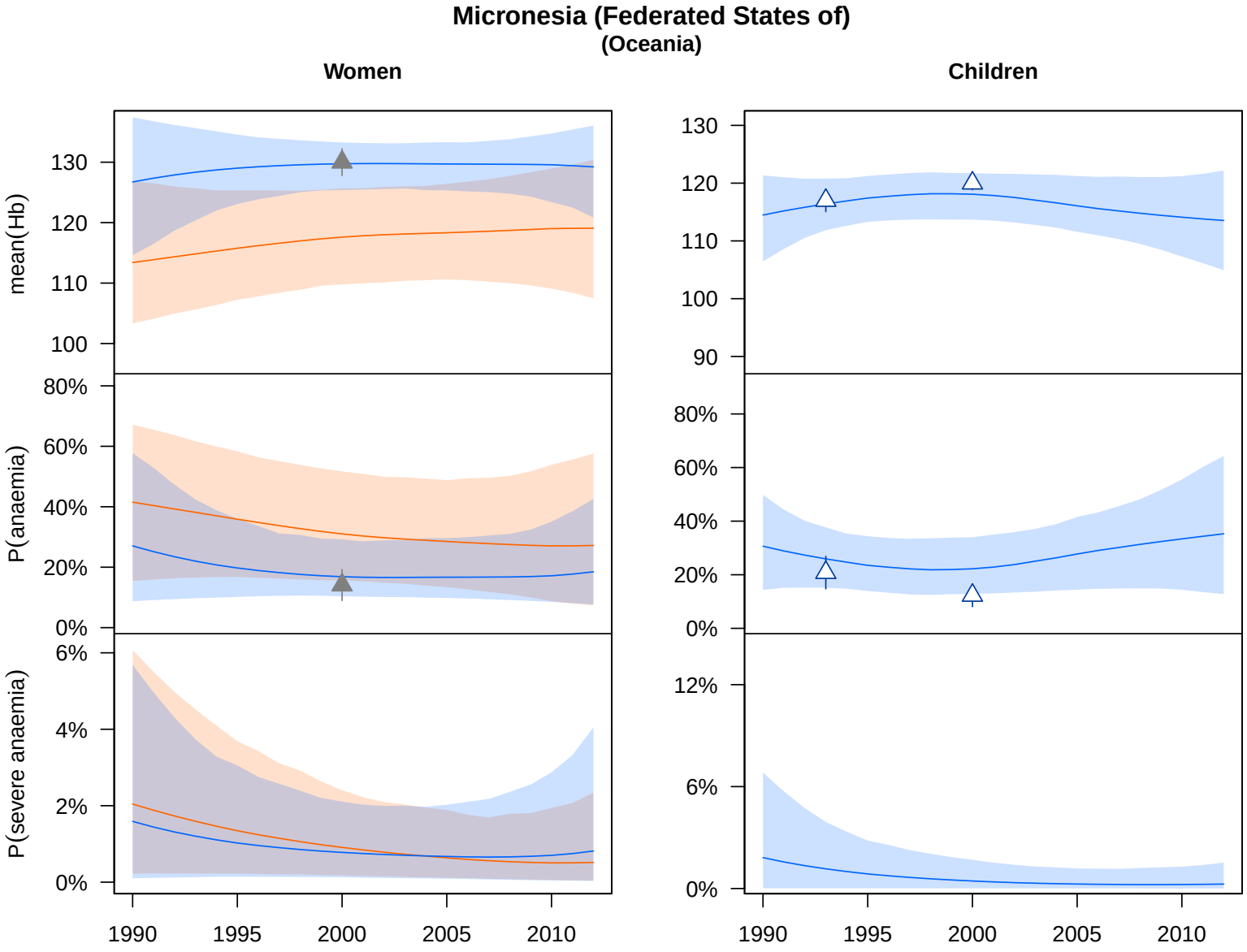

Malta
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

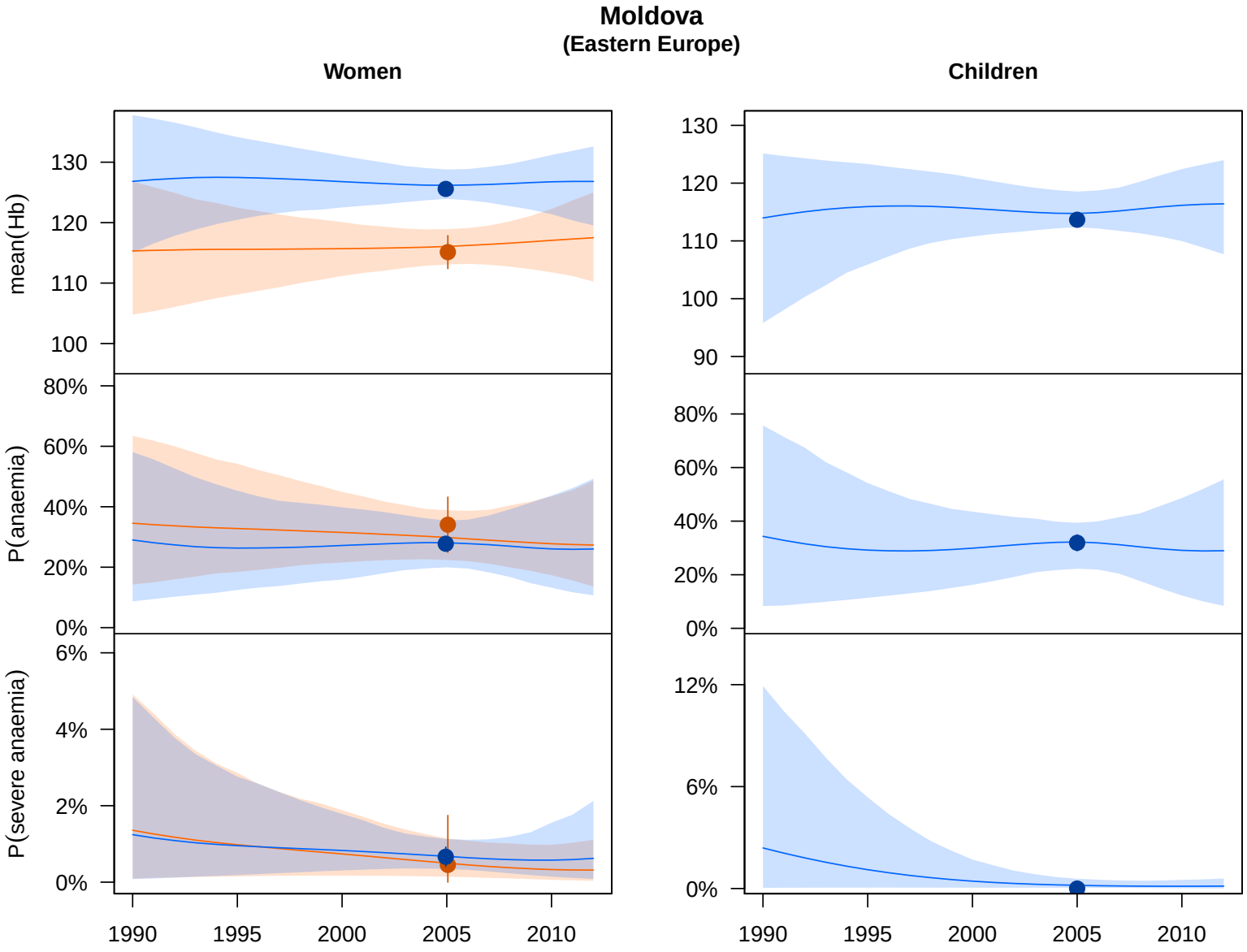

Marshall Islands
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Mauritania
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Mauritius
(East Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

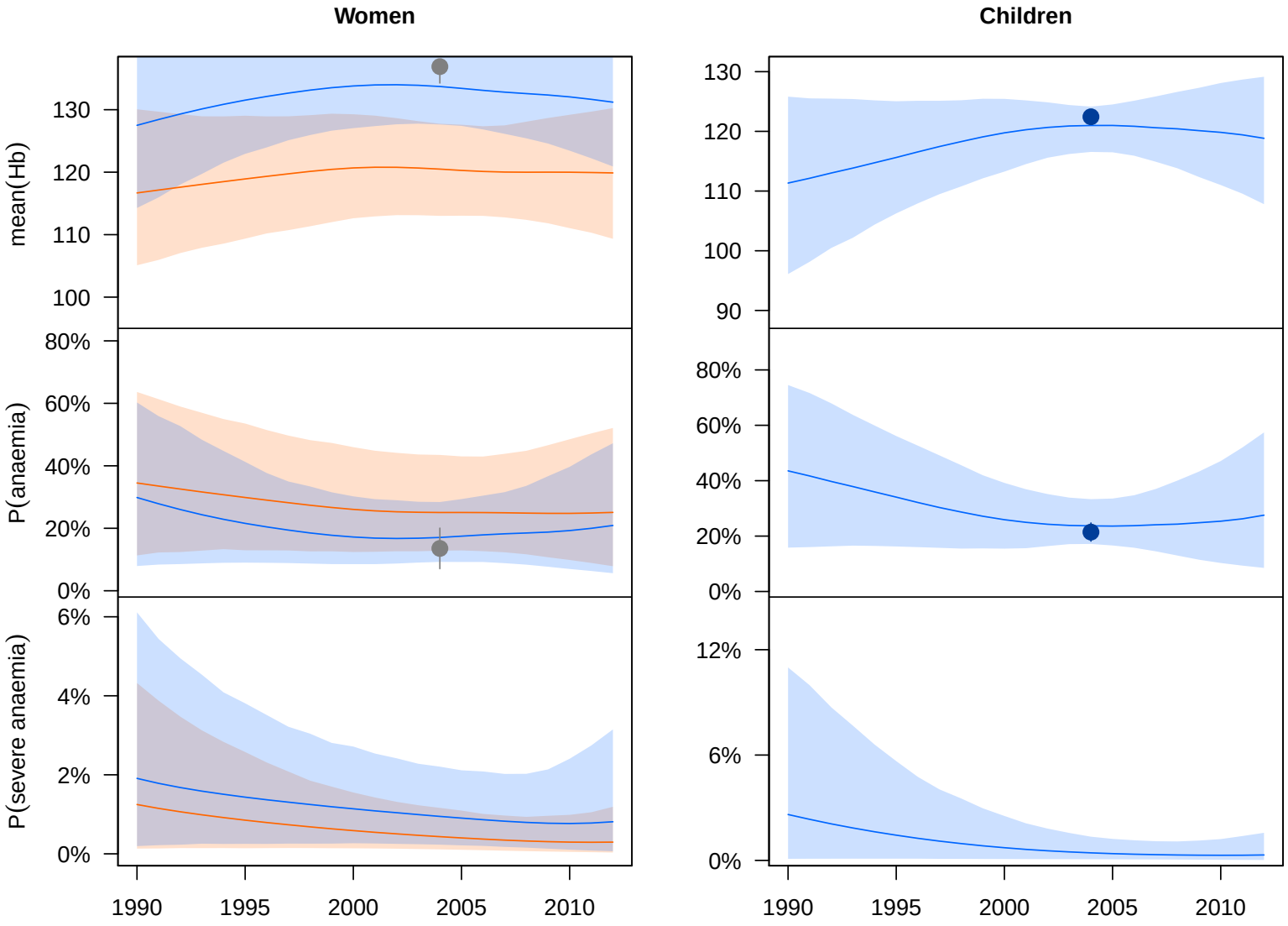

Mexico
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Micronesia (Federated States of)
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

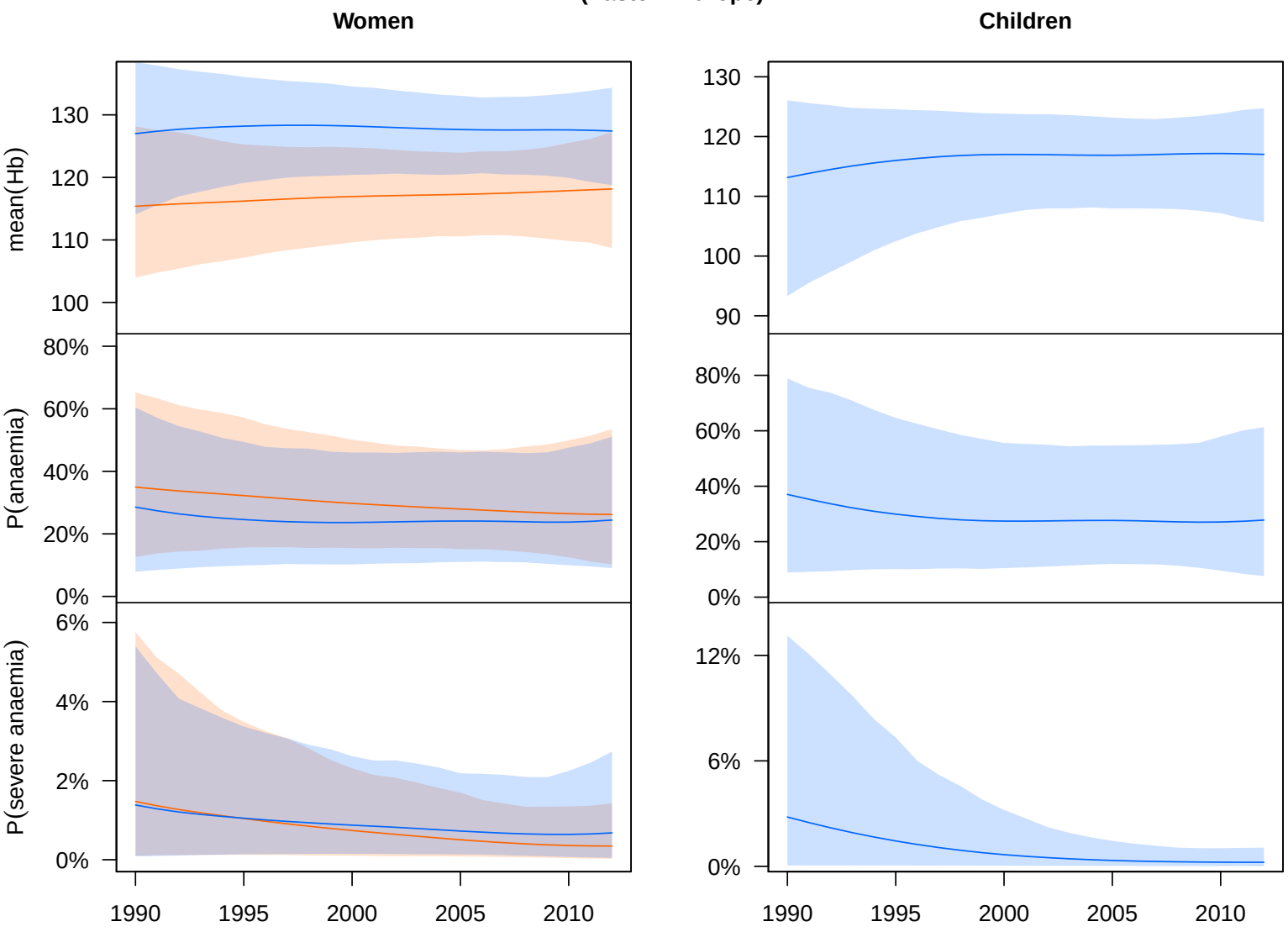

Moldova
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

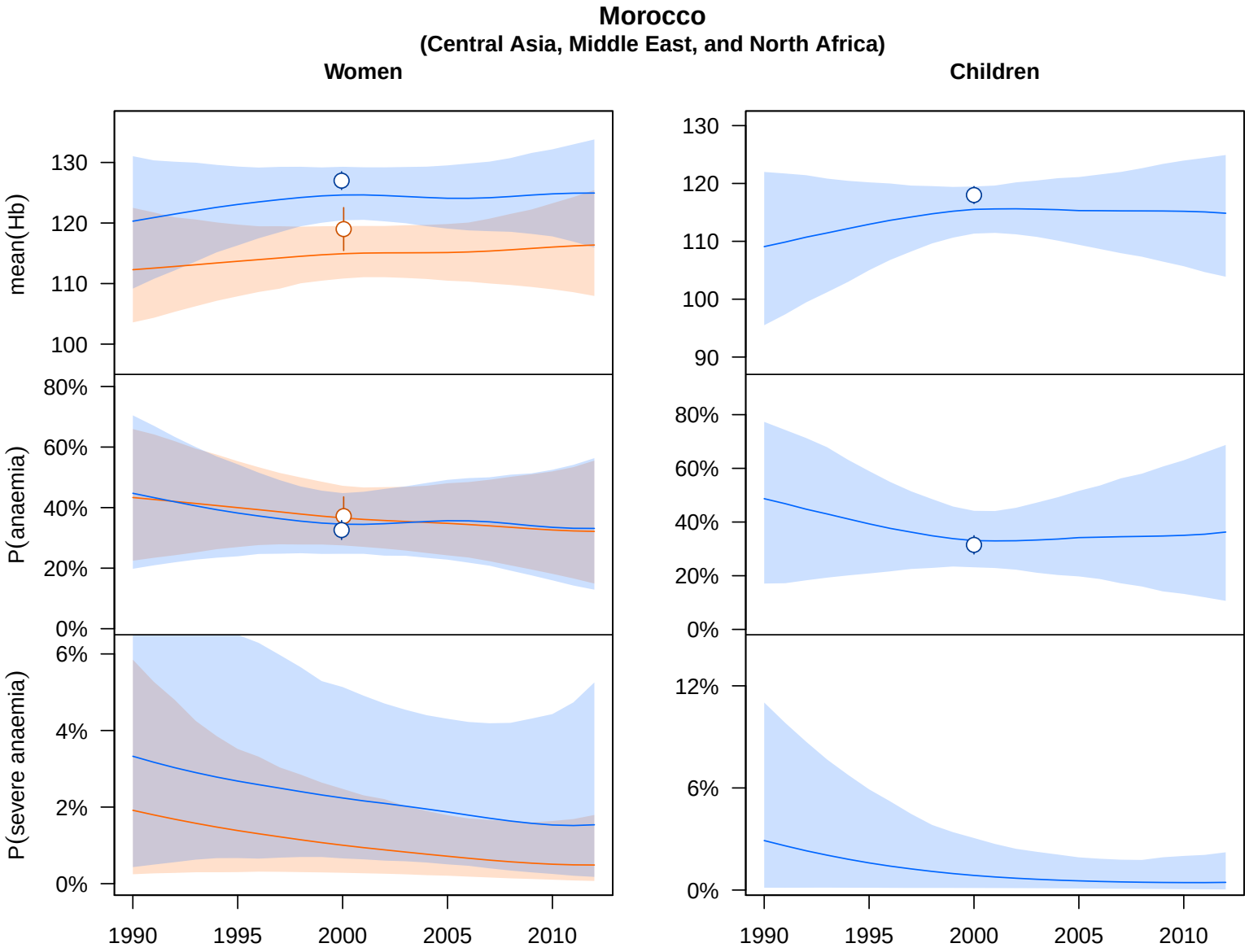
Mongolia

(Central Asia, Middle East, and North Africa)



Montenegro
(Eastern Europe)




Morocco
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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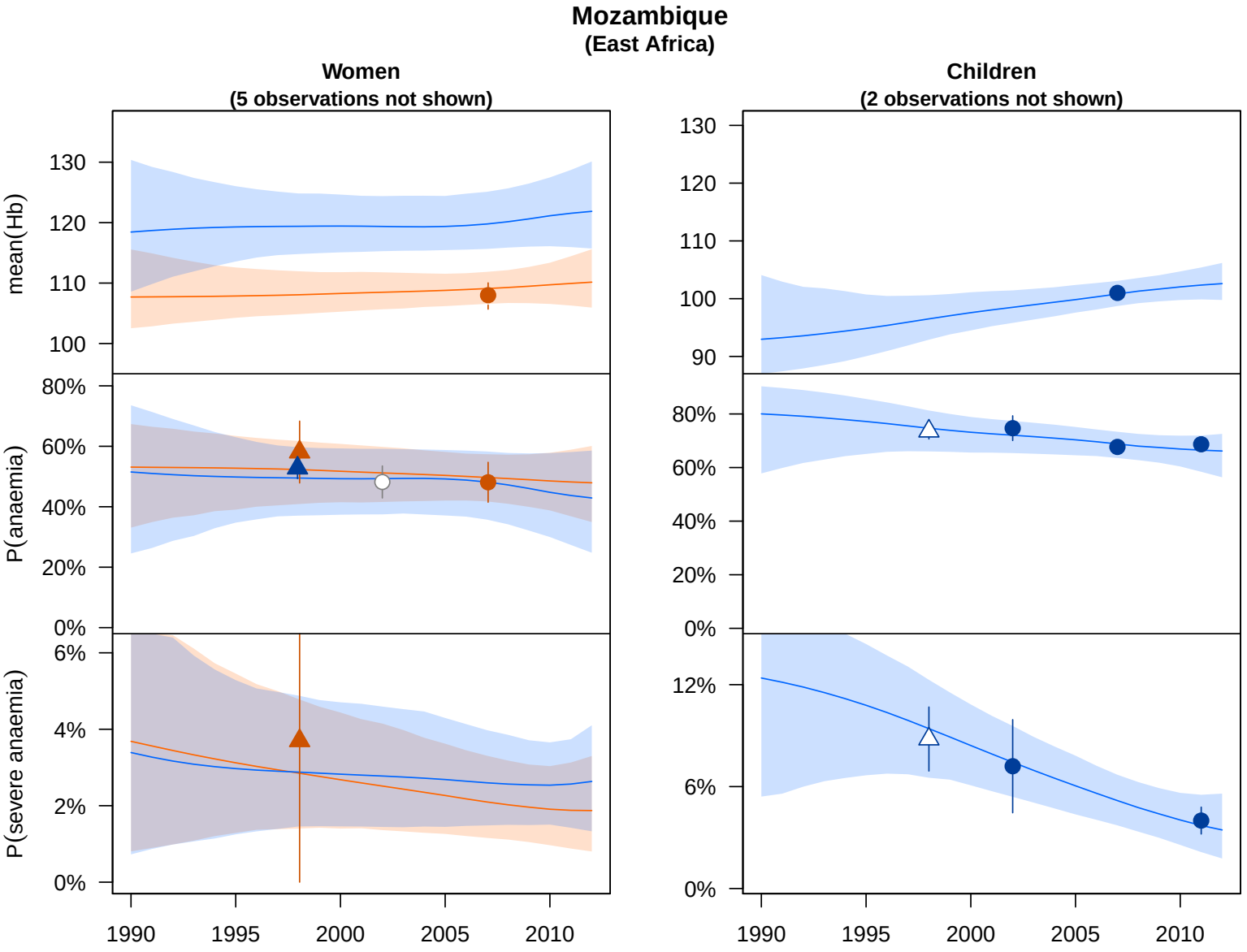
12%
1990
1995
2000
2005
2010


Mozambique
(East Africa)
Women
(5 observations not shown)
Children
(2 observations not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
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12%
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1990
1995
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2005
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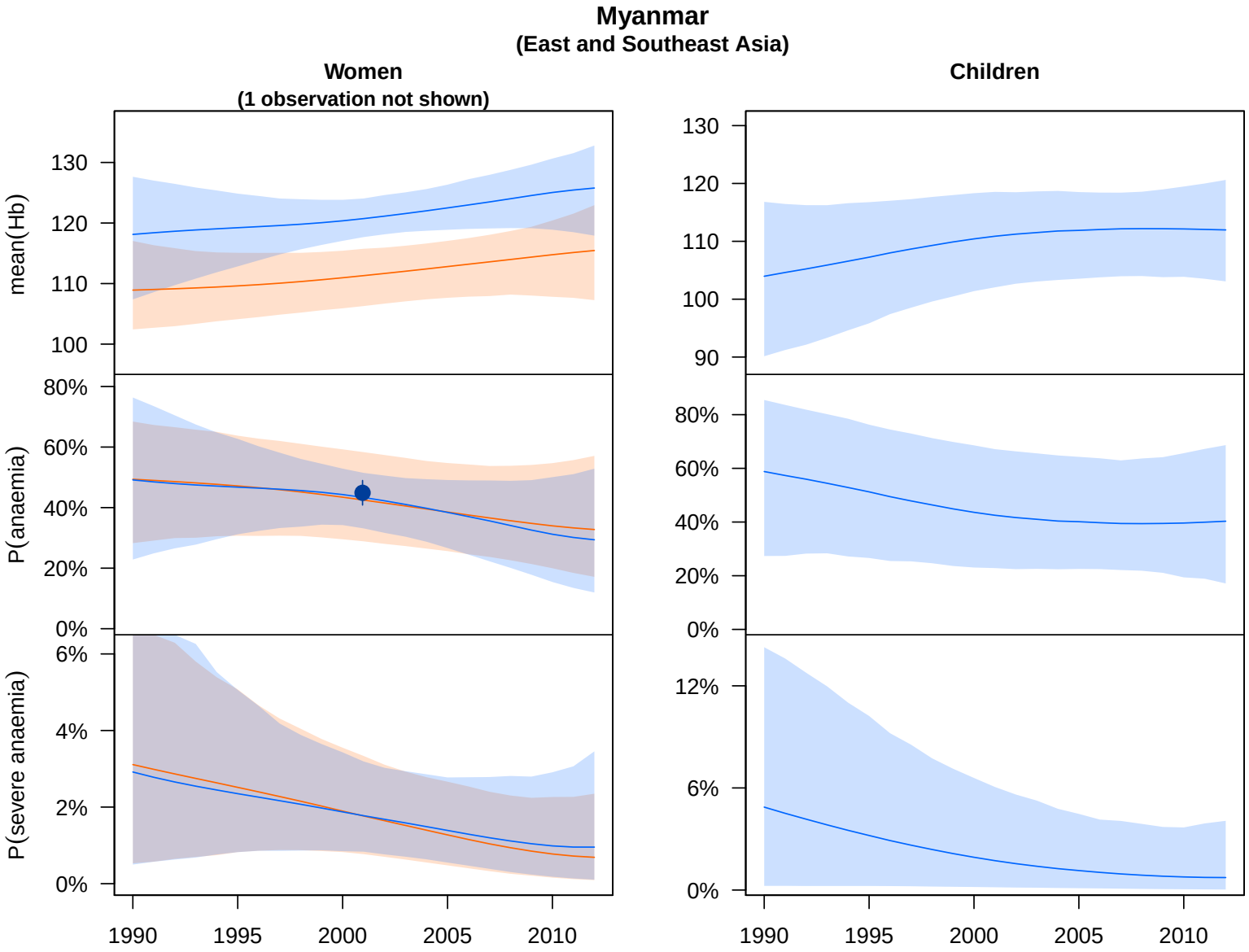
Myanmar
(East and Southeast Asia)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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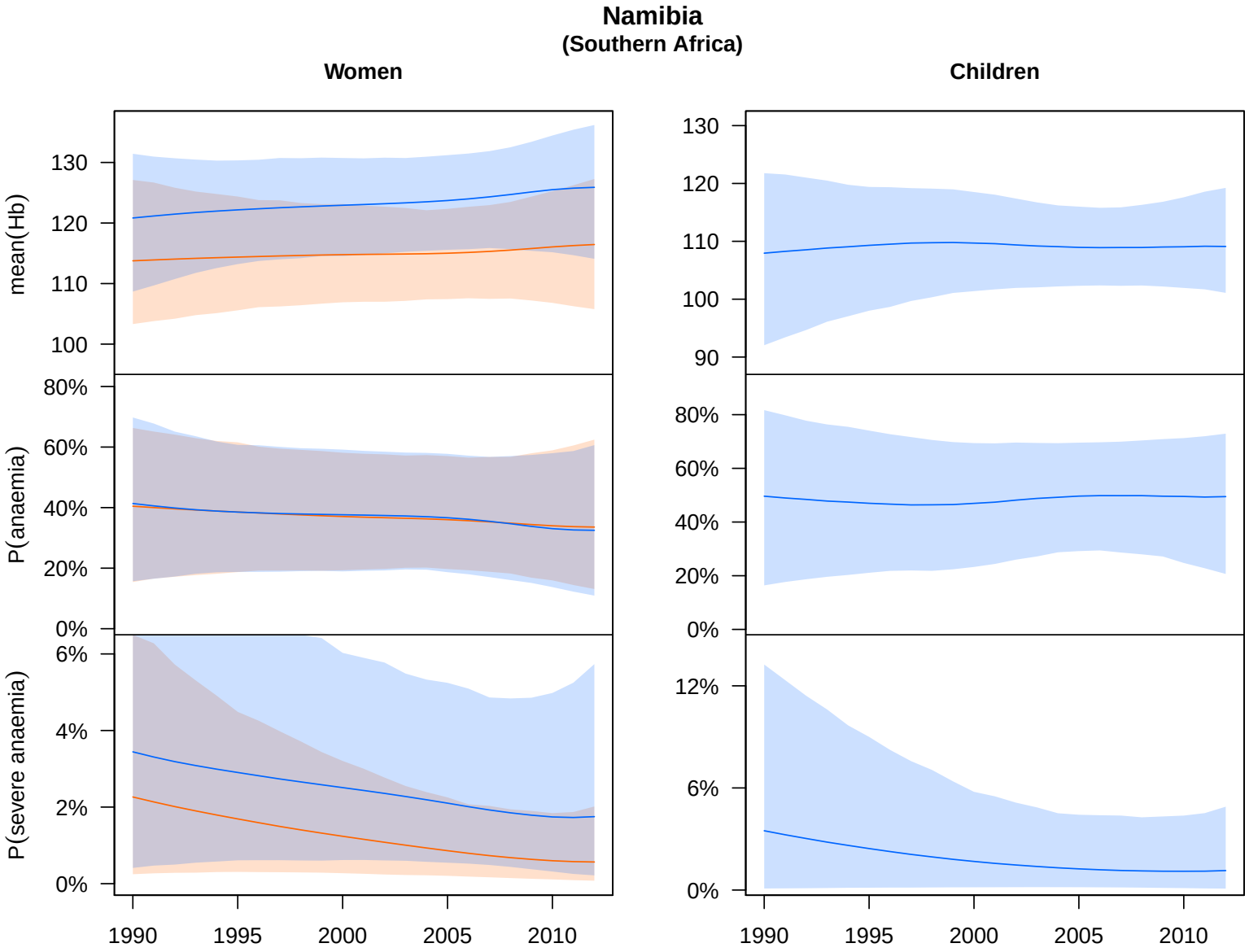
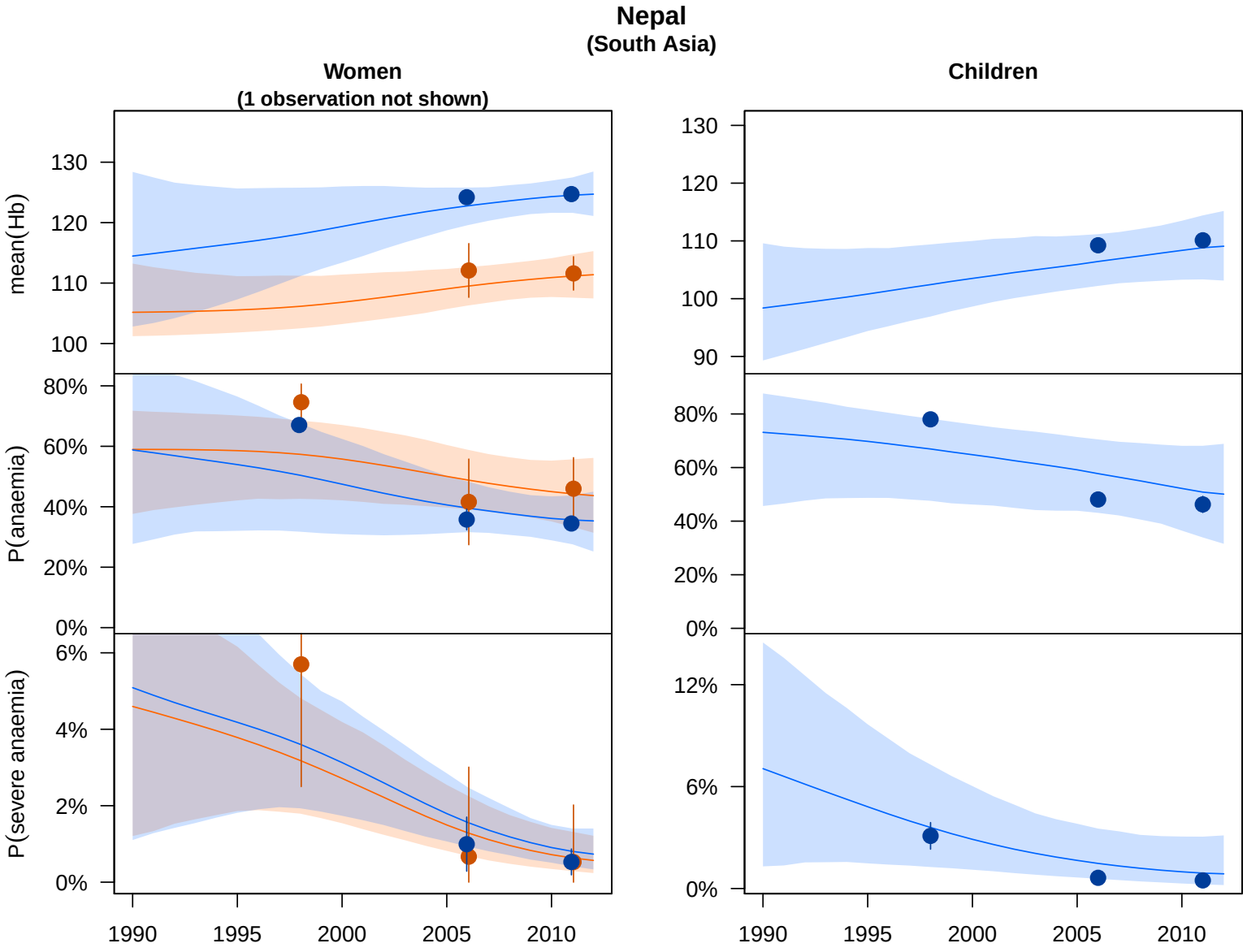
1990
1995
2000
2005
2010


Namibia
(Southern Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Nepal
(South Asia)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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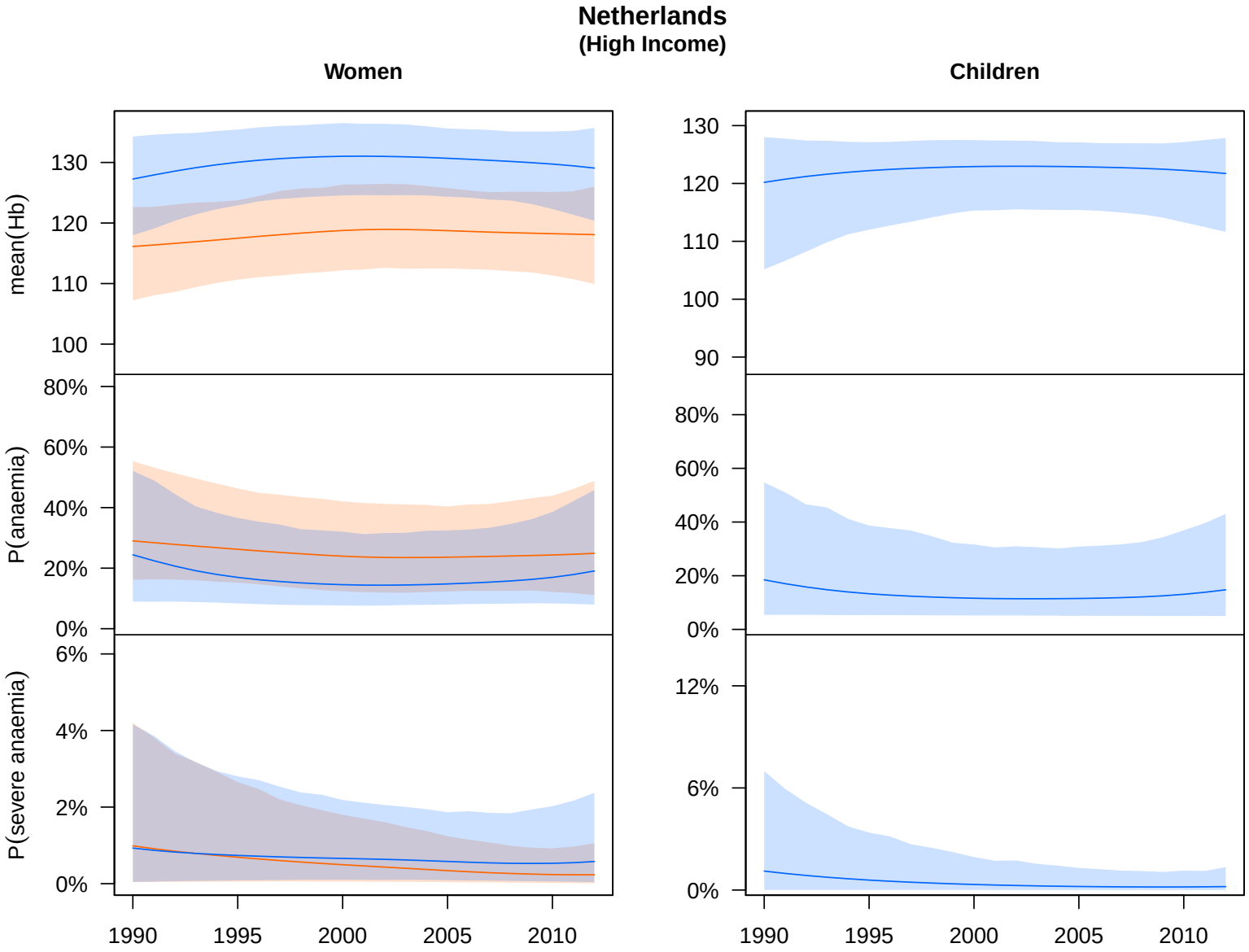
2%
1990
1995
2000
2005
2010


Netherlands
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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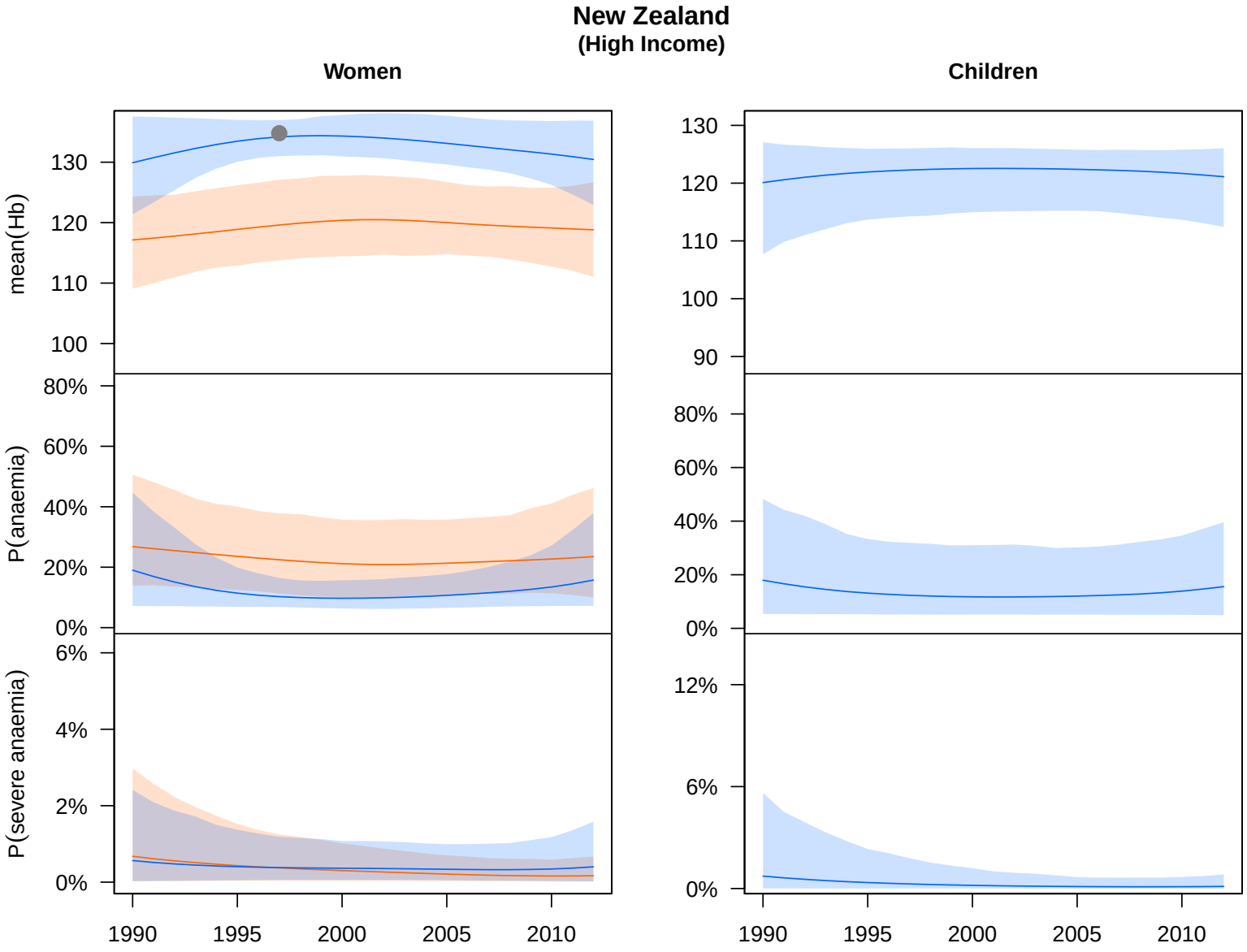
4%
2%
1990
1995
2000
2005
2010


New Zealand
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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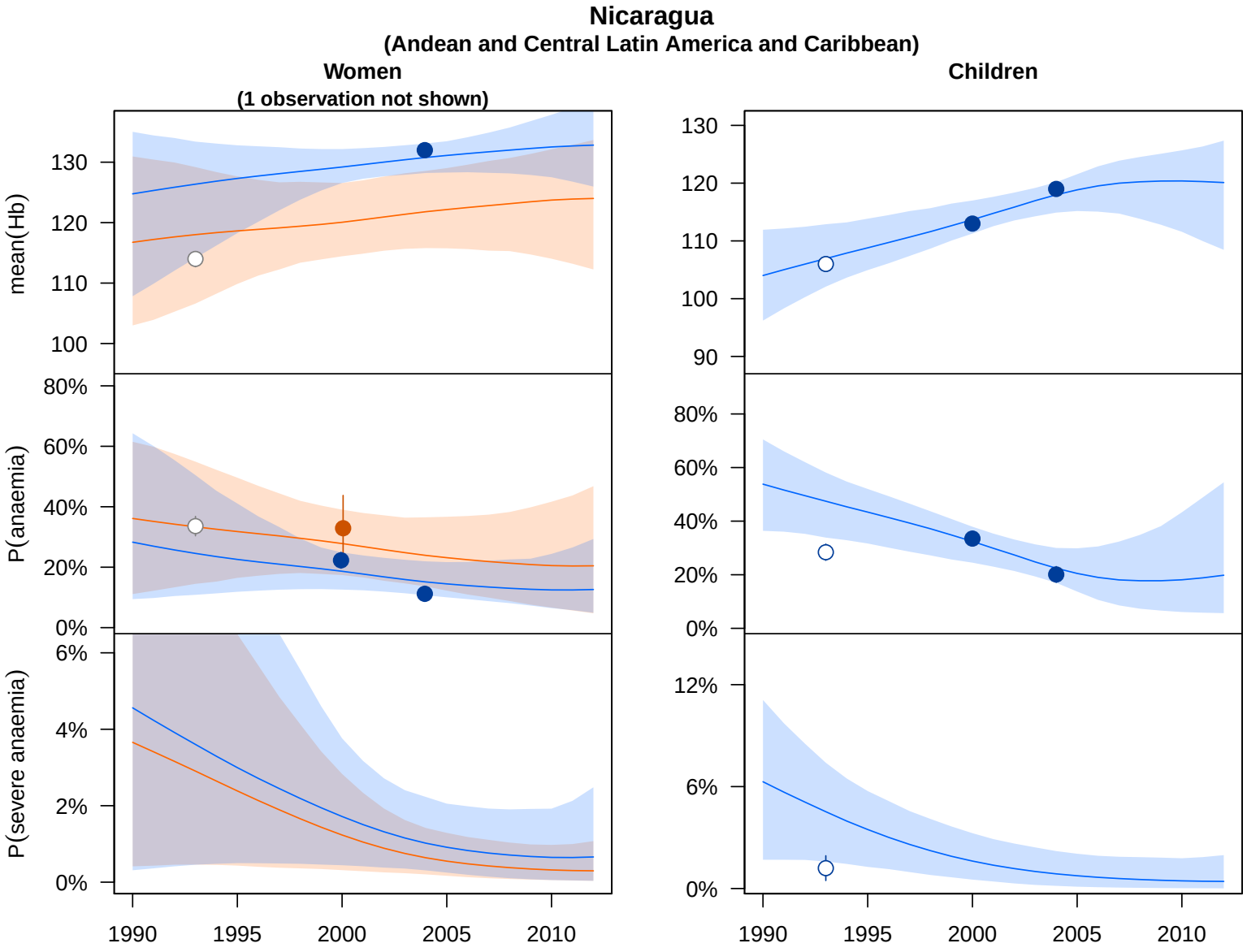
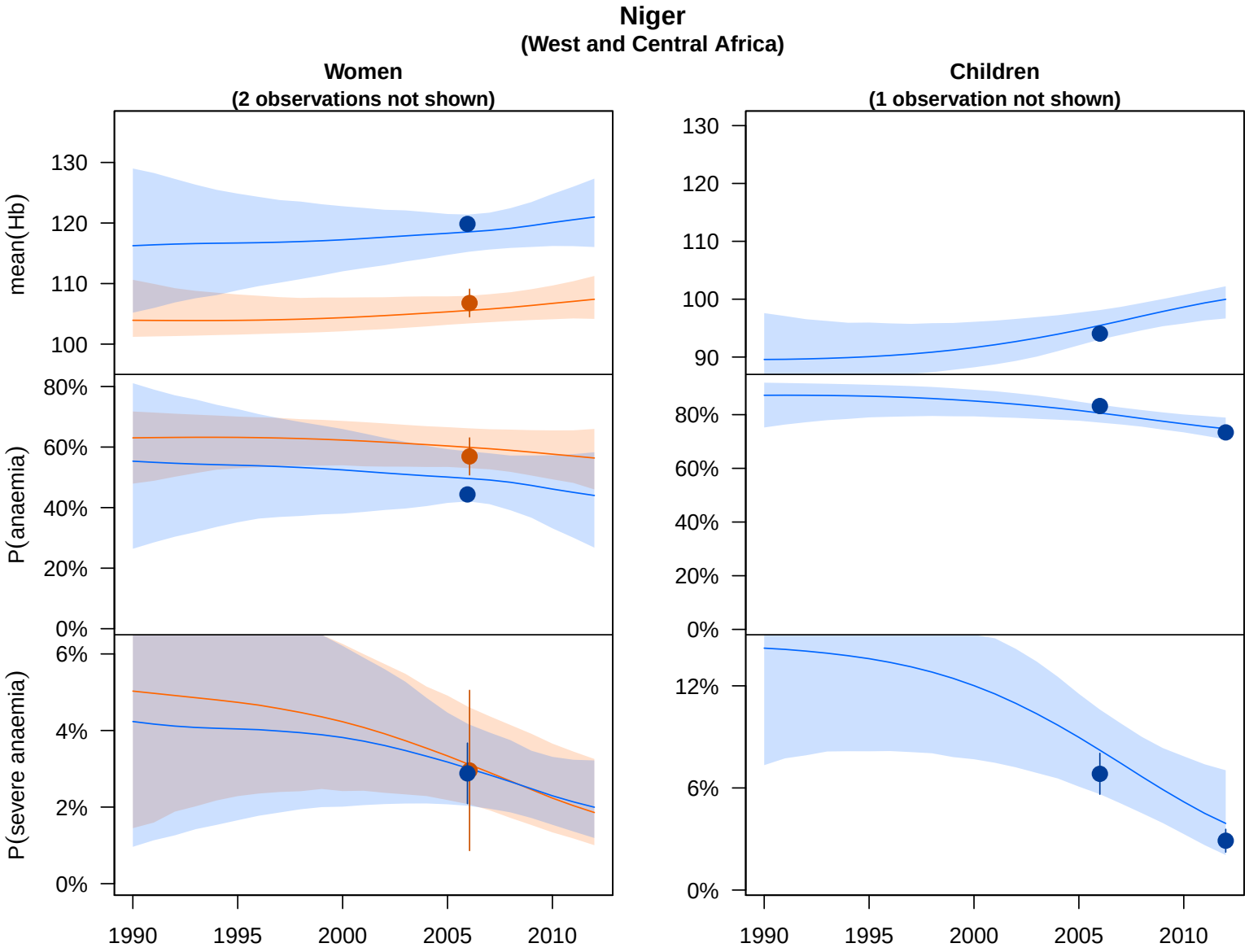
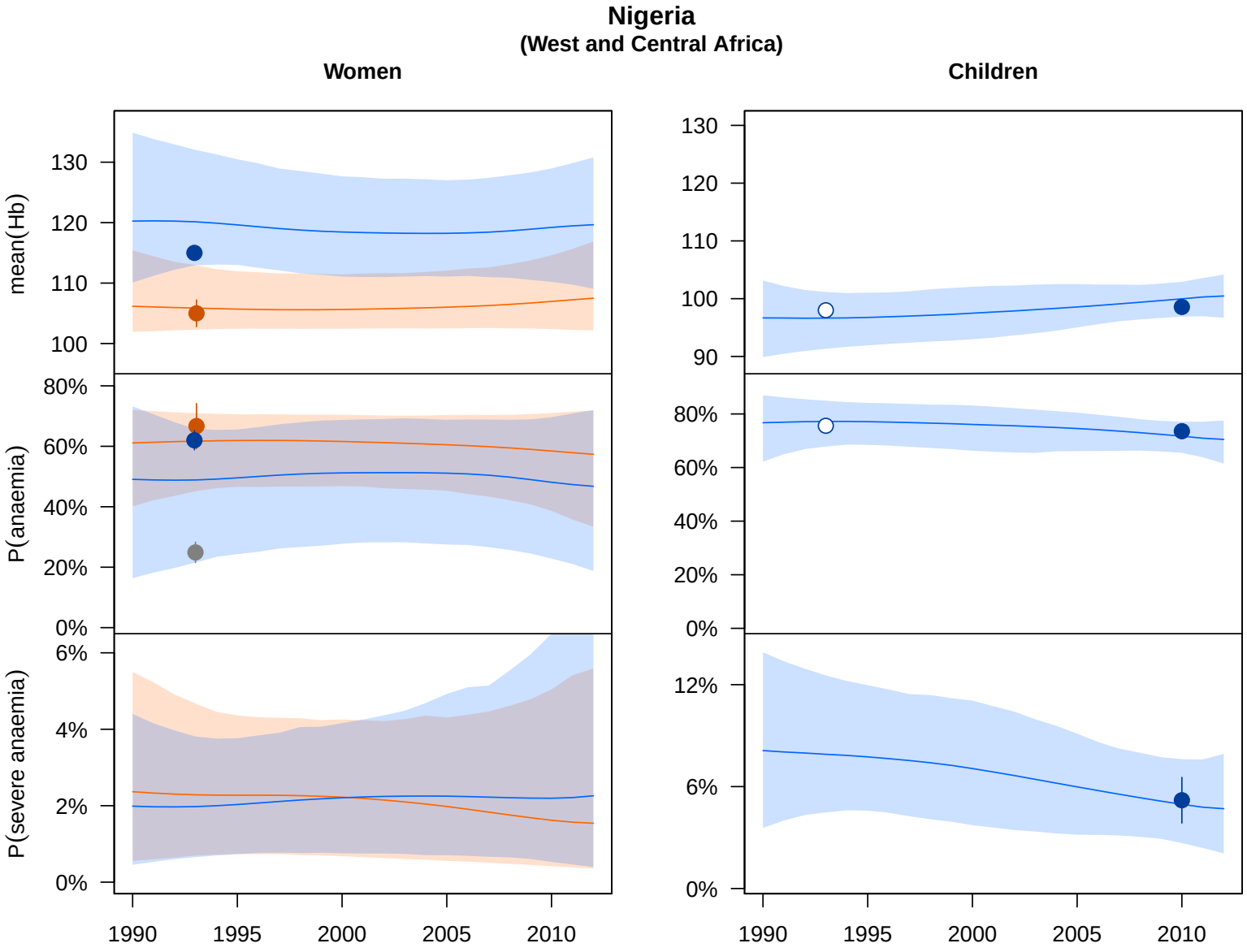
4%
2%
1990
1995
2000
2005
2010


Nicaragua
(Andean and Central Latin America and Caribbean)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Niger
(West and Central Africa)
Women
(2 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Nigeria
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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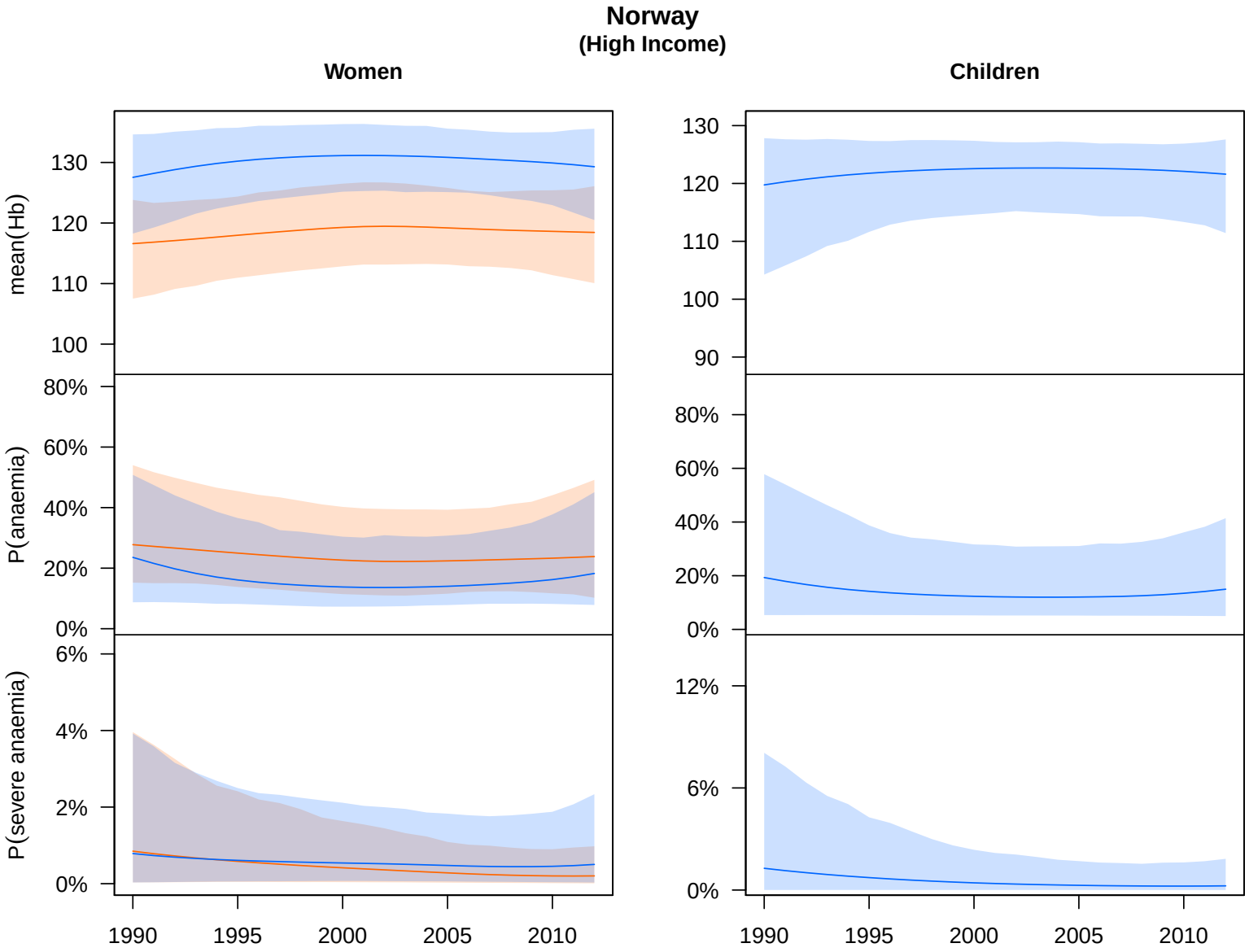
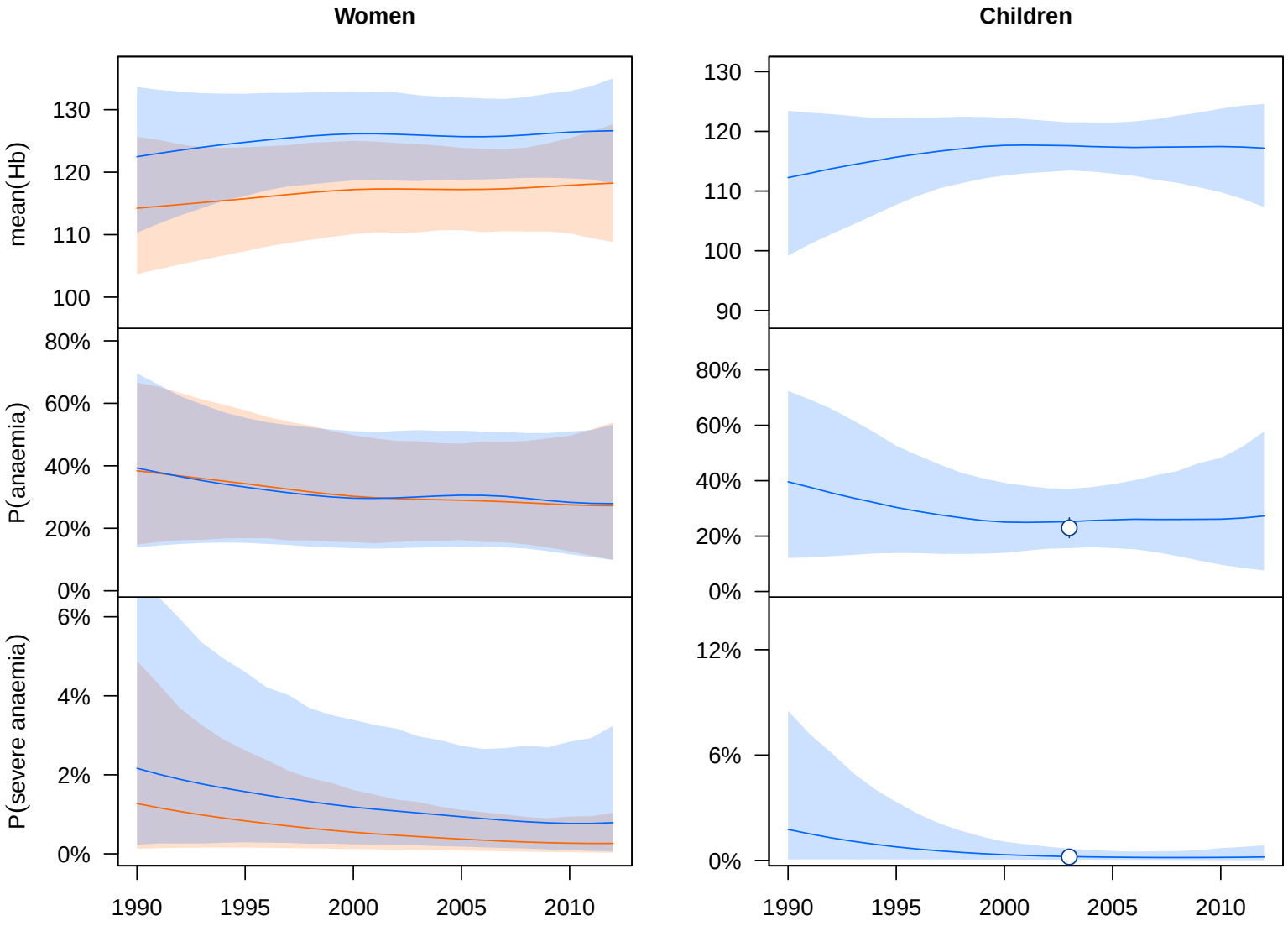
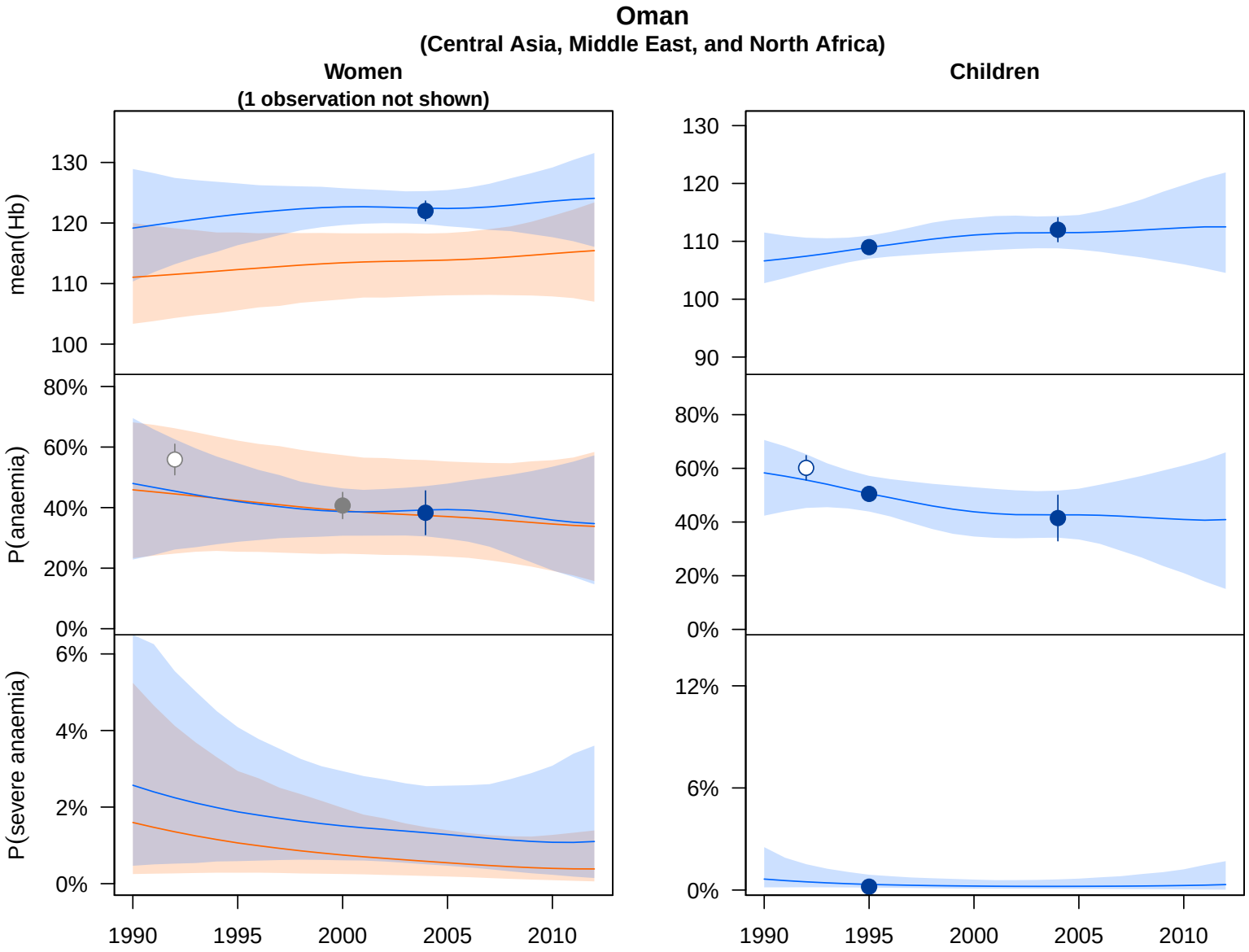
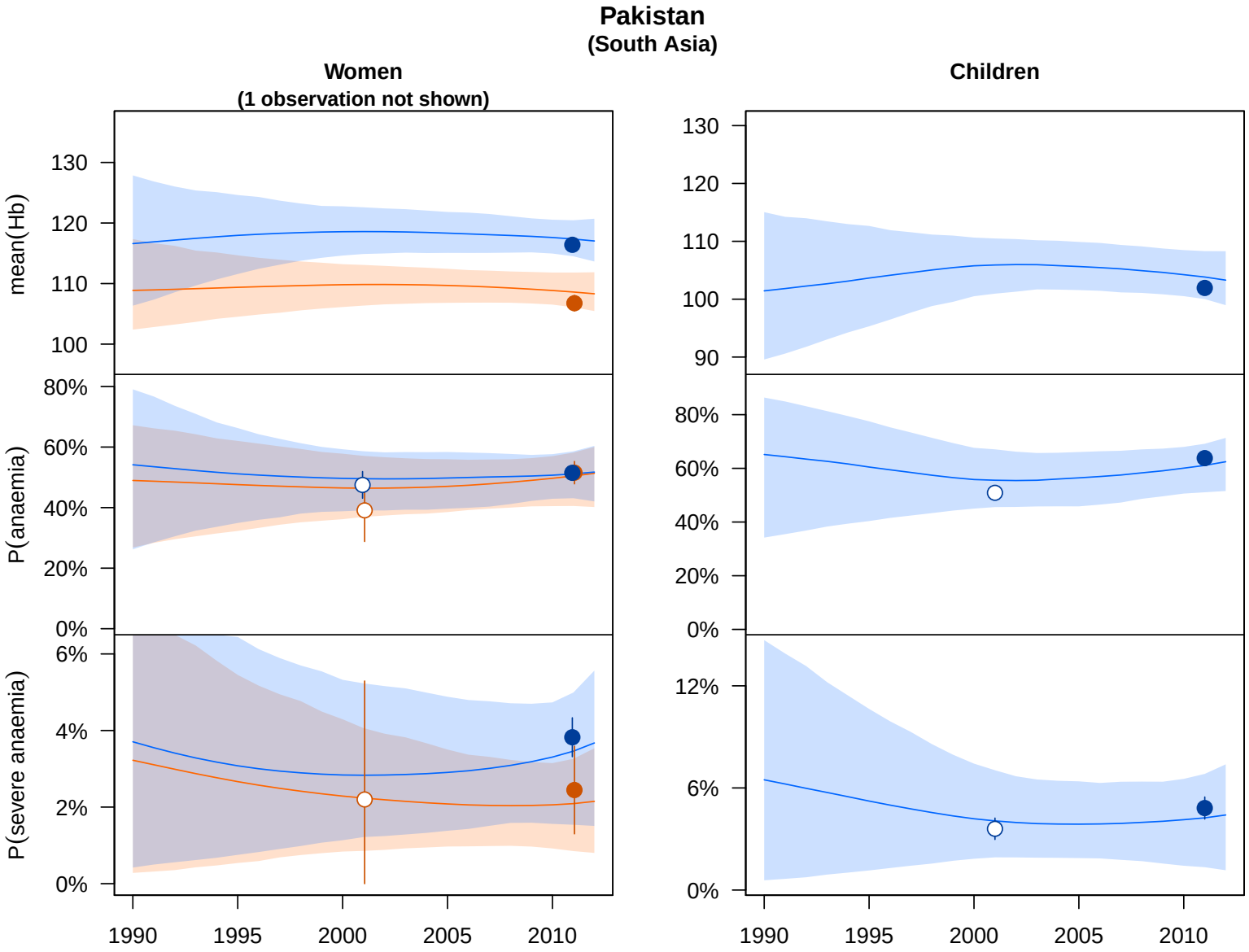
2%
12%
1990
1995
2000
2005
2010

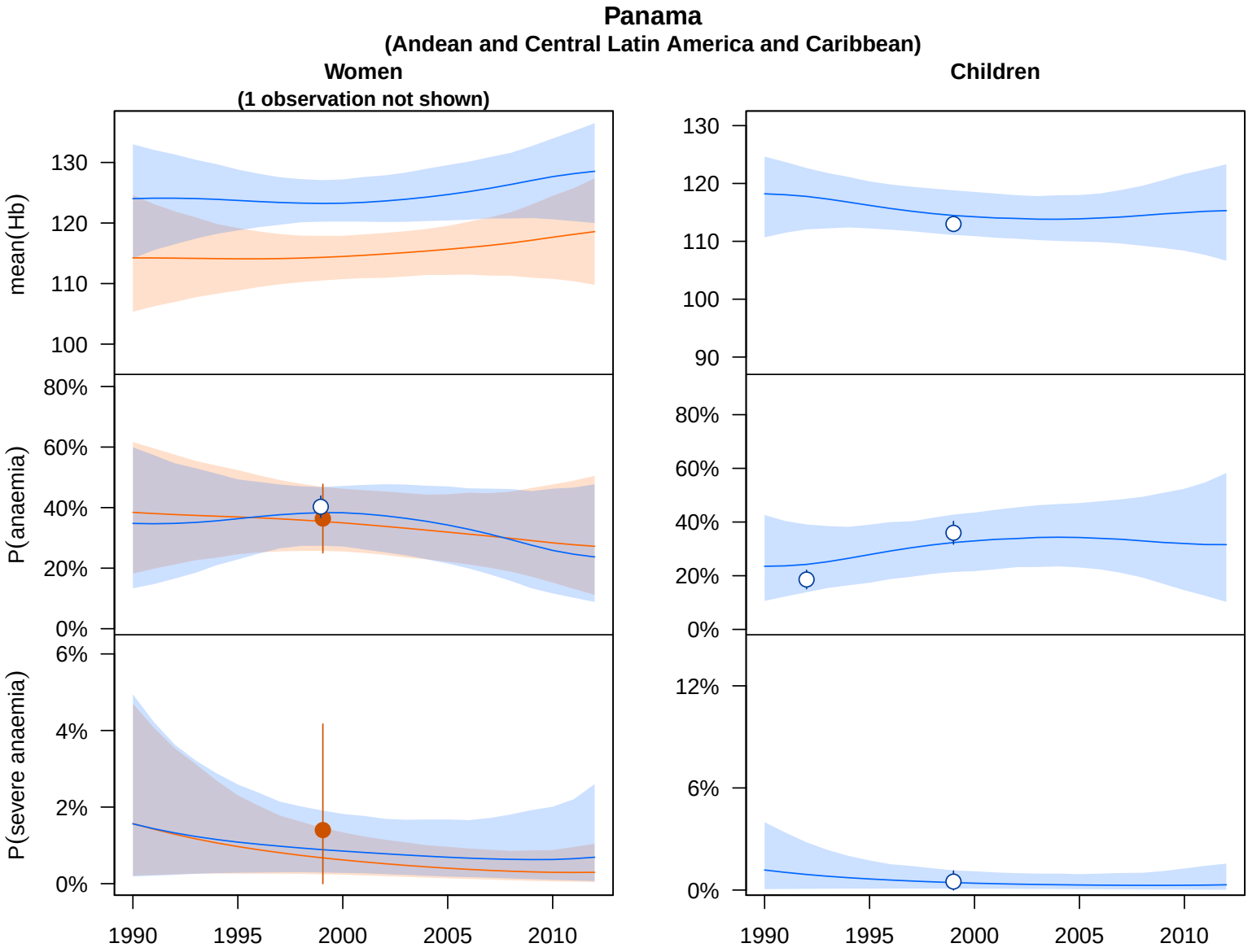

Norway
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

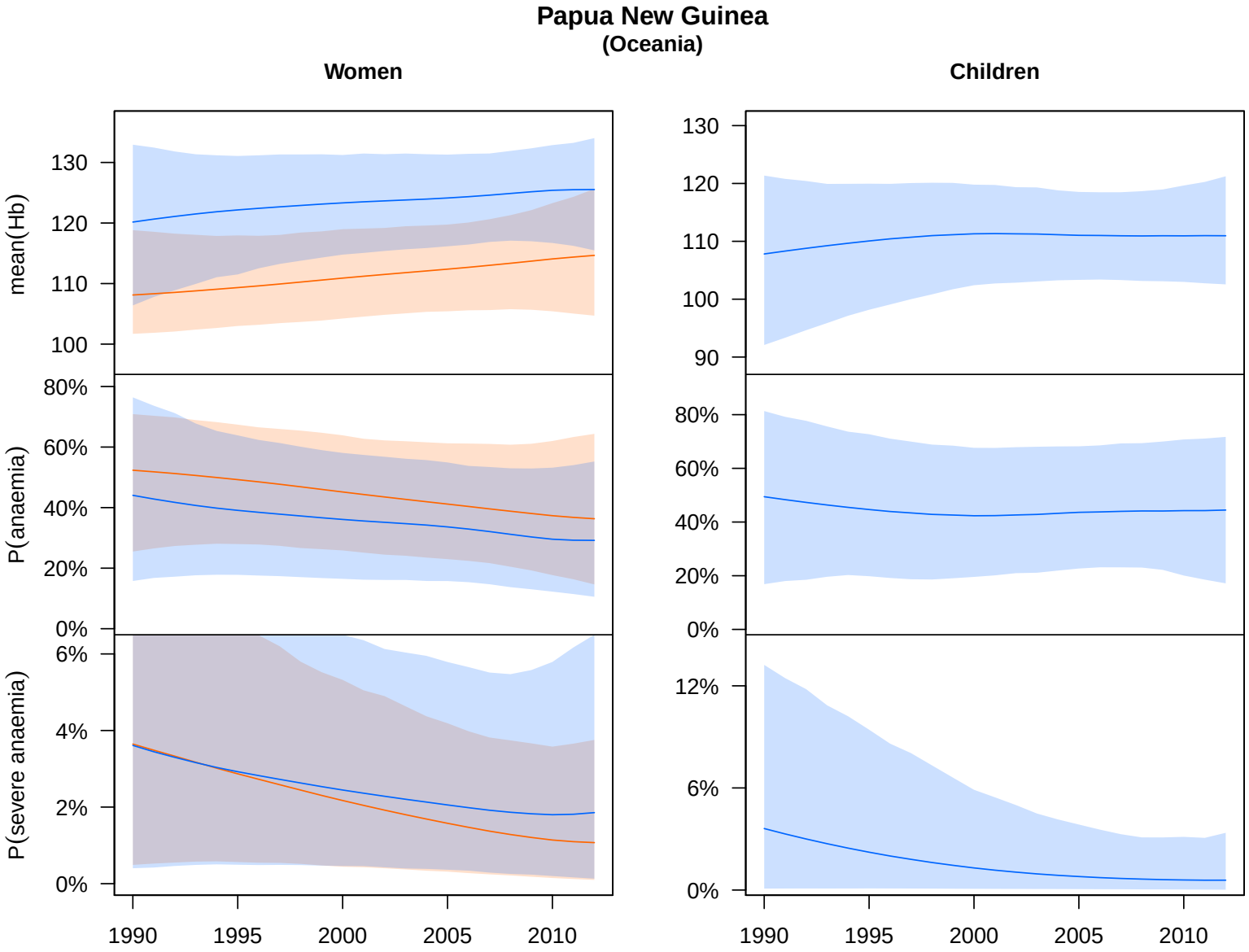
Occupied Palestinian Territory
(Central Asia, Middle East, and North Africa)

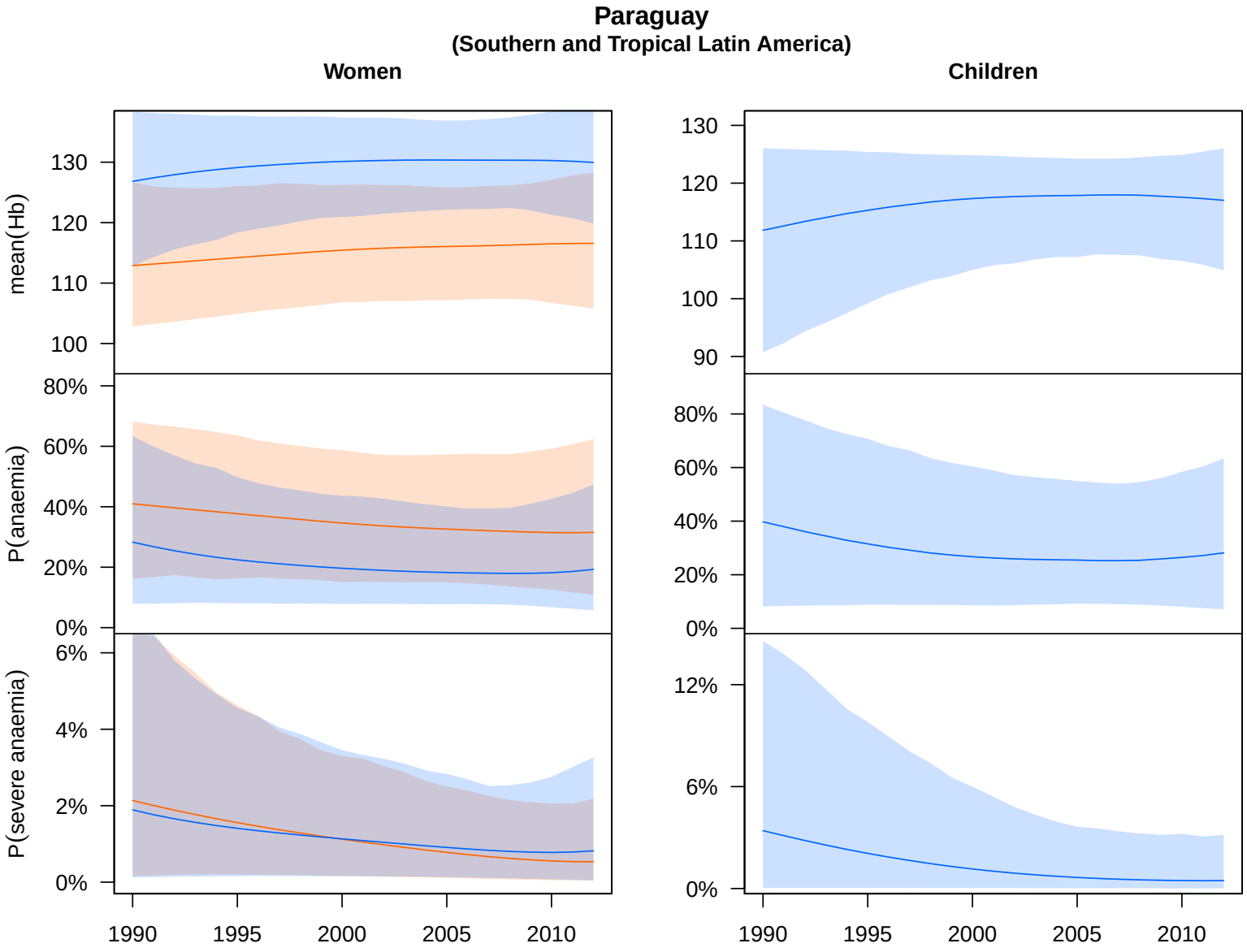


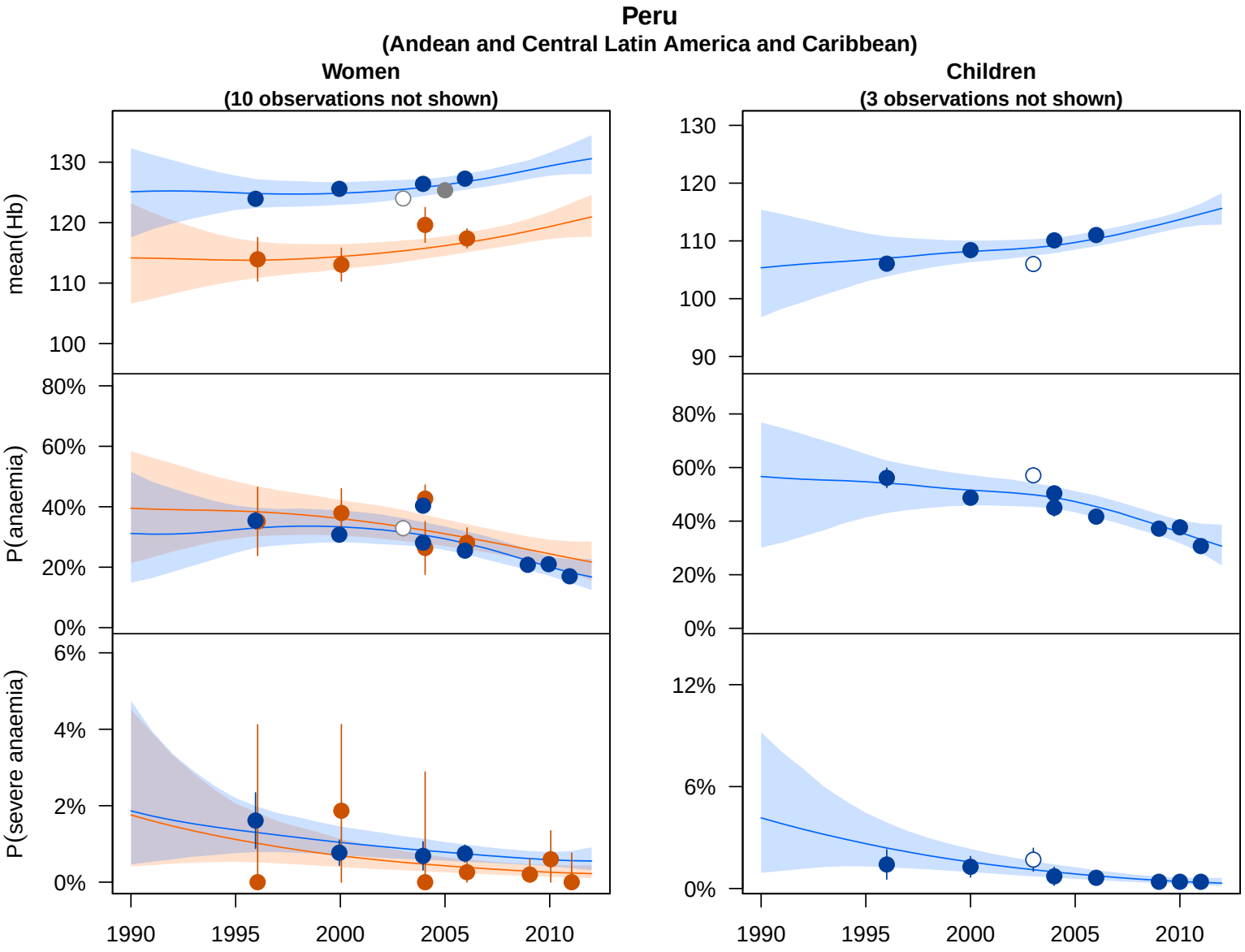

Oman
(Central Asia, Middle East, and North Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

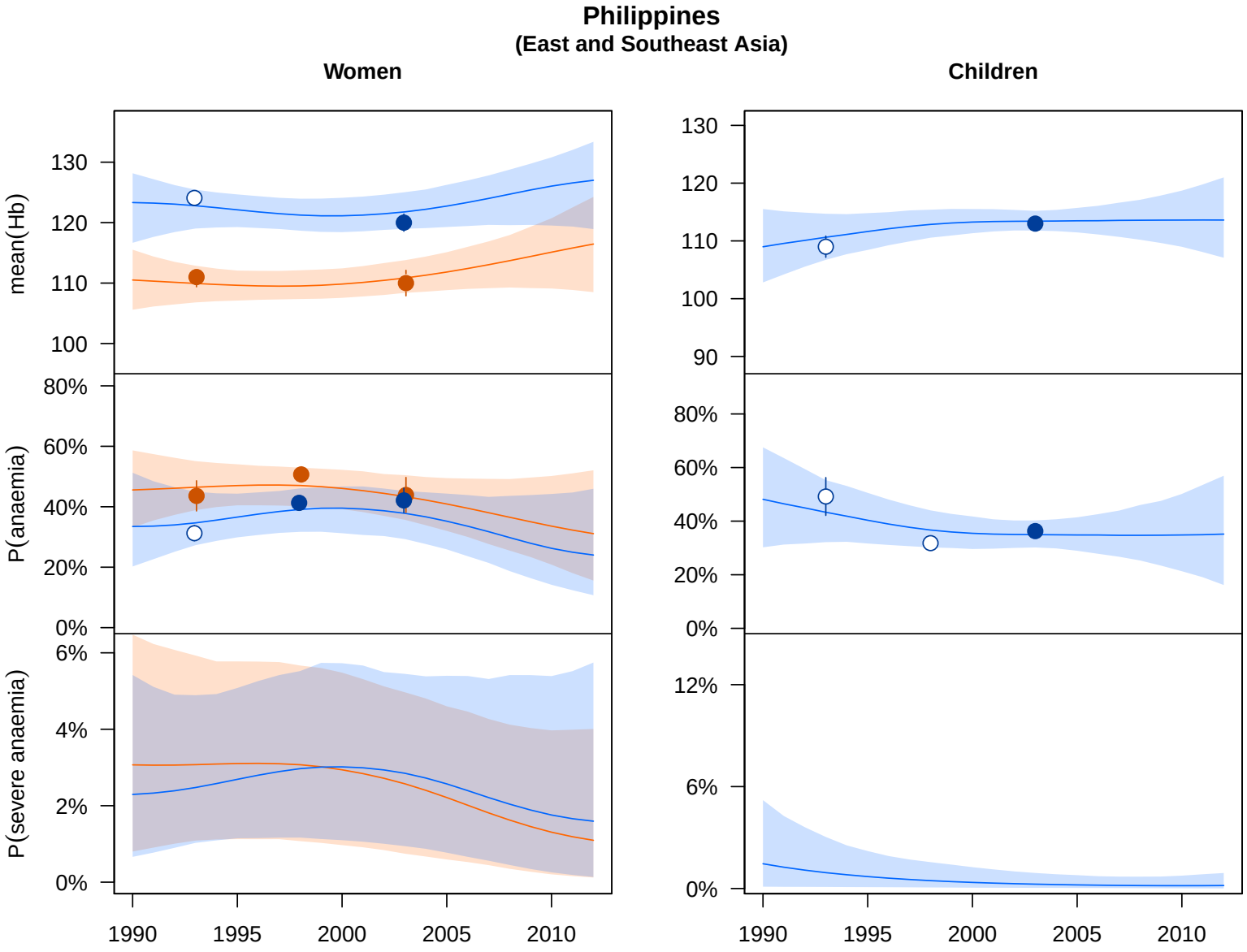

Pakistan
(South Asia)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Panama
(Andean and Central Latin America and Caribbean)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Papua New Guinea
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Paraguay
(Southern and Tropical Latin America)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Peru
(Andean and Central Latin America and Caribbean)
Women
(10 observations not shown)
Children
(3 observations not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Philippines
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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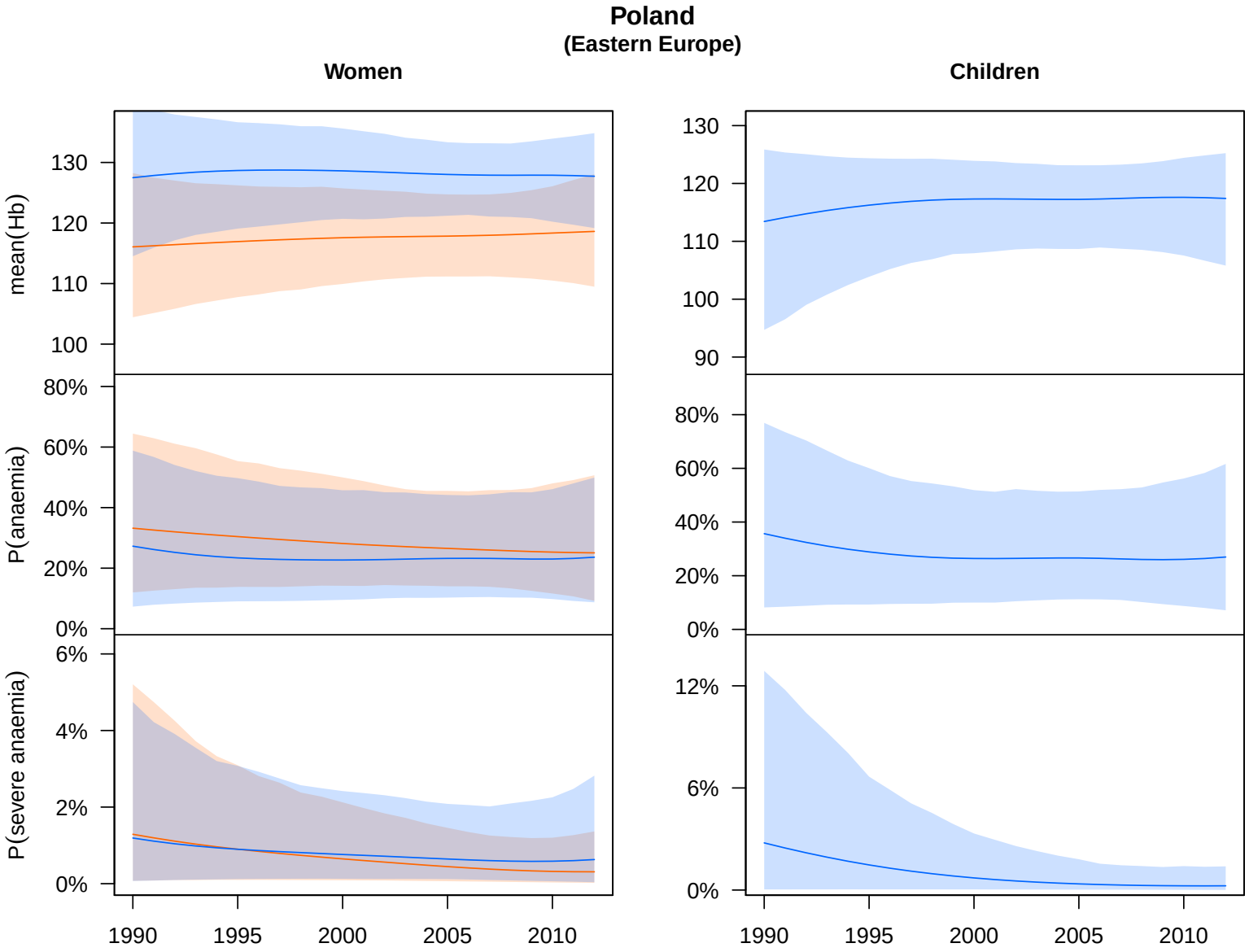
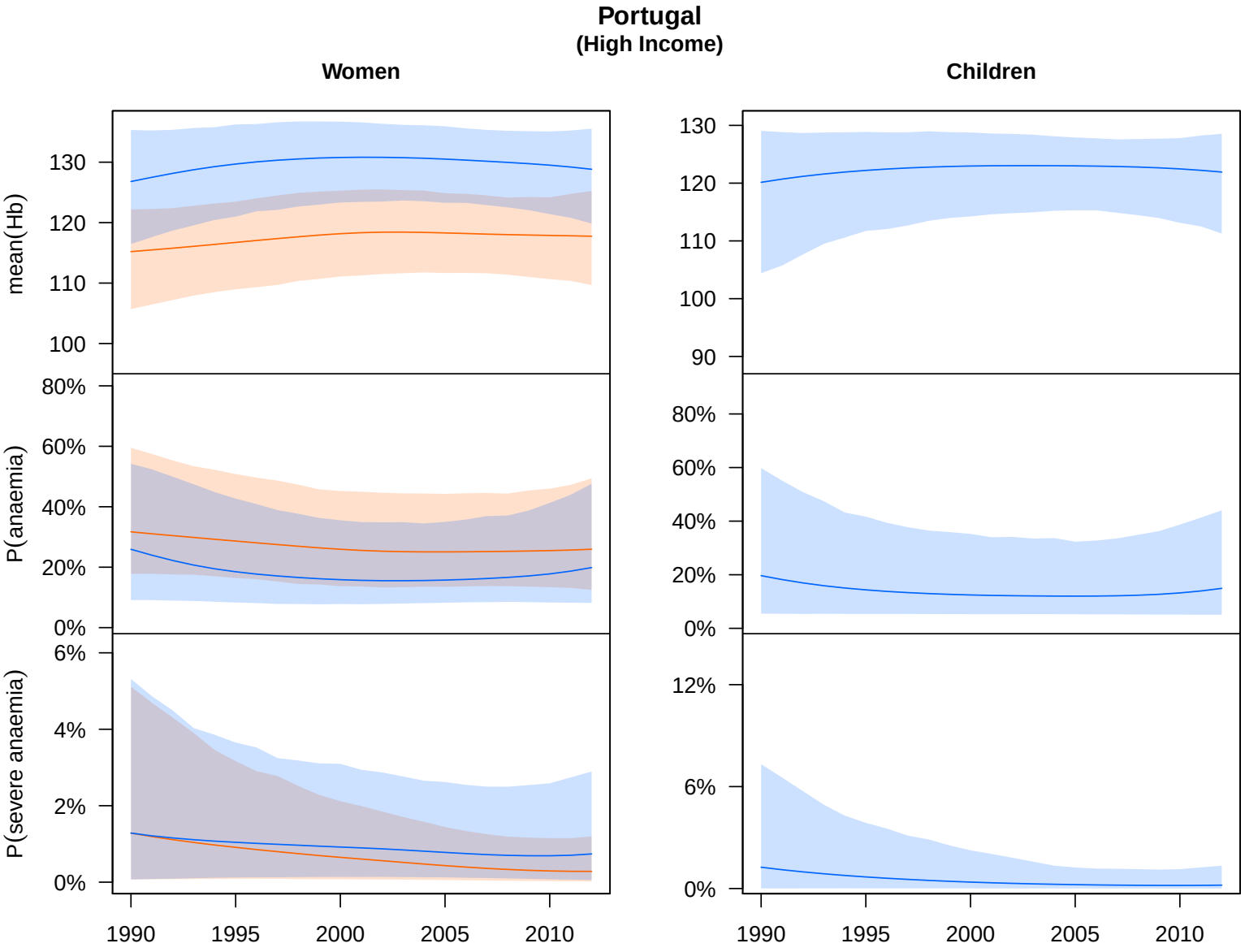
12%
1990
1995
2000
2005
2010


Poland
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Portugal
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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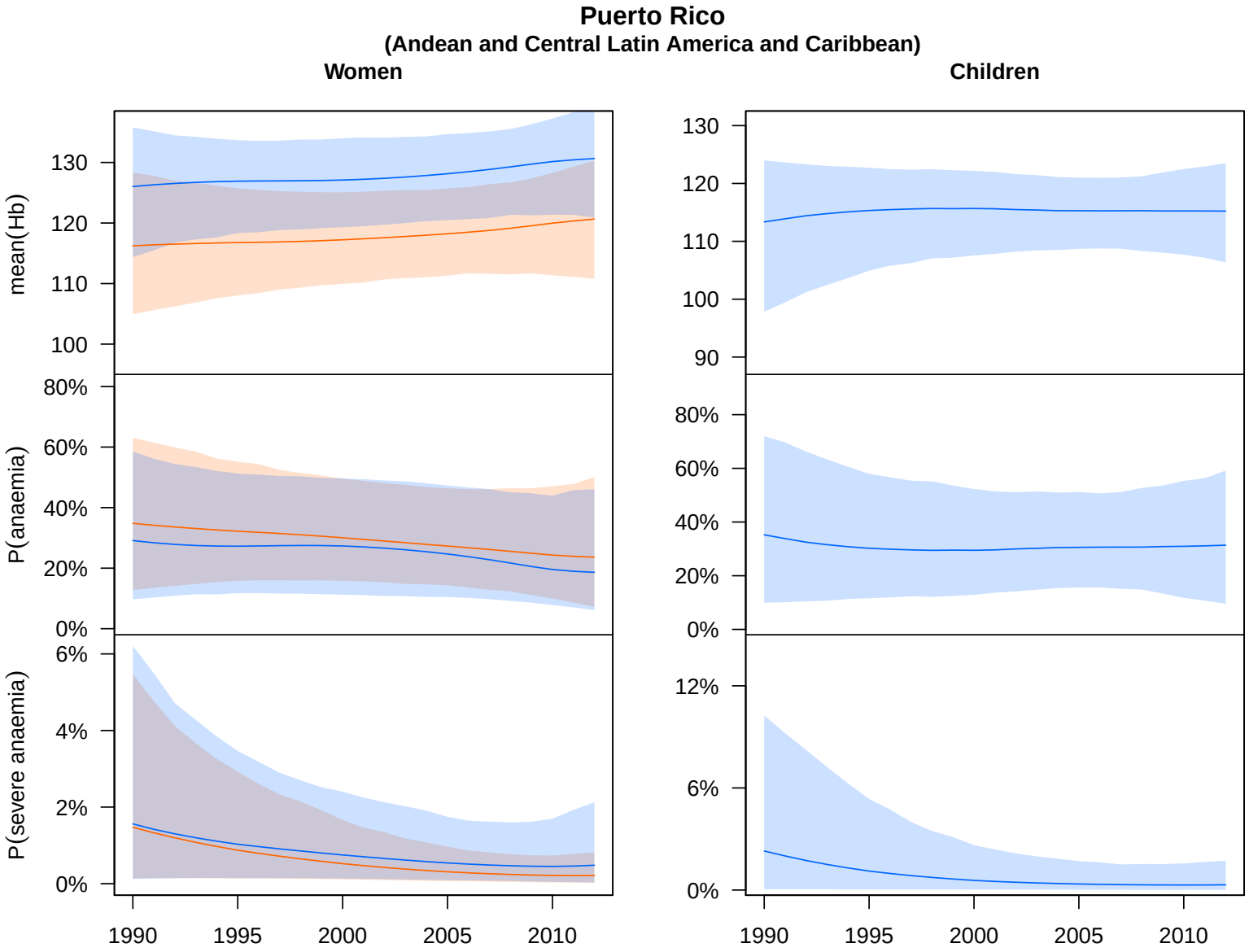
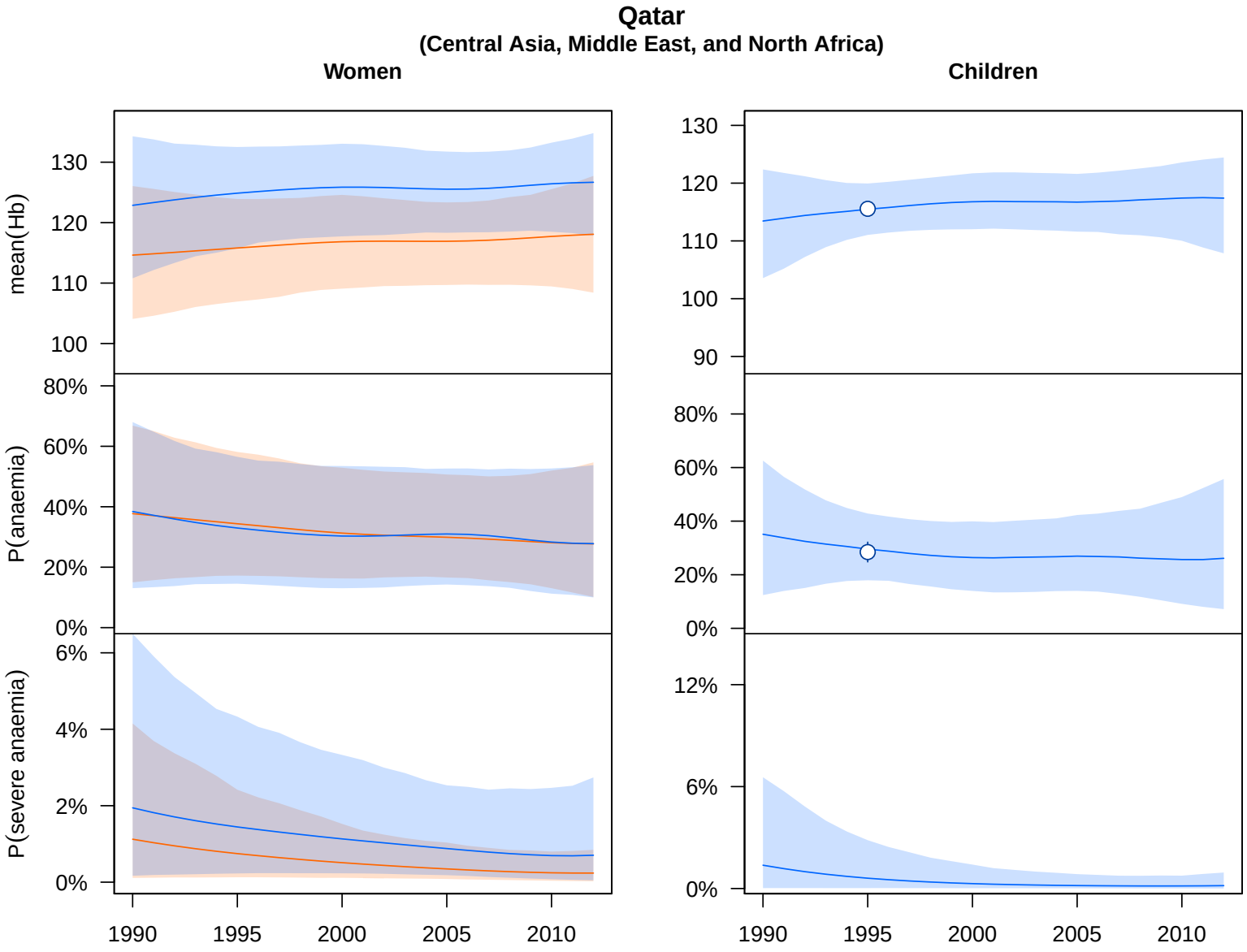
1990
1995
2000
2005
2010


Puerto Rico
(Andean and Central Latin America and Caribbean)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Qatar
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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1990
1995
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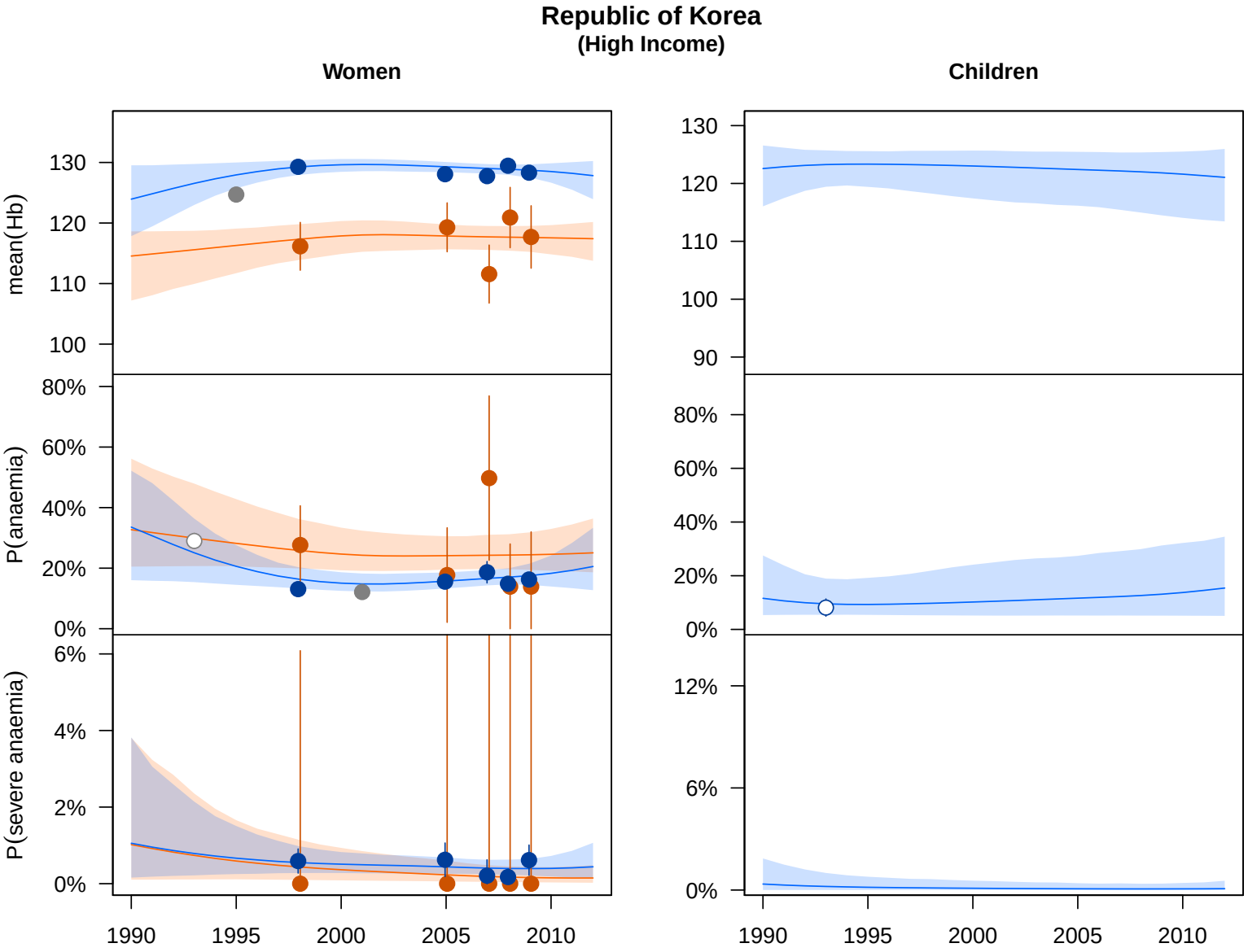
2010


Republic of Korea
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
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2%
1990
1995
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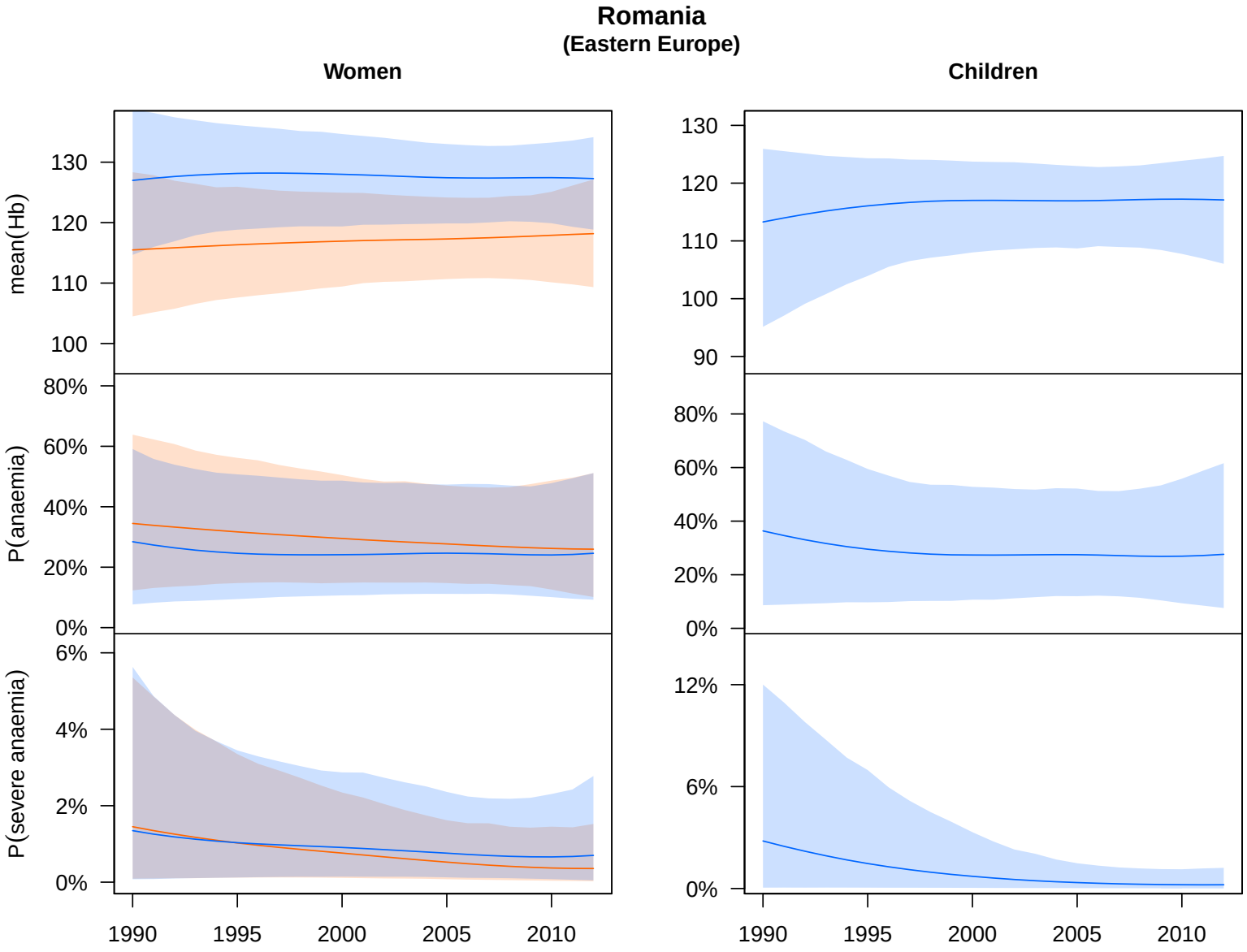
2005
2010


Romania
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
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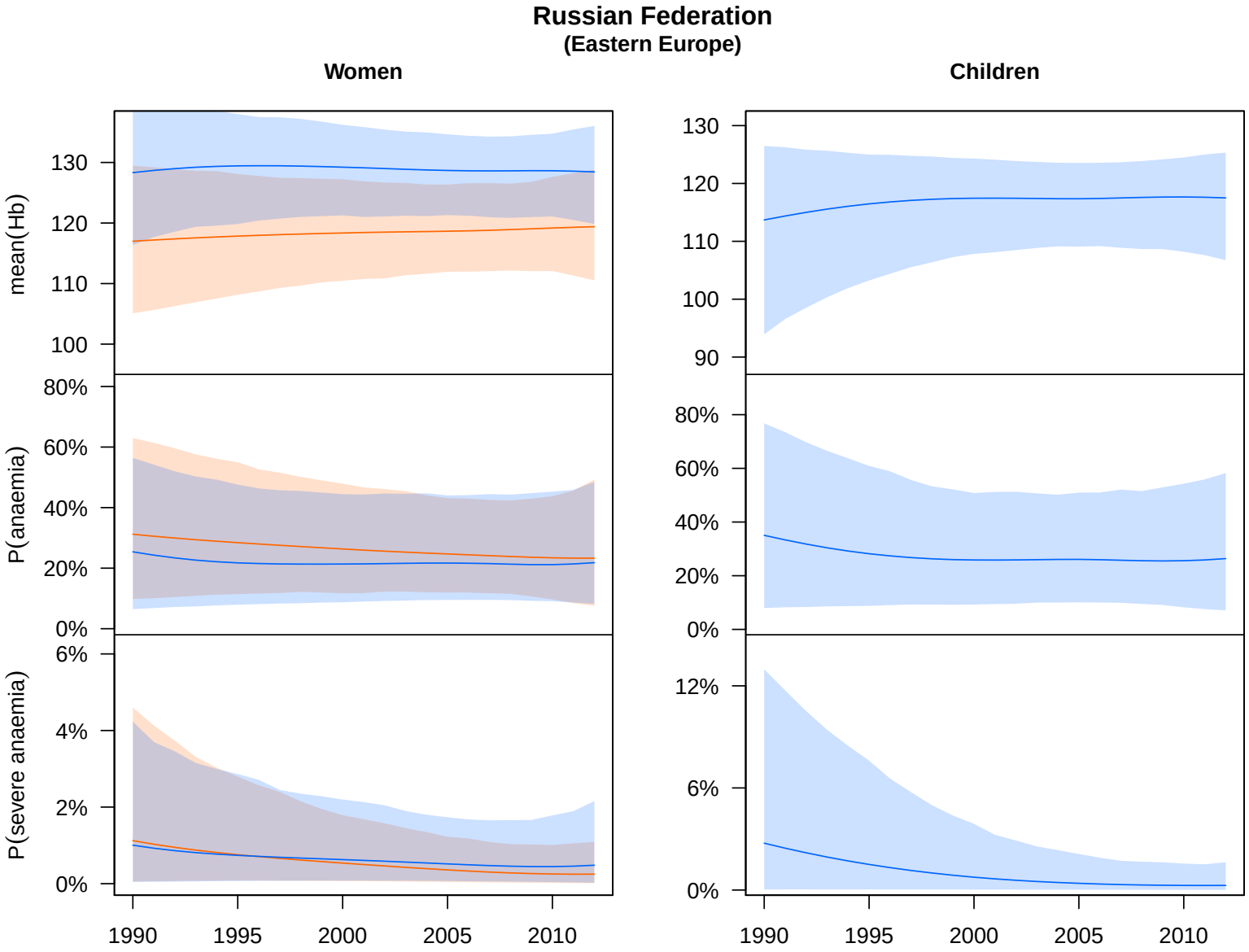
2%
12%
1990
1995
2000
2005
2010


Russian Federation
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
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12%
1990
1995
2000
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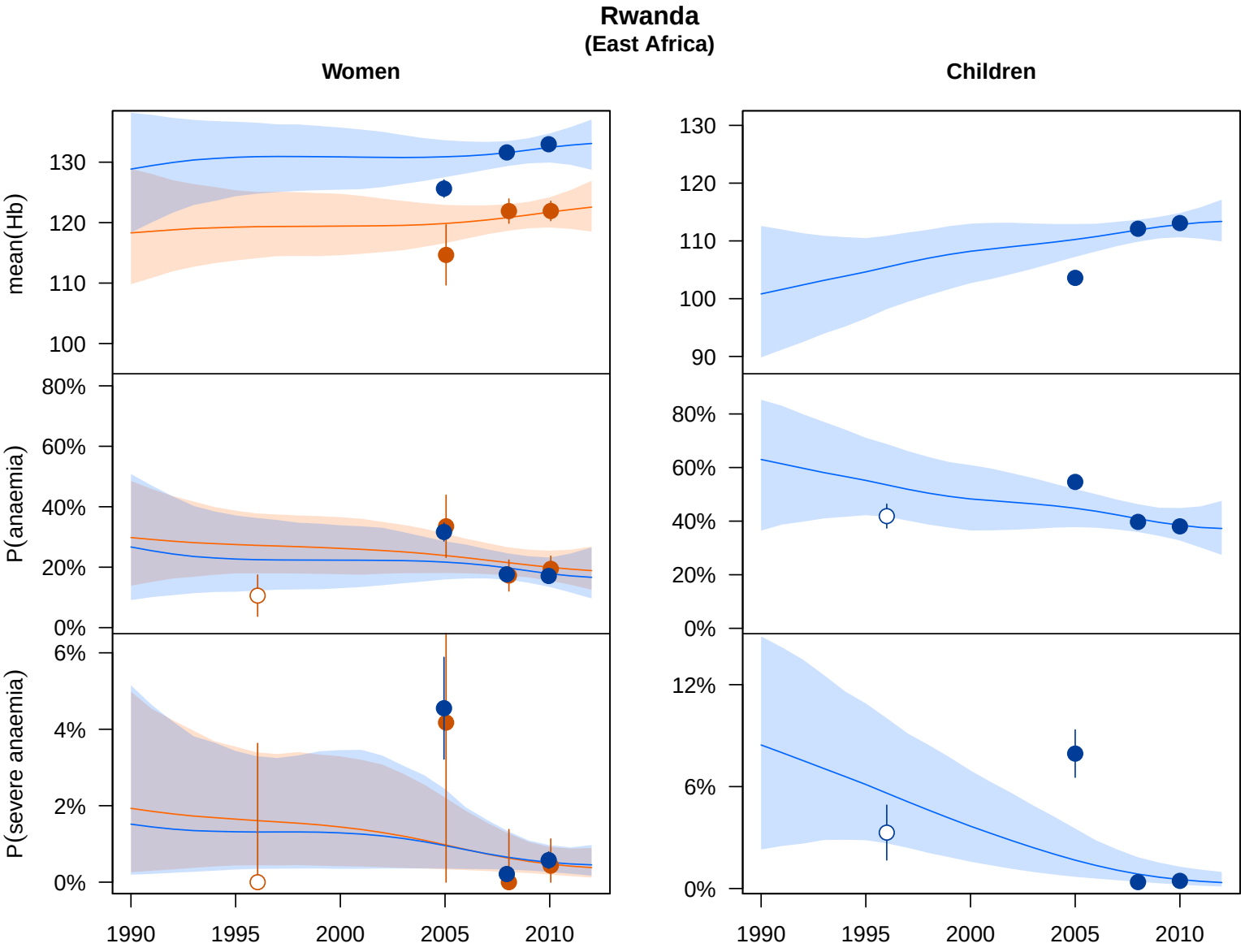
2010


Rwanda
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
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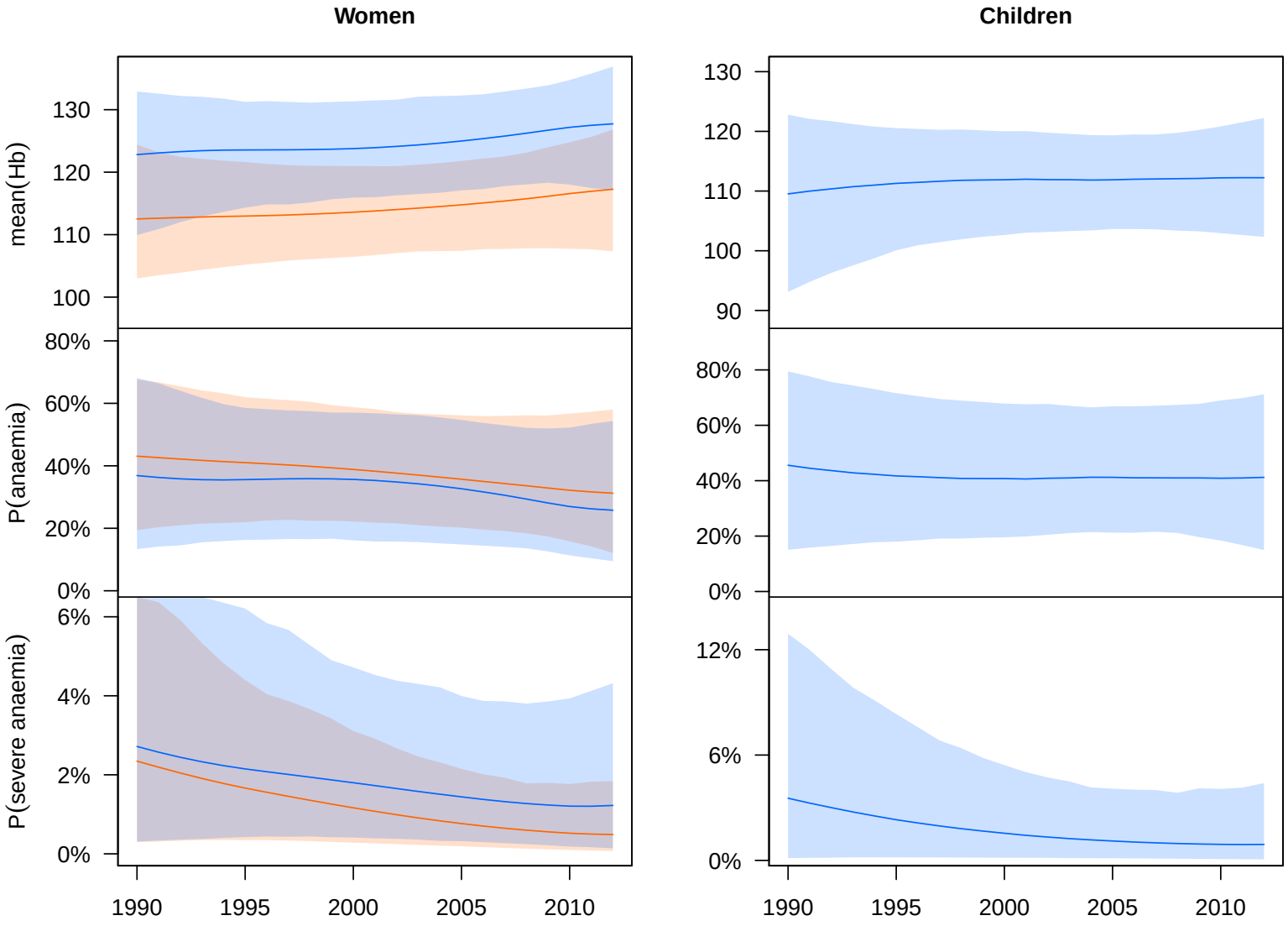
12%
1990
1995
2000
2005
2010

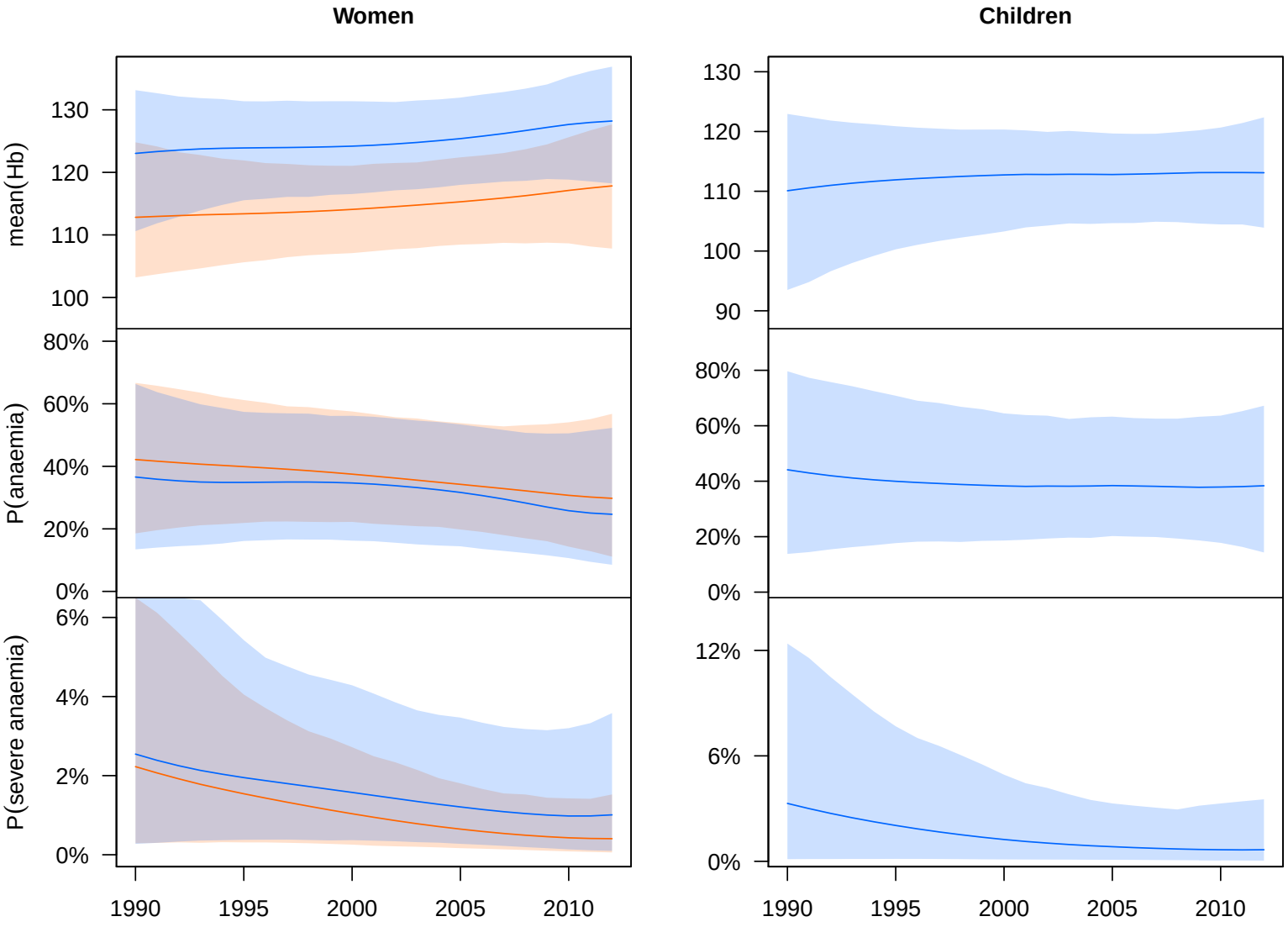
Saint Lucia

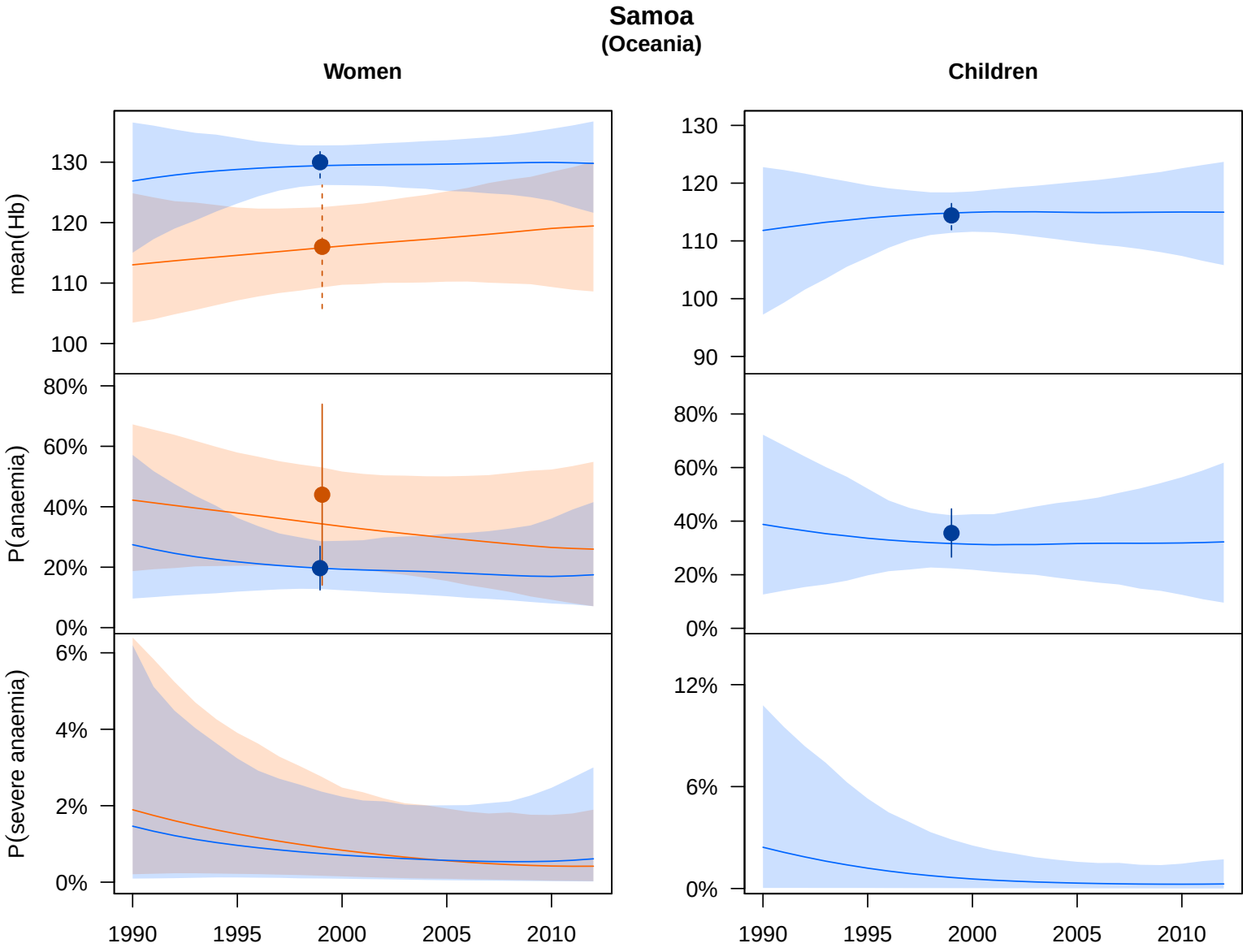
(Andean and Central Latin America and Caribbean)



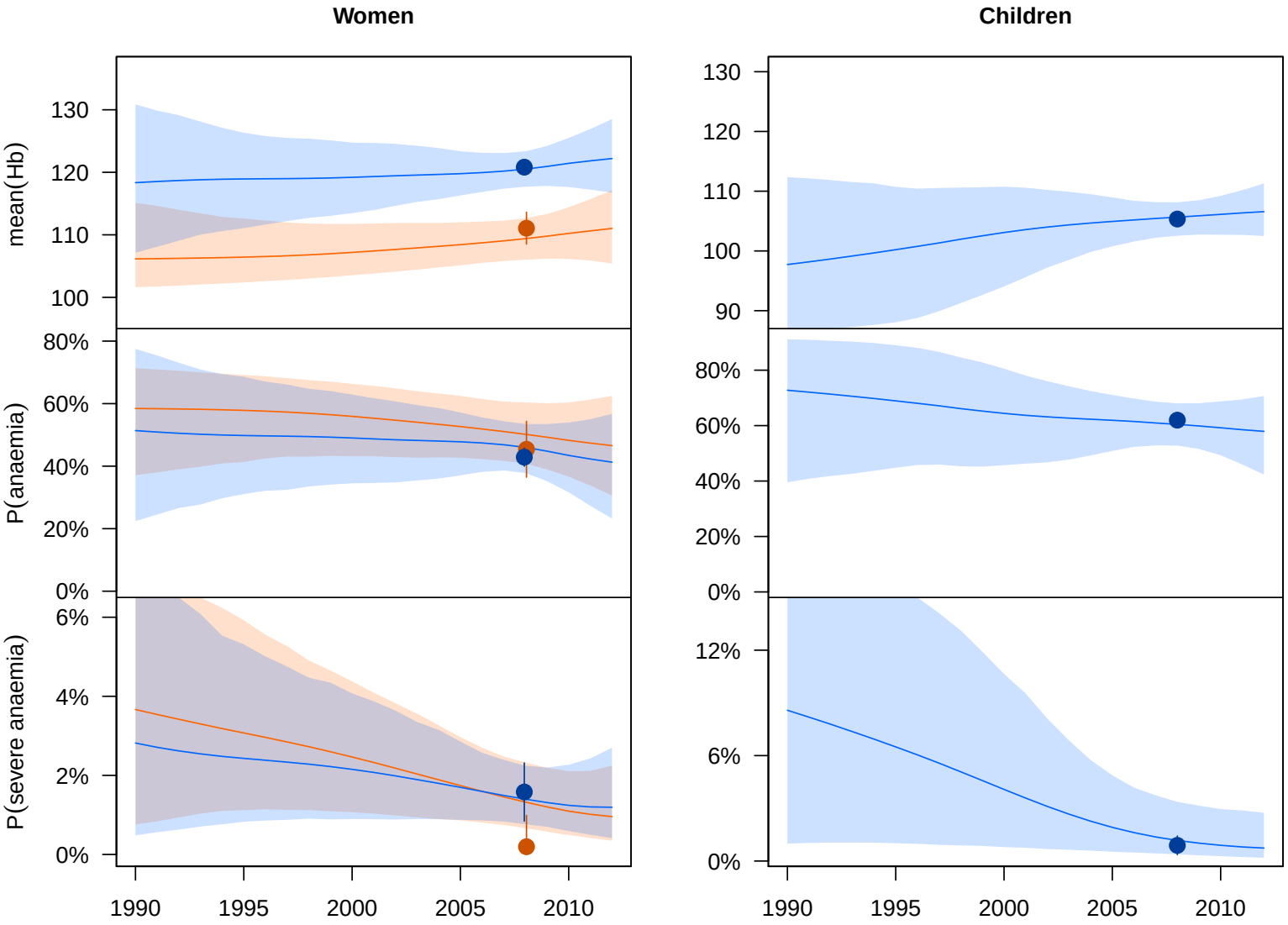
Saint Vincent and the Grenadines

(Andean and Central Latin America and Caribbean)

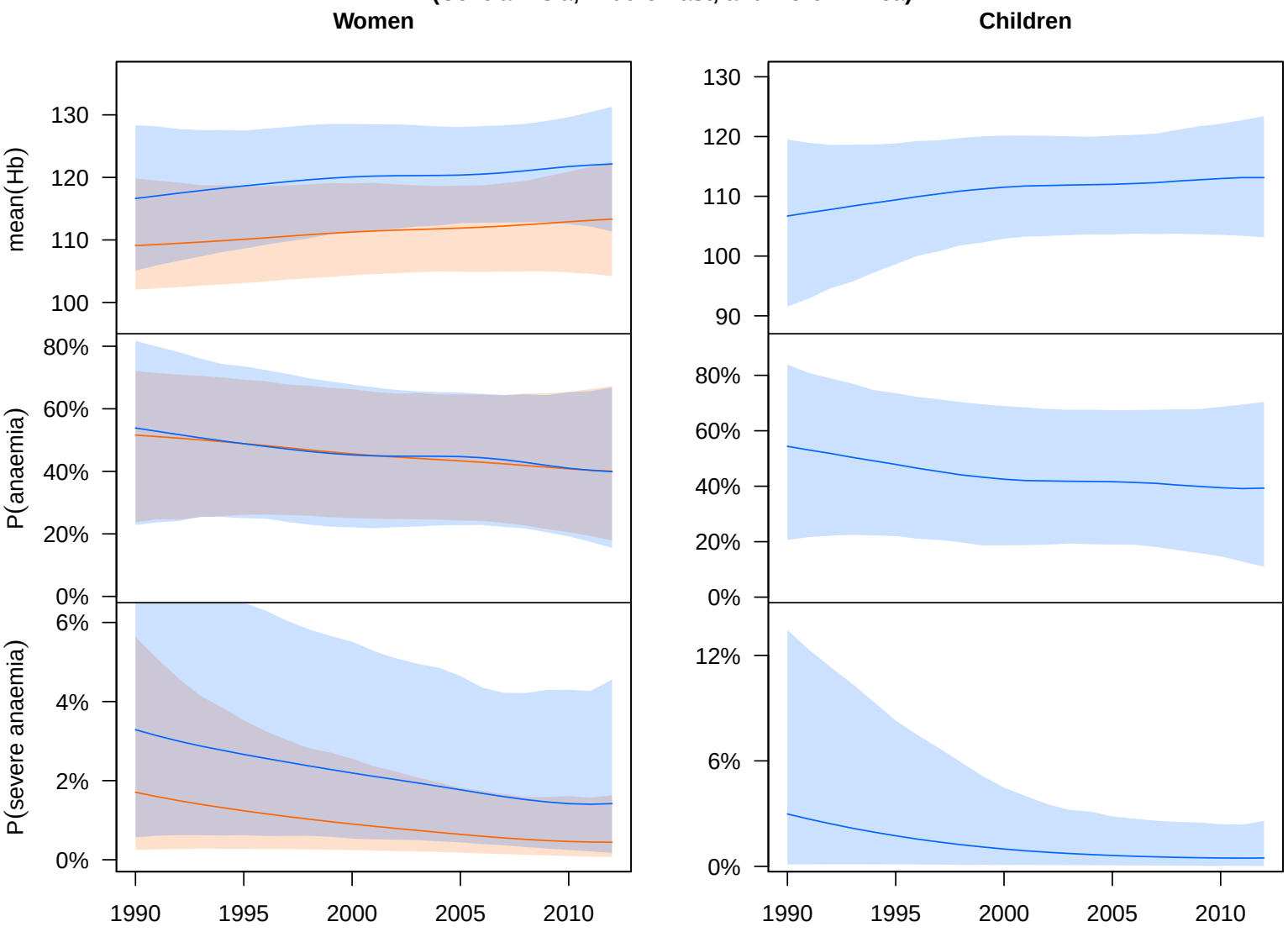


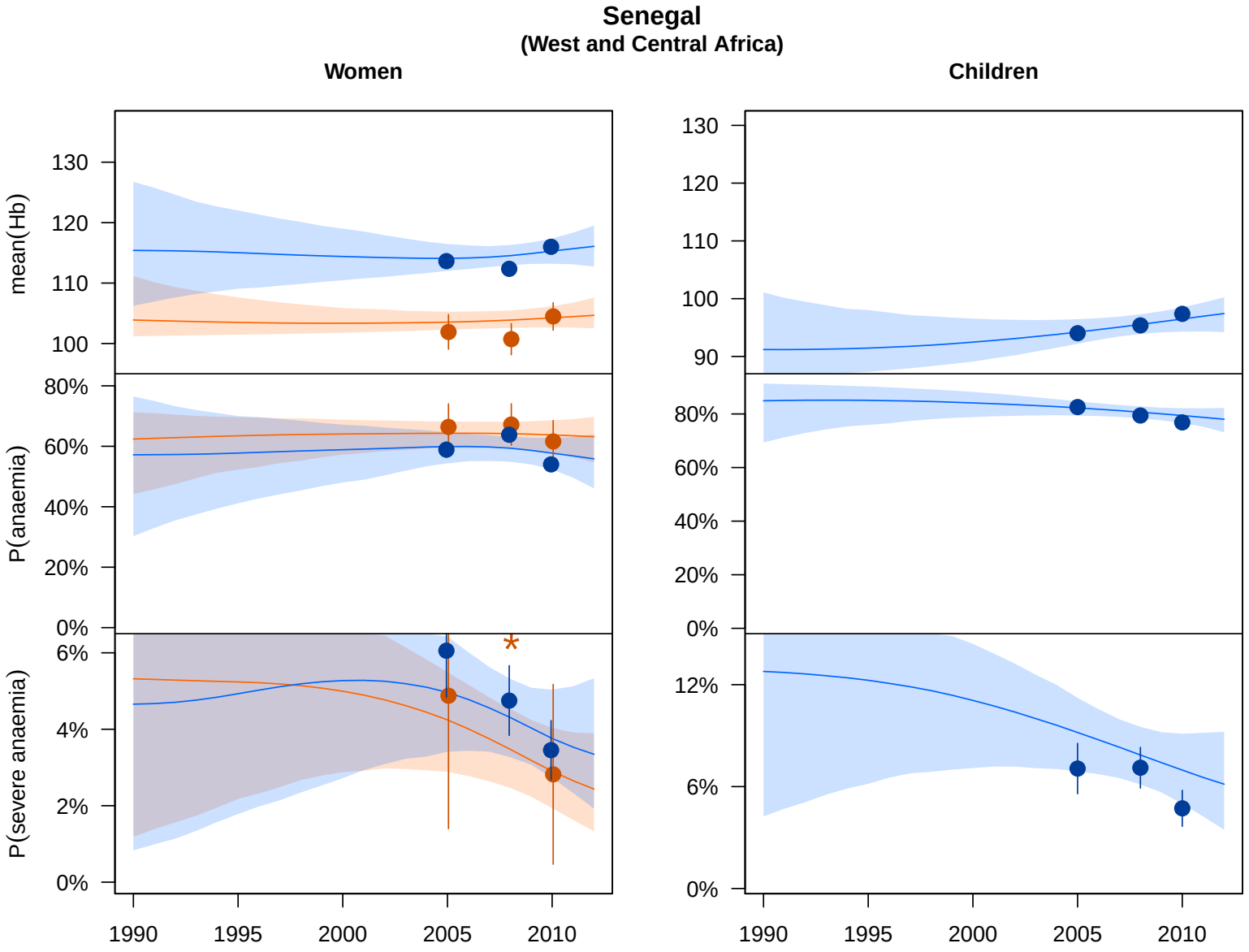

Samoa
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

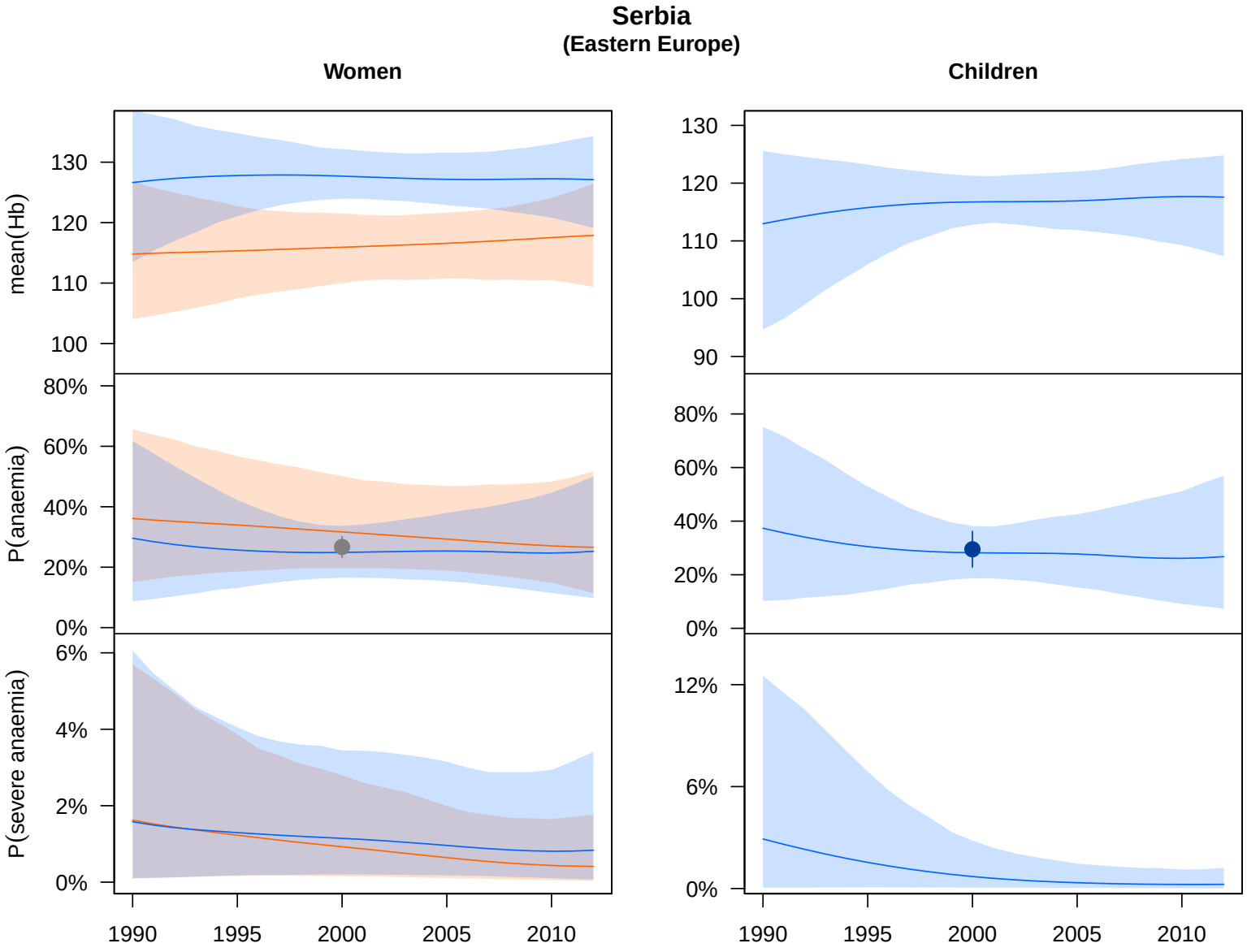
São Tomé and Príncipe
(West and Central Africa)

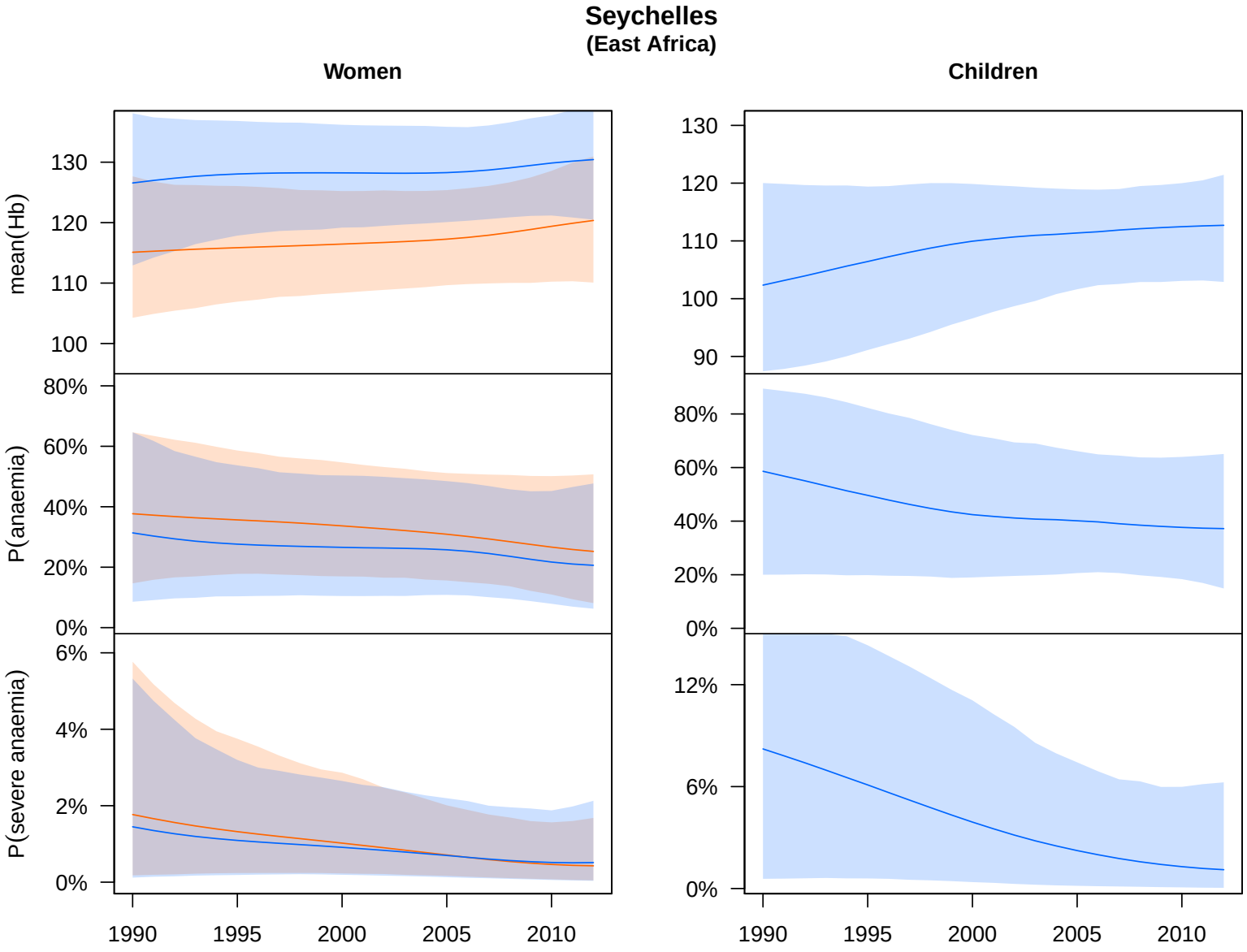


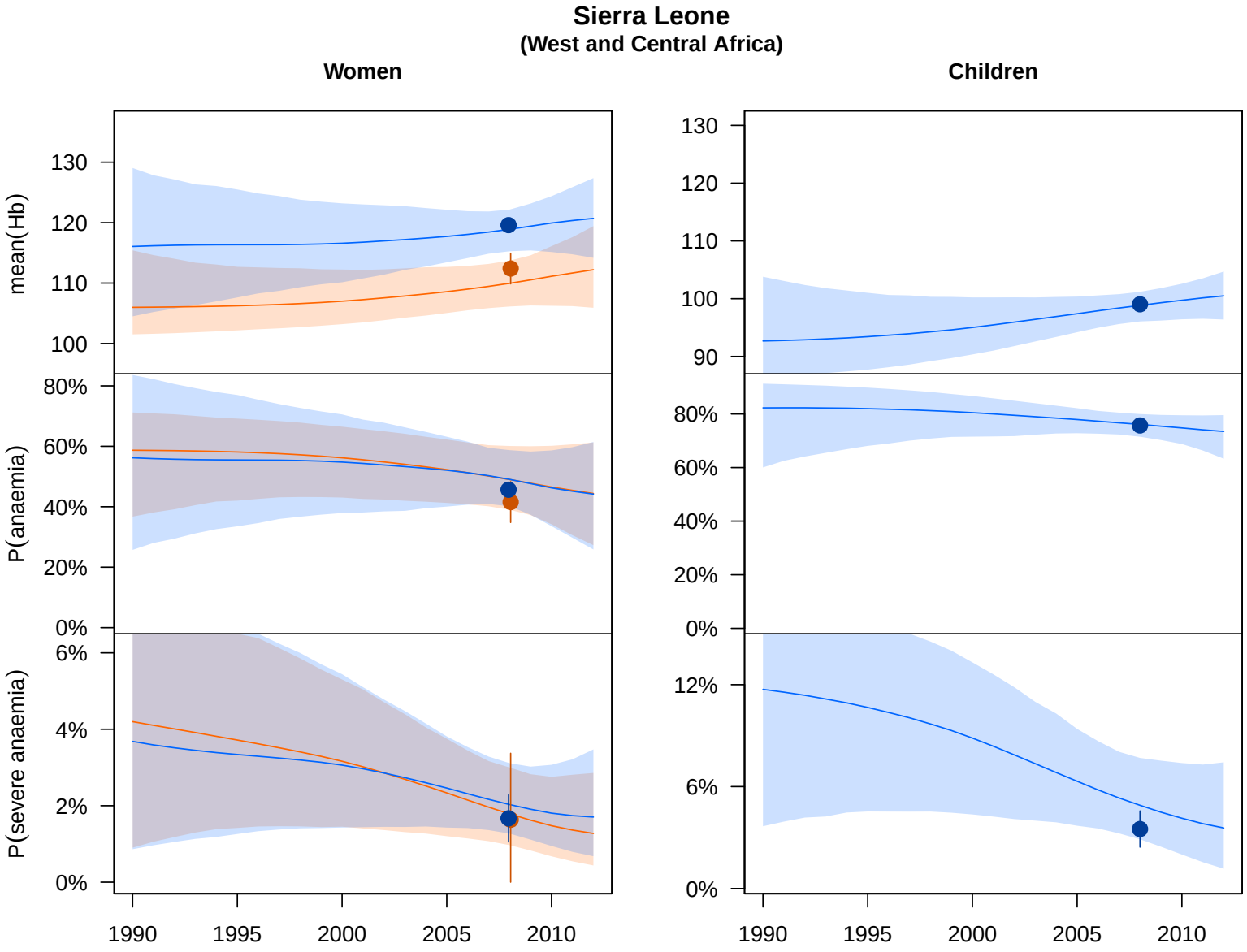
Saudi Arabia
(Central Asia, Middle East, and North Africa)

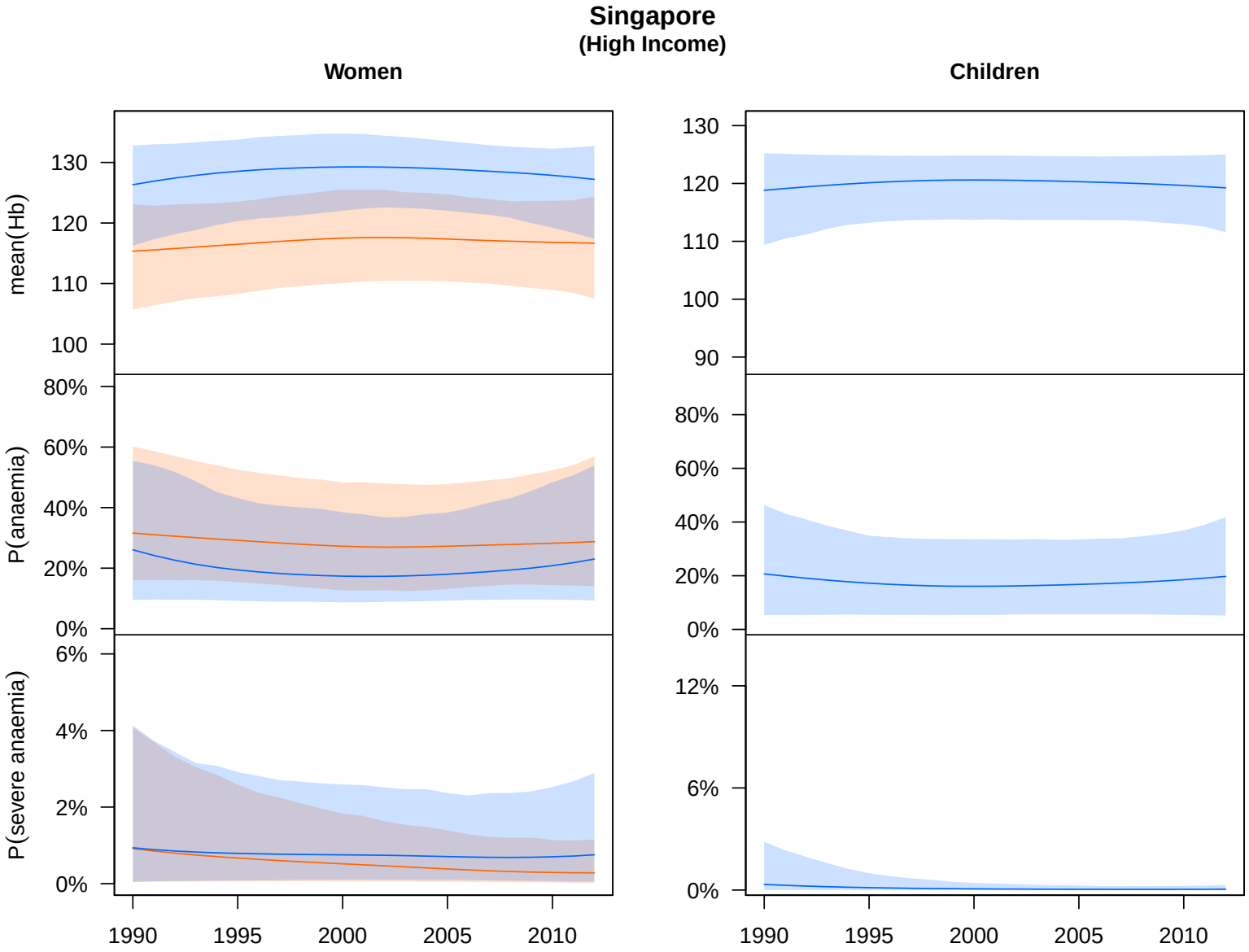


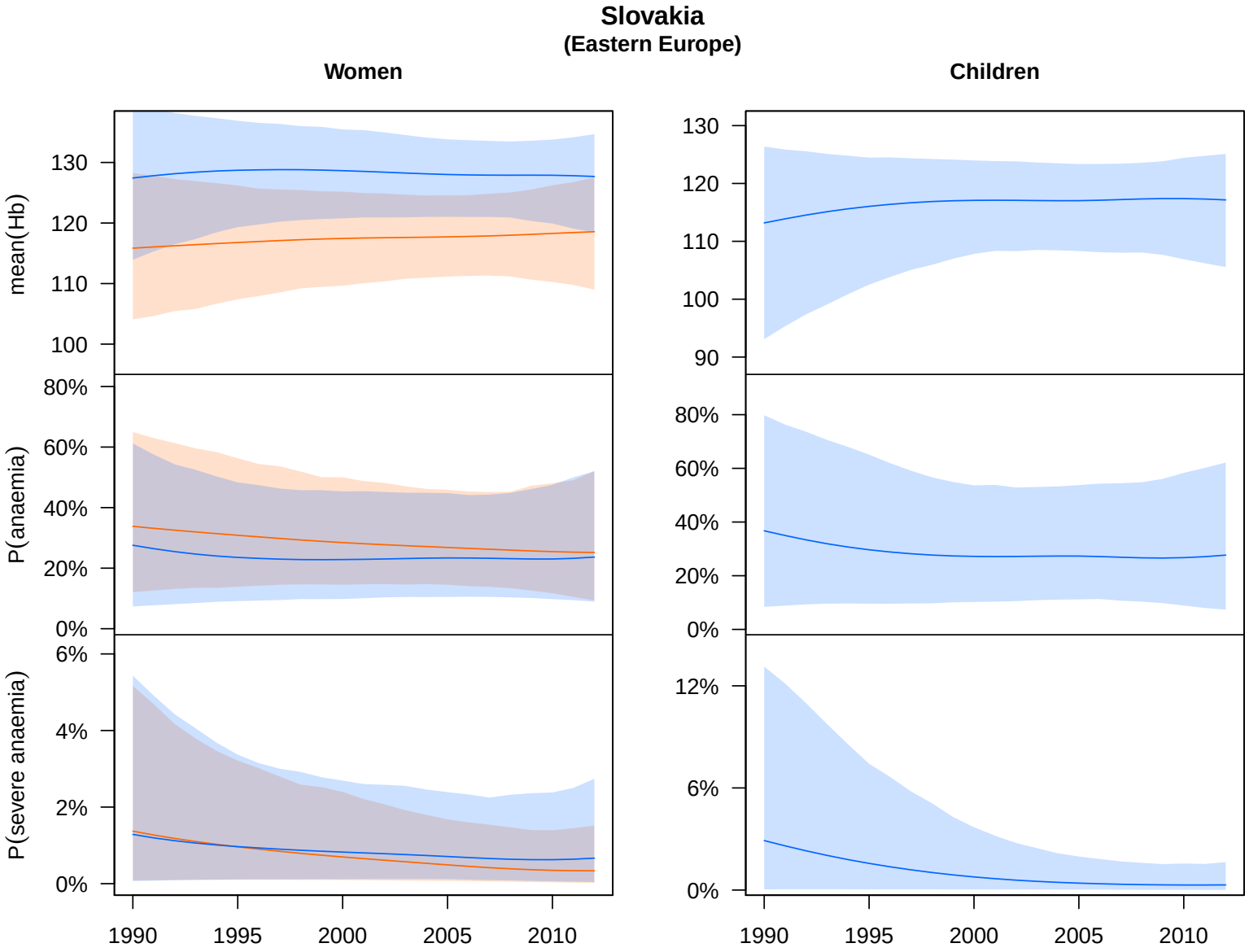

Senegal
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

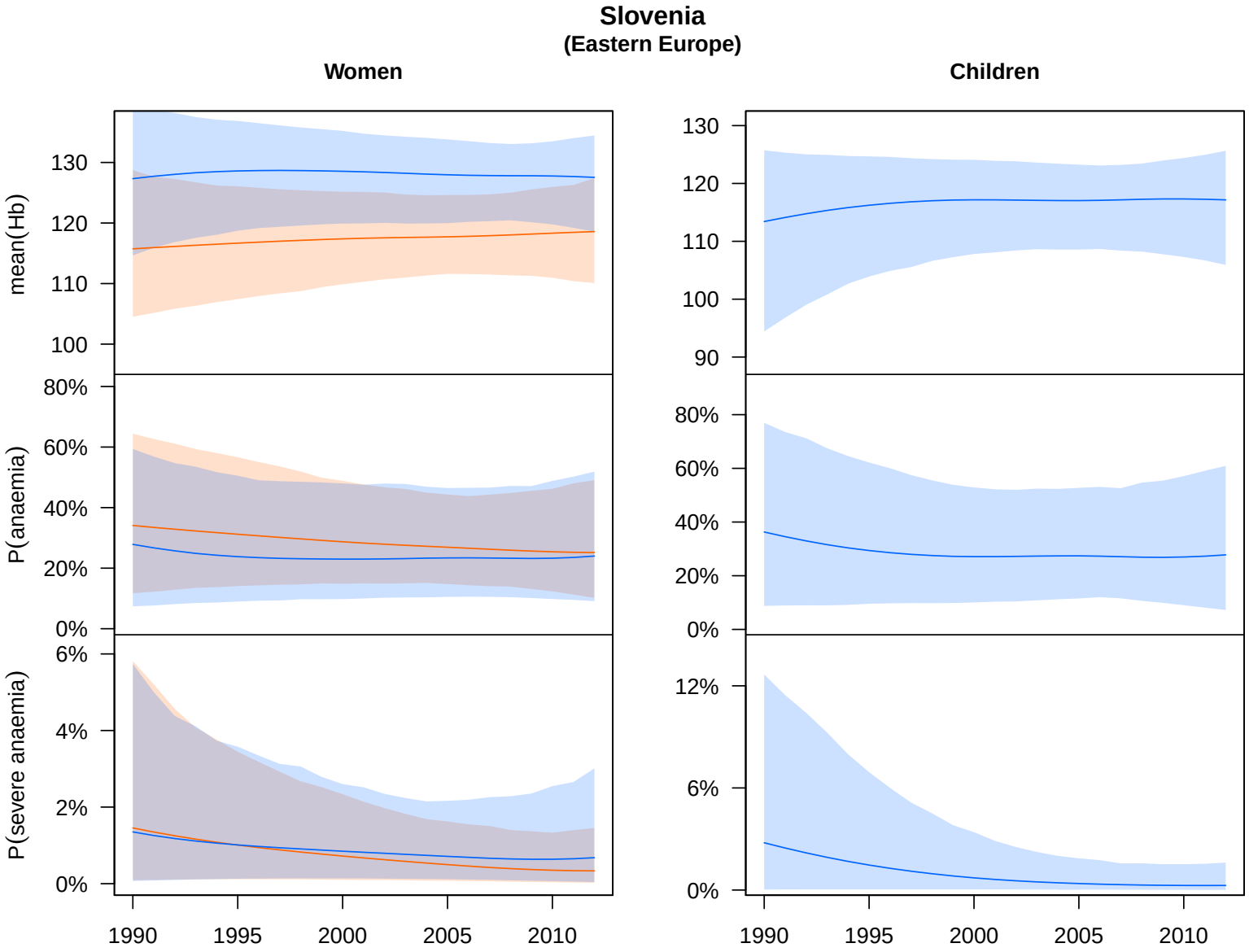

Serbia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

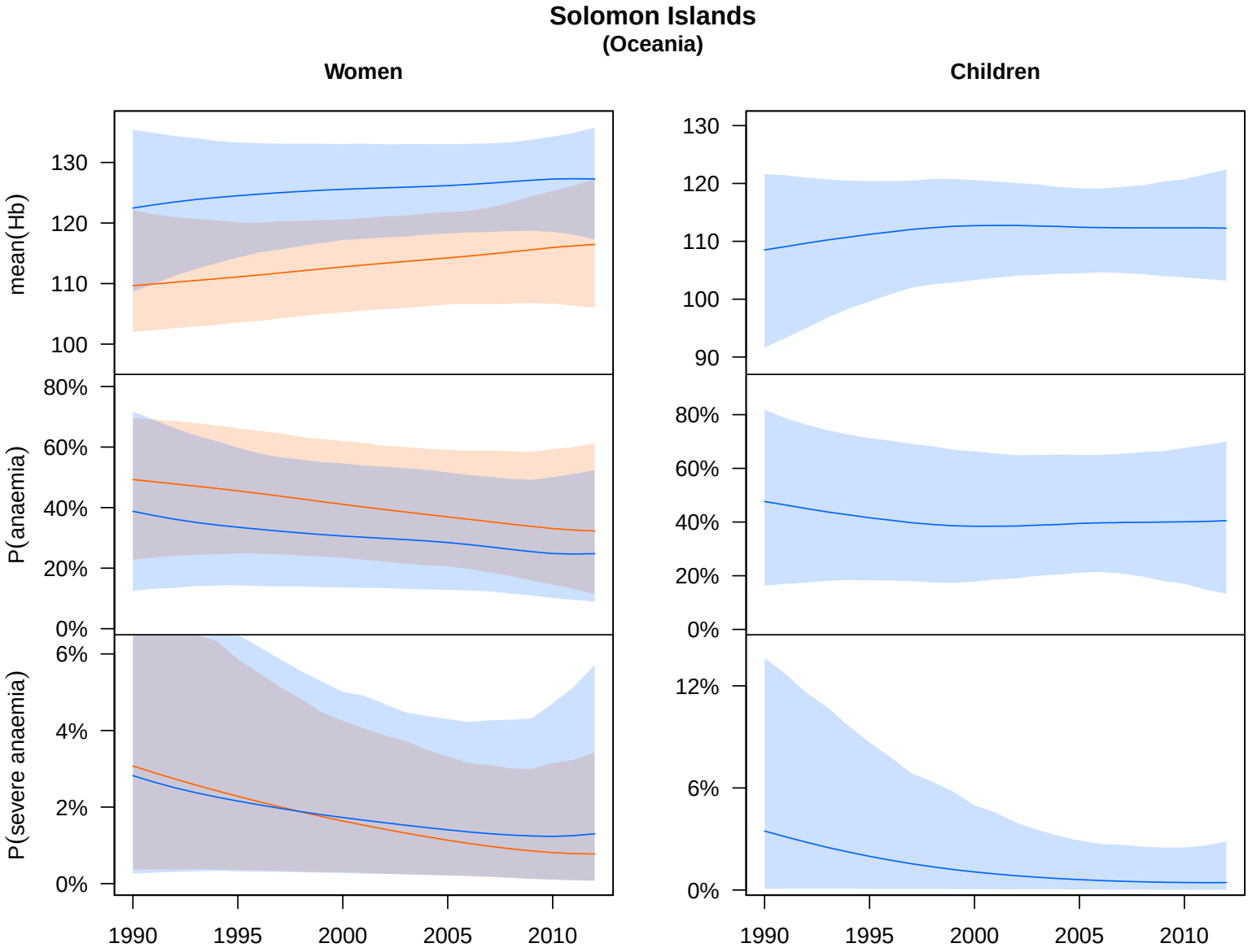

Seychelles
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

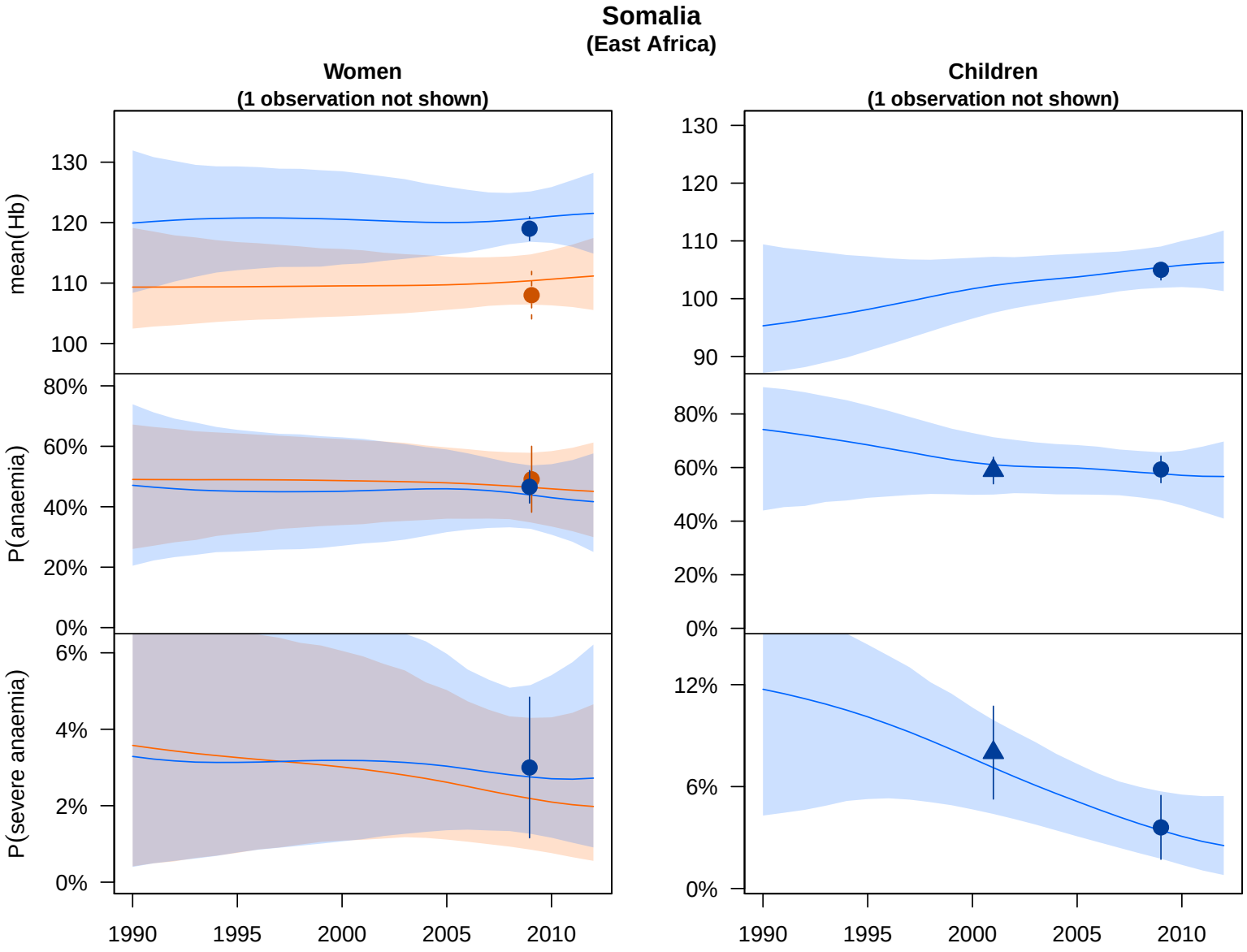

Sierra Leone
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

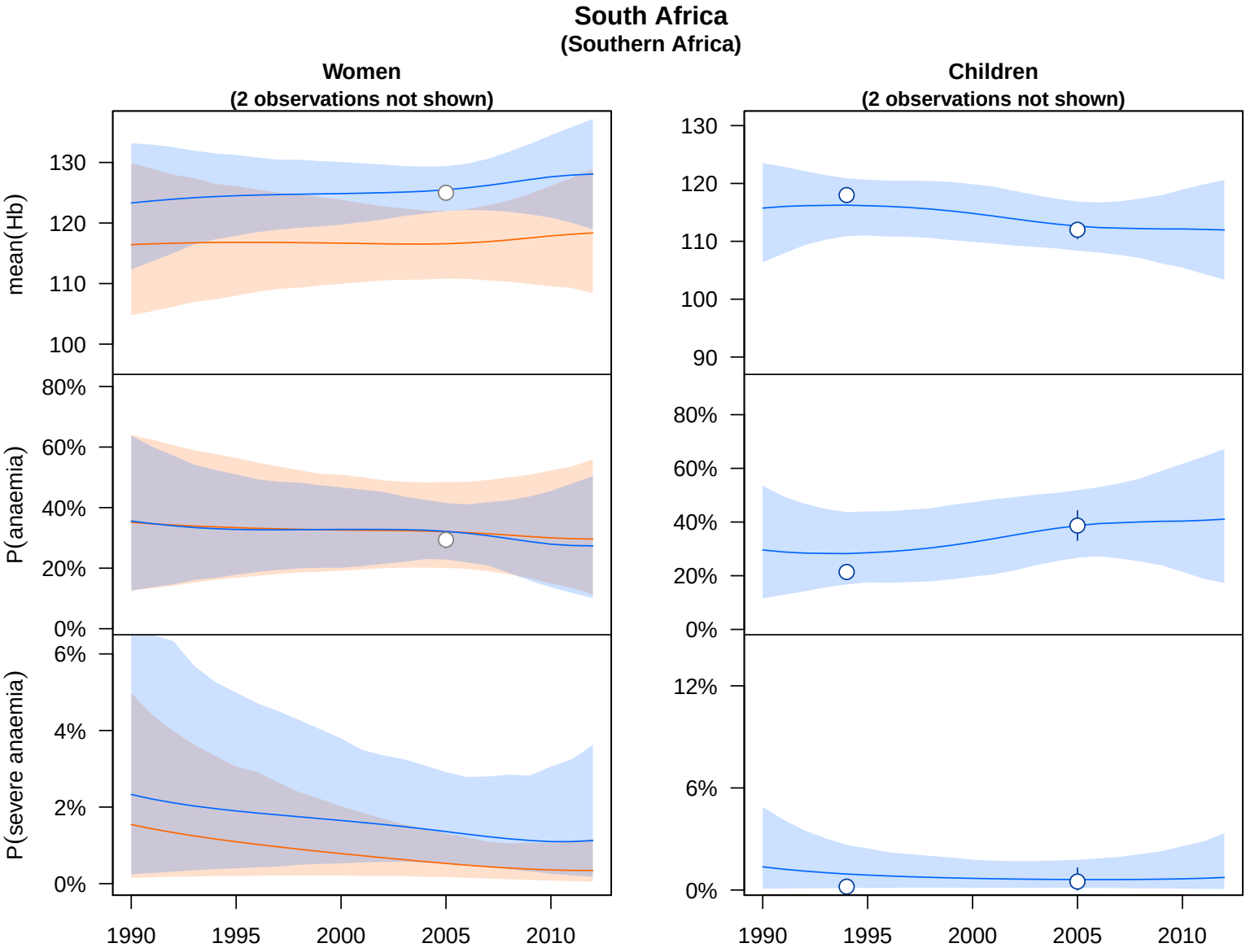

Singapore
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

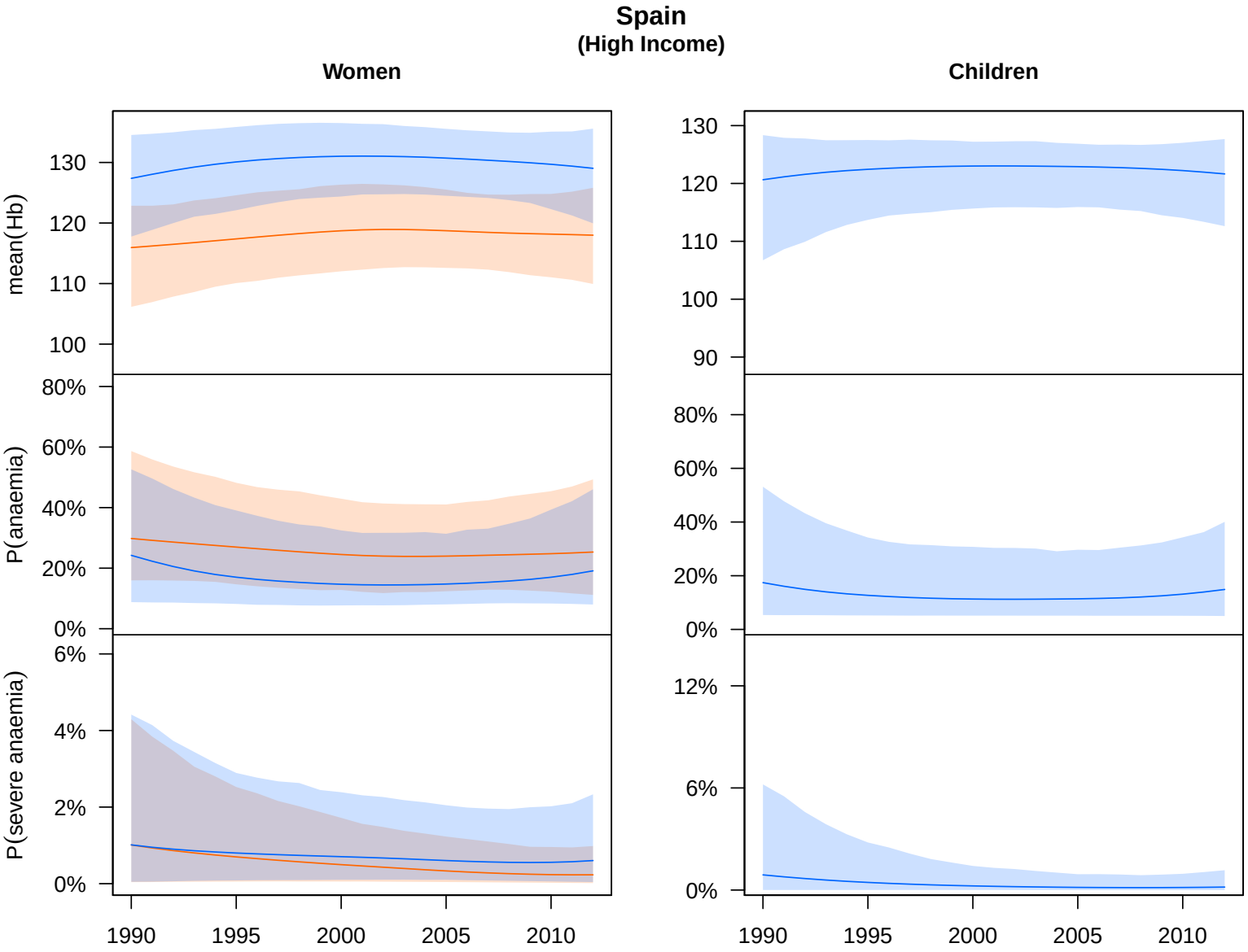

Slovakia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

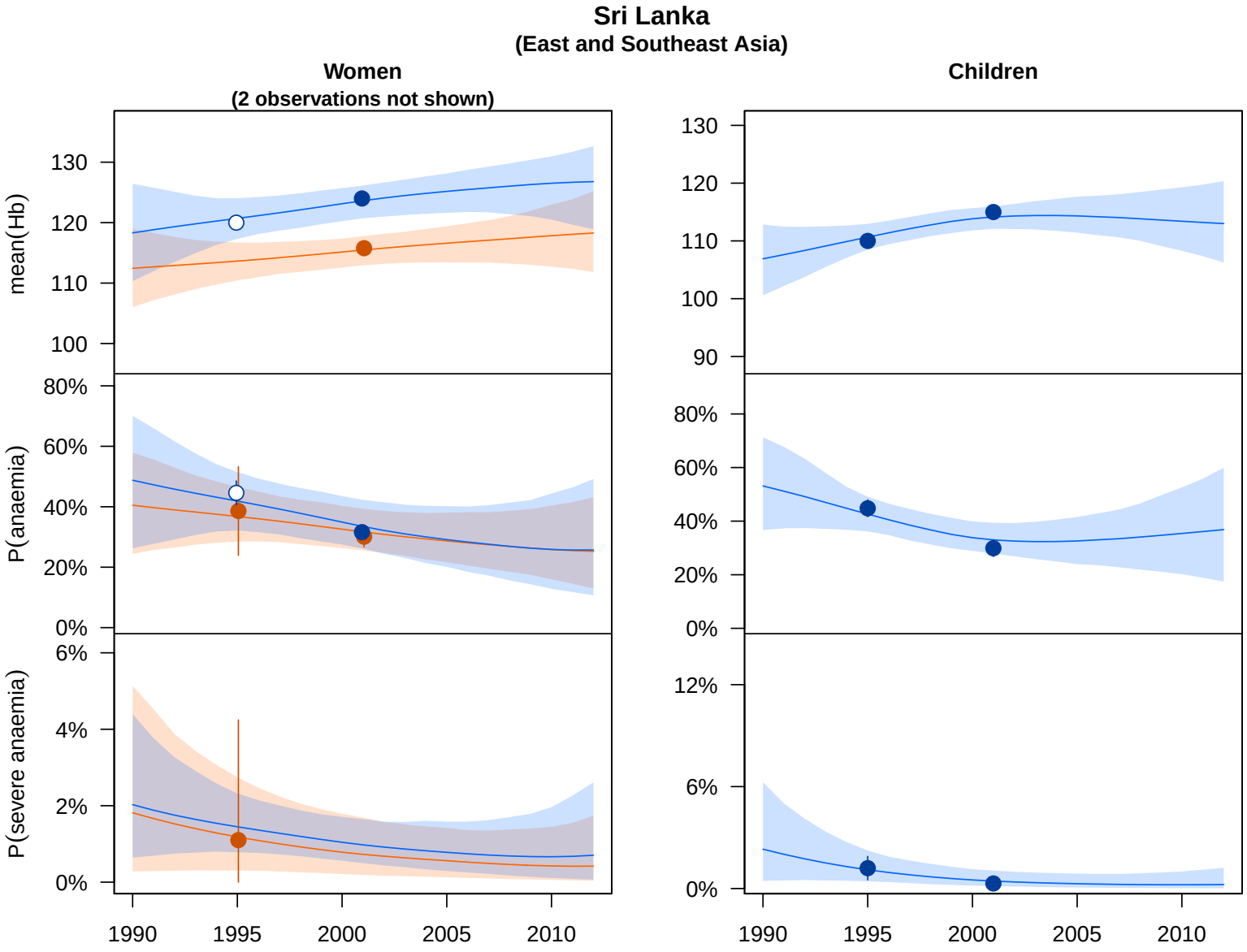

Slovenia
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

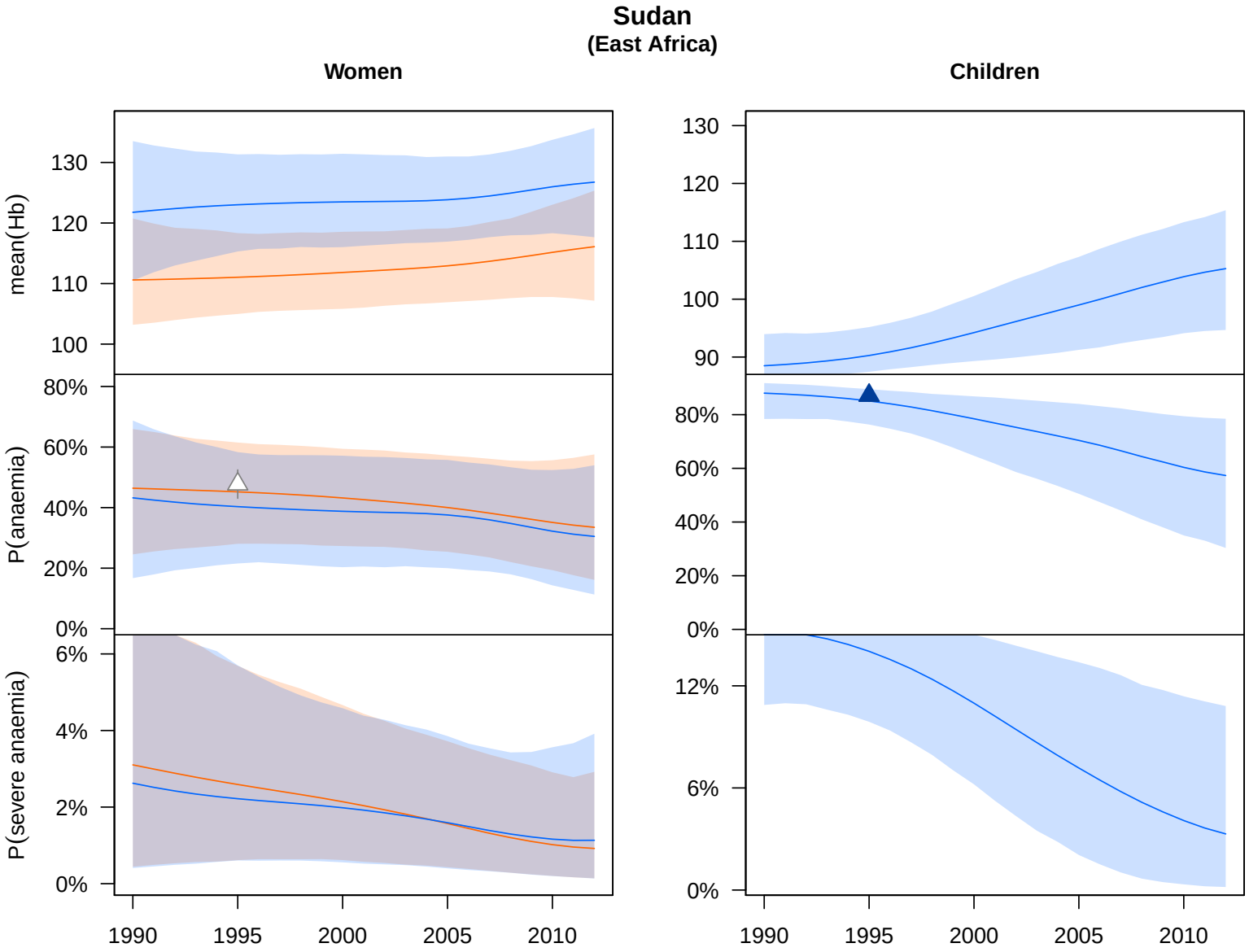

Solomon Islands
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Somalia
(East Africa)
Women
(1 observation not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


South Africa
(Southern Africa)
Women
(2 observations not shown)
Children
(2 observations not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

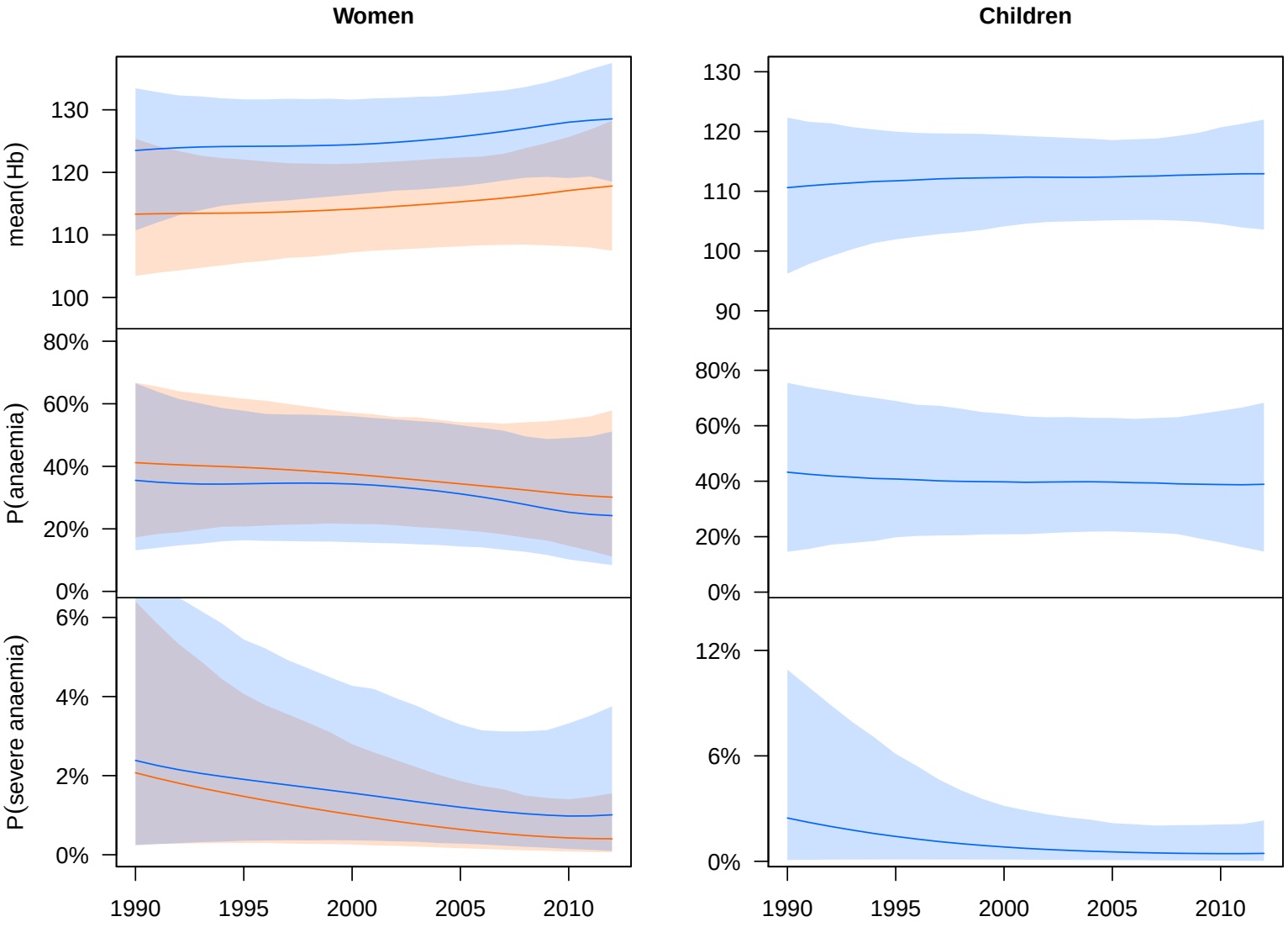

Spain
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

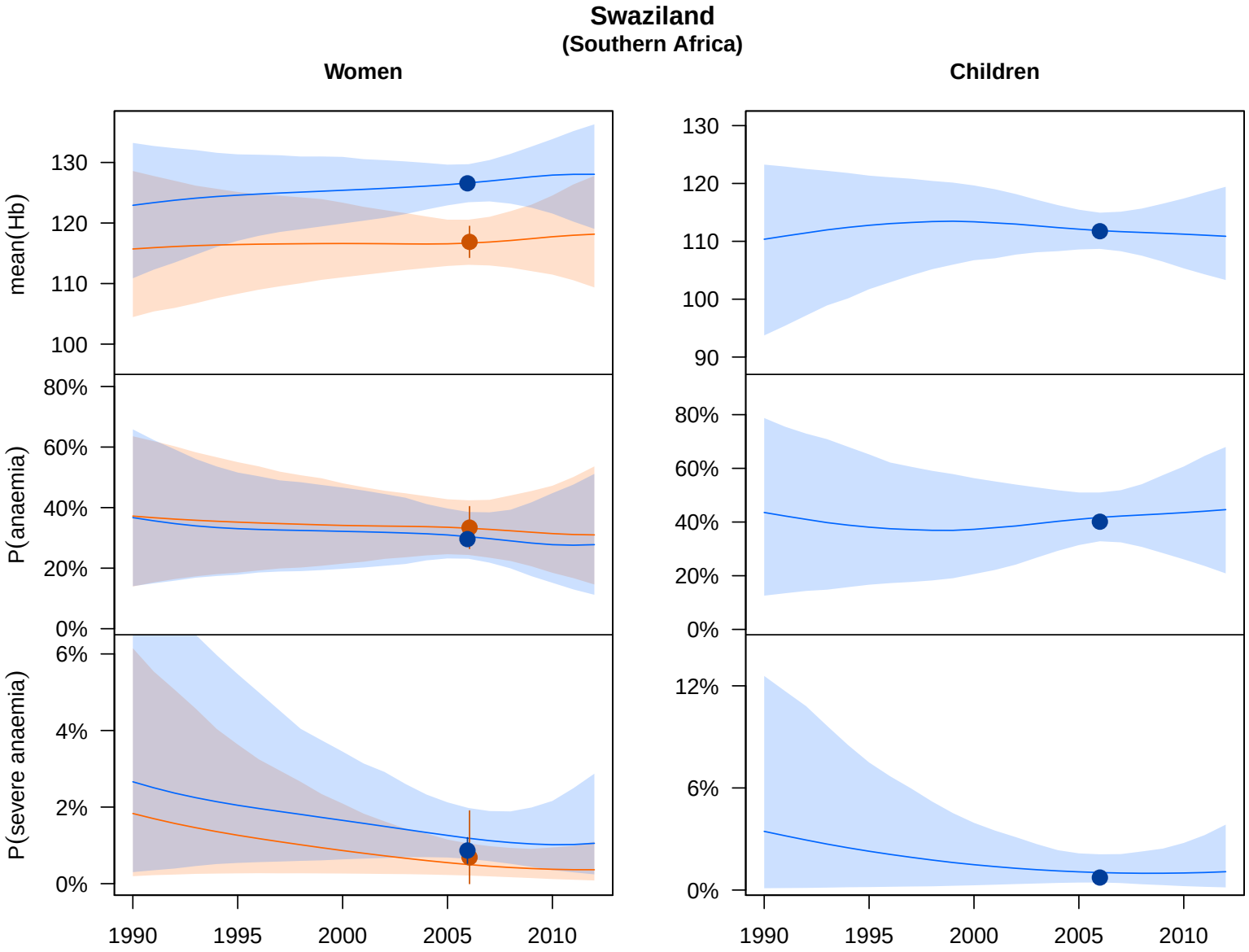

Sri Lanka
(East and Southeast Asia)
Women
(2 observations not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

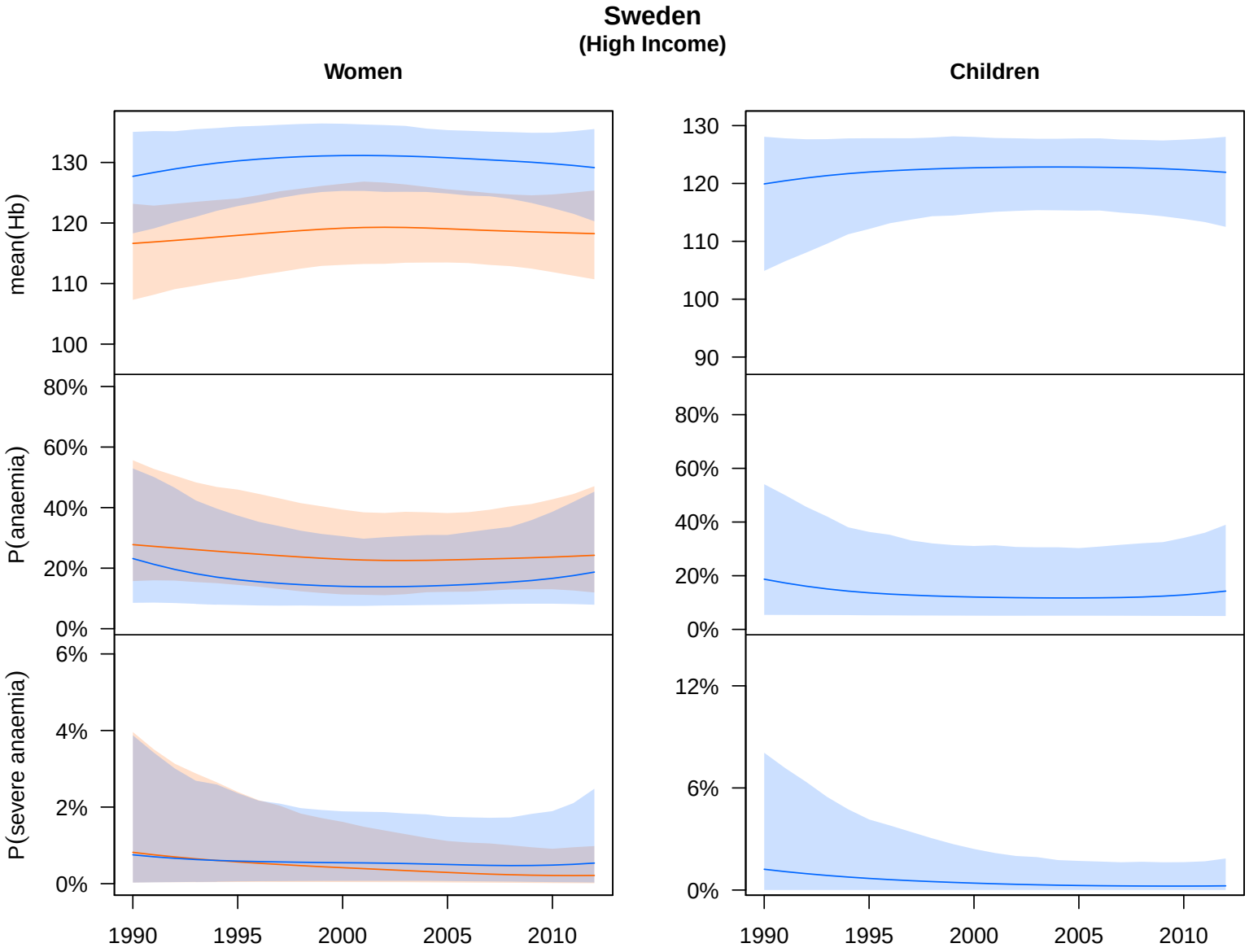

Sudan
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

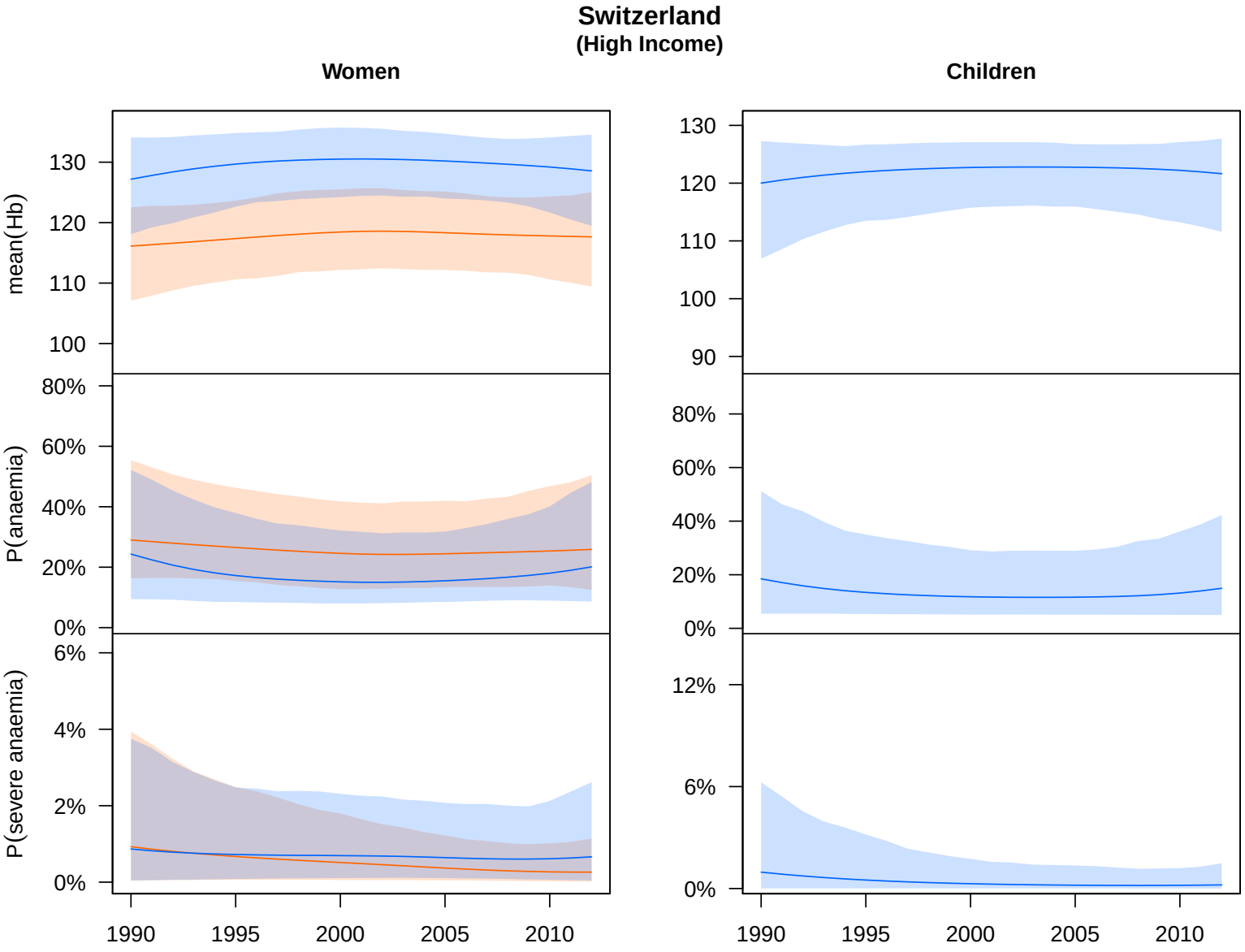
Suriname

(Andean and Central Latin America and Caribbean)



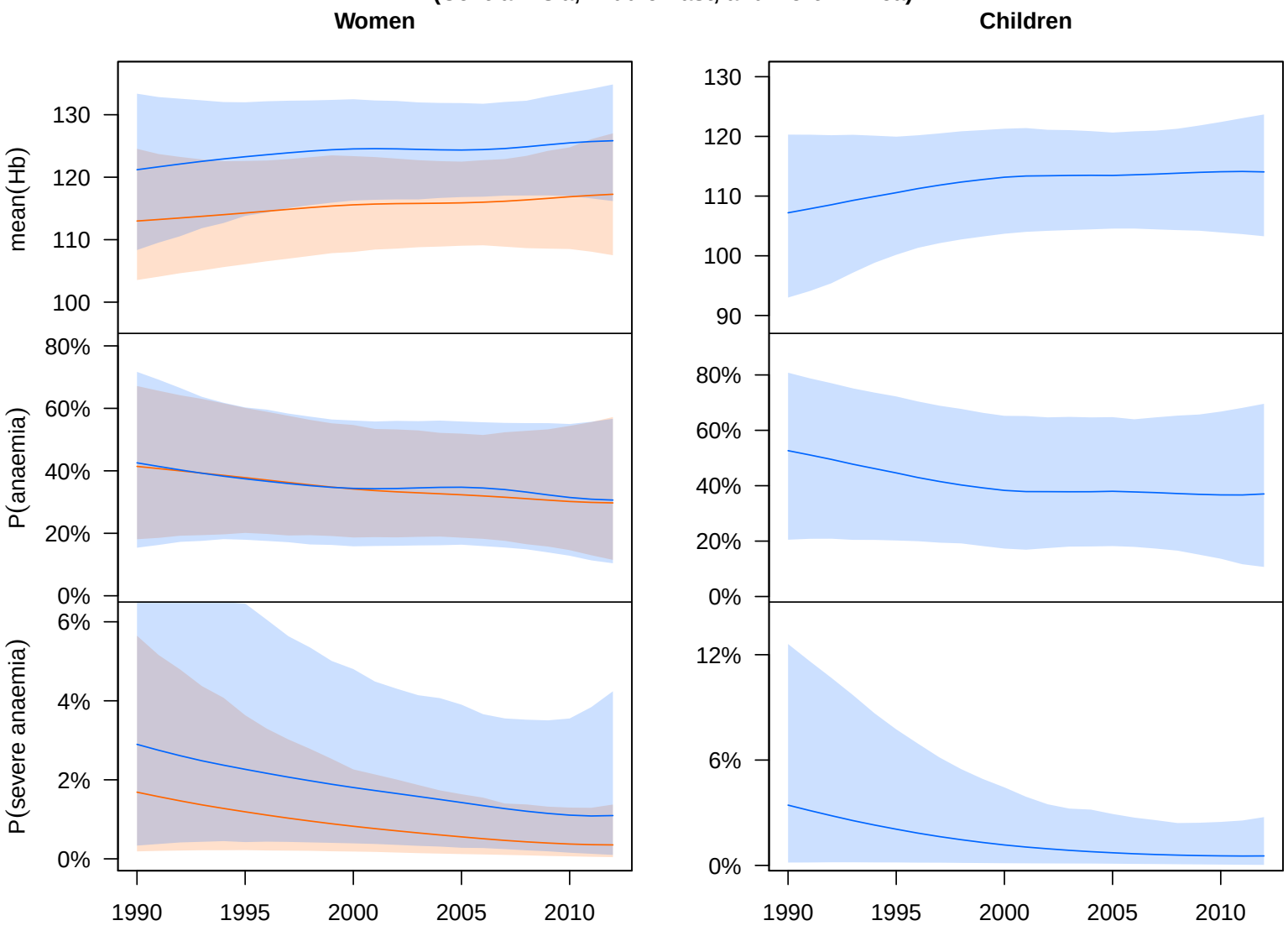

Swaziland
(Southern Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

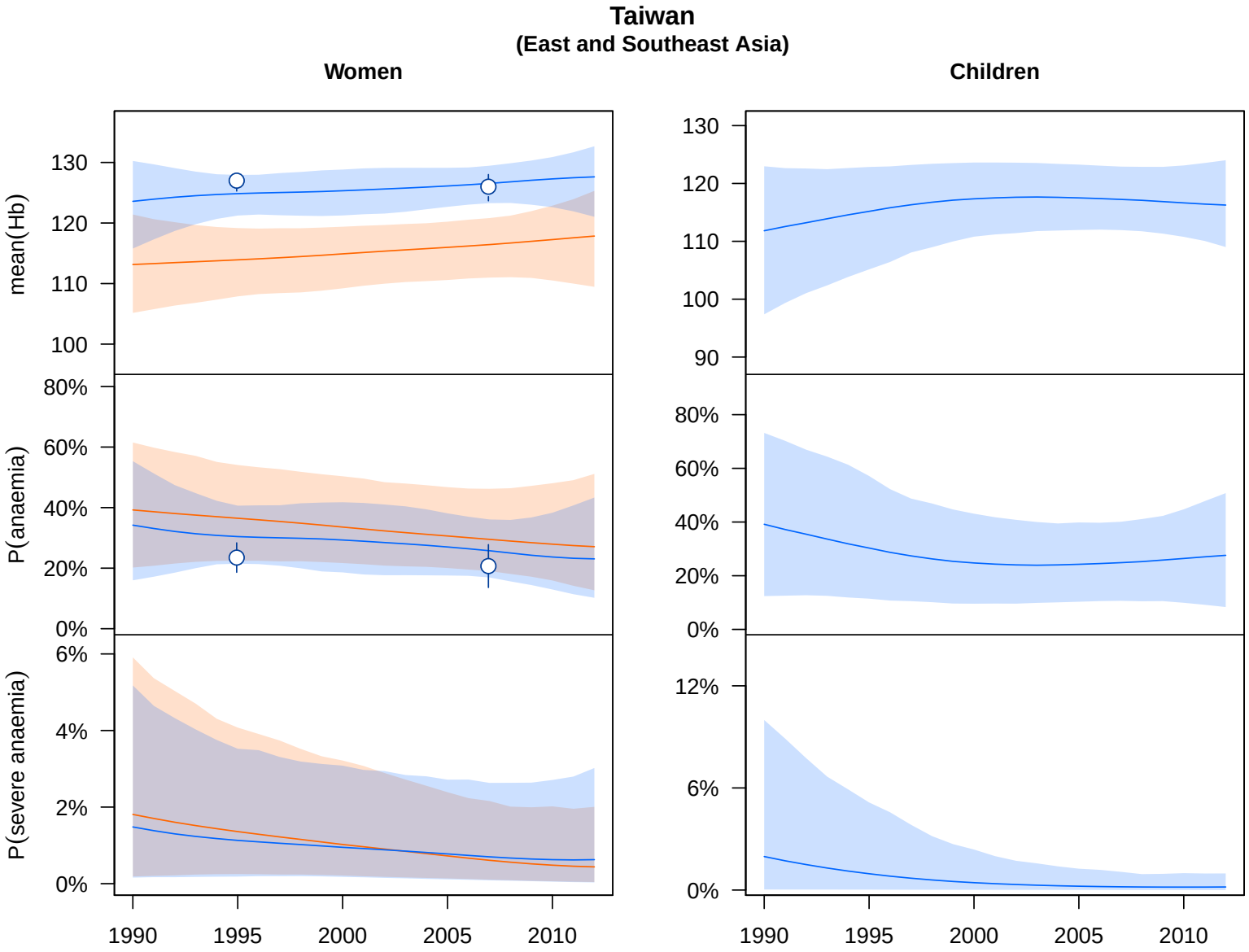

Sweden
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

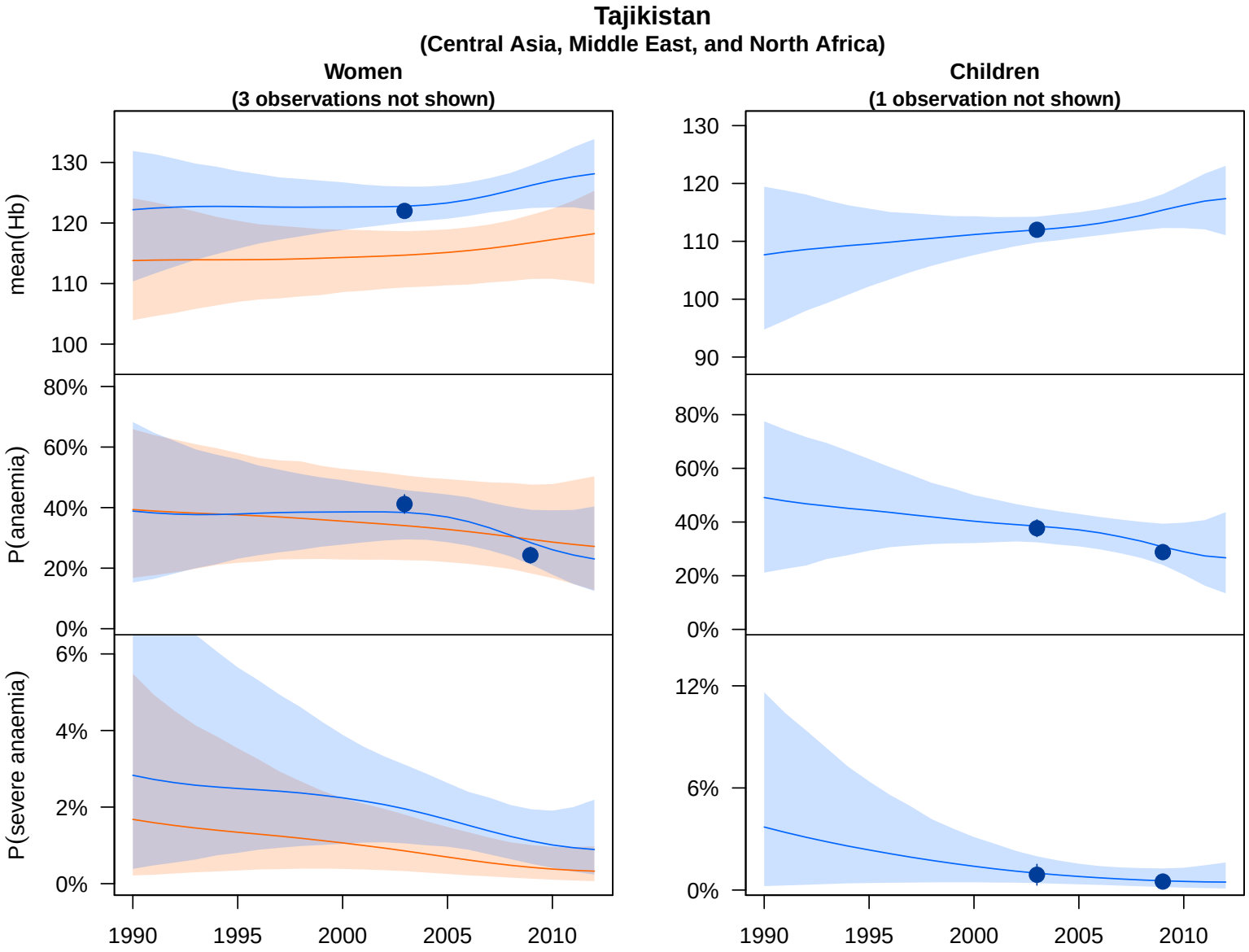

Switzerland
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

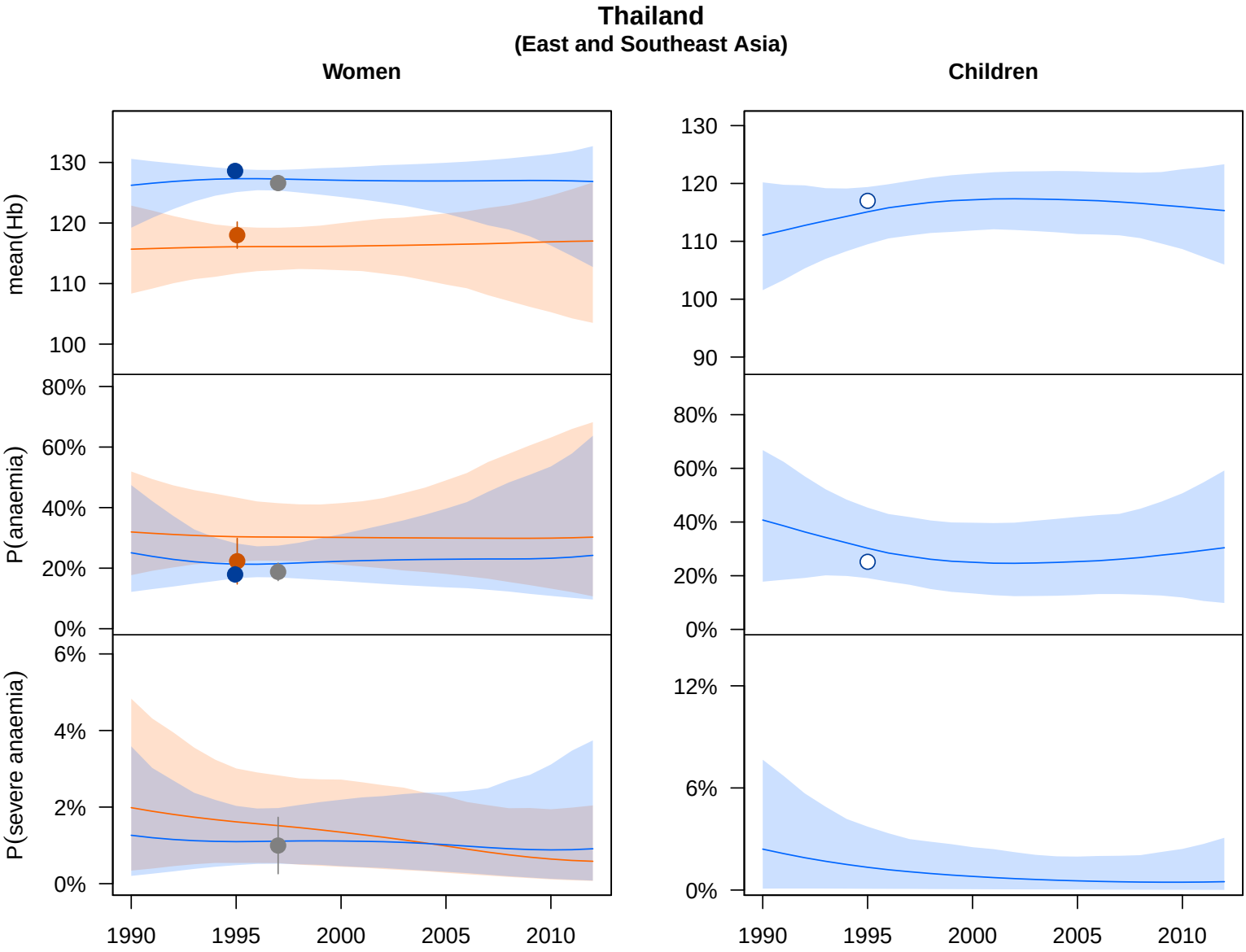
Syrian Arab Republic

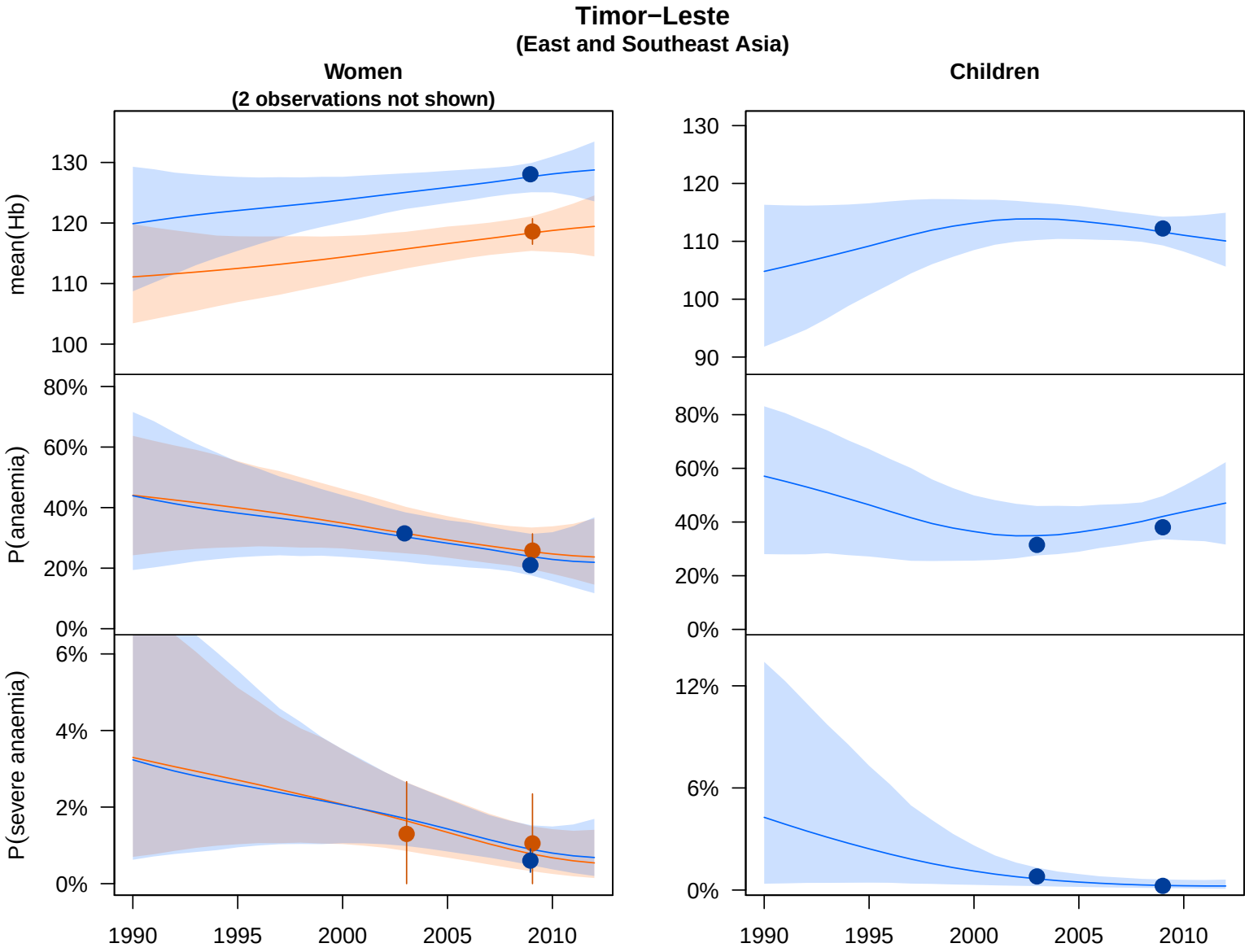
(Central Asia, Middle East, and North Africa)

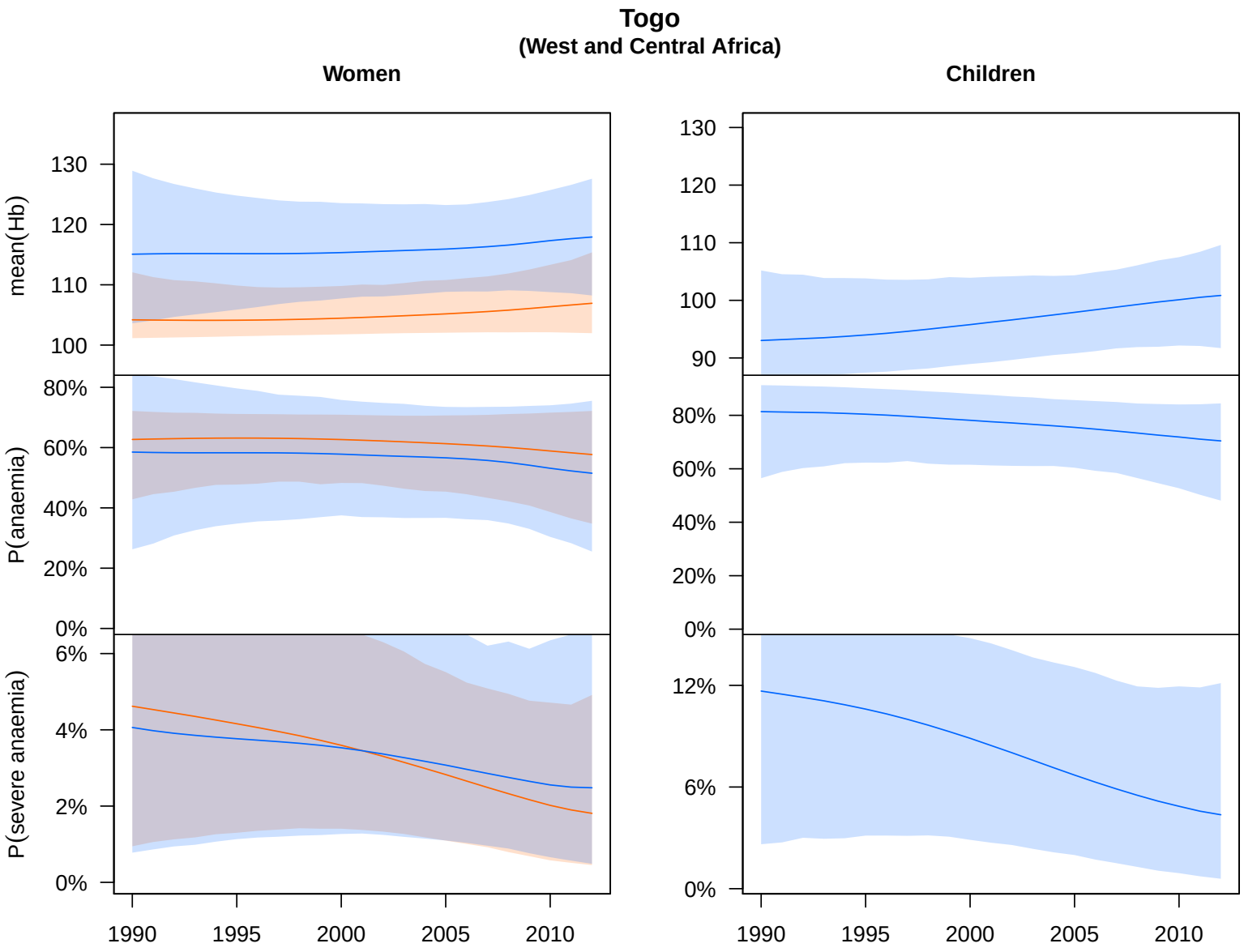


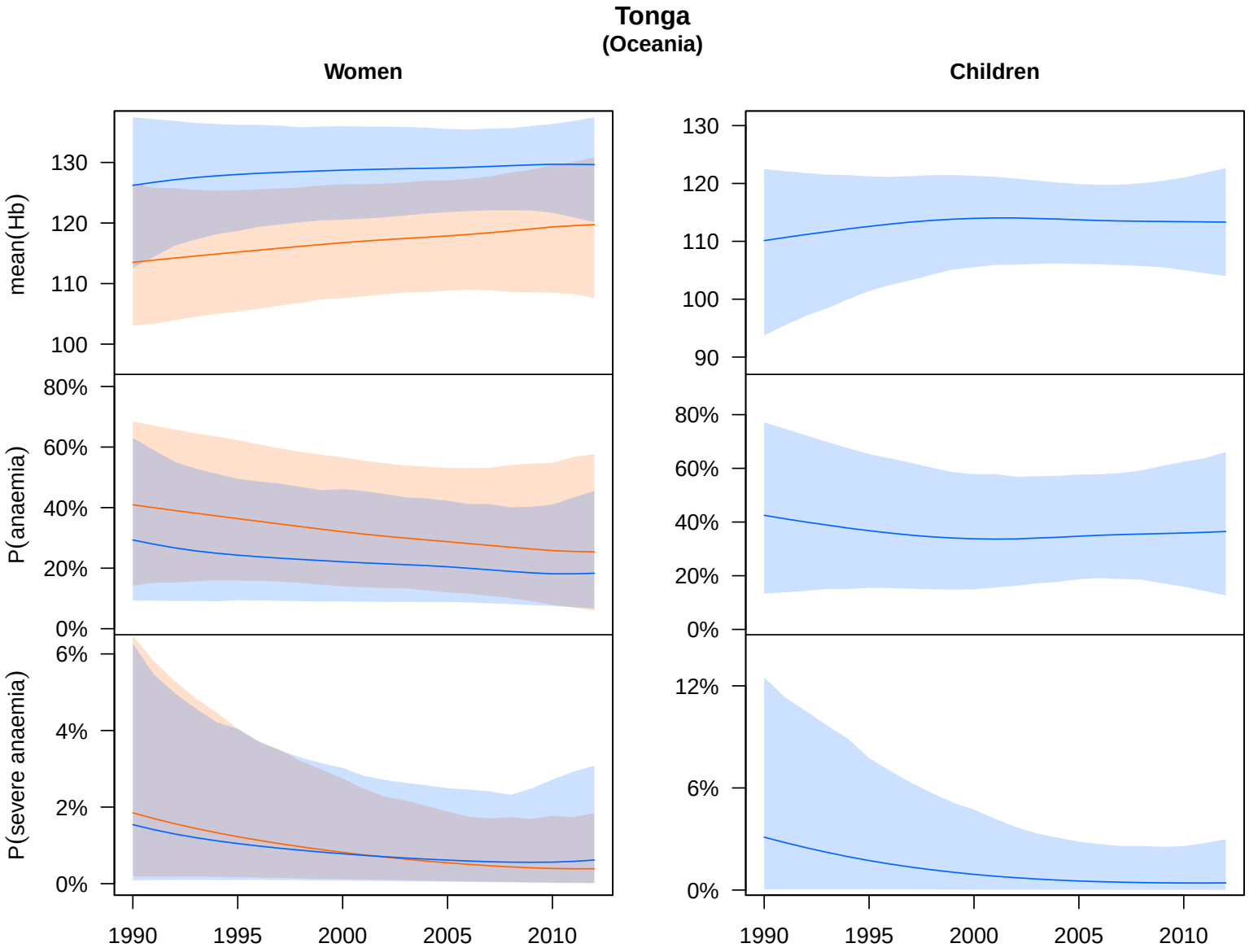

Taiwan
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Tajikistan
(Central Asia, Middle East, and North Africa)
Women
(3 observations not shown)
Children
(1 observation not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Thailand
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

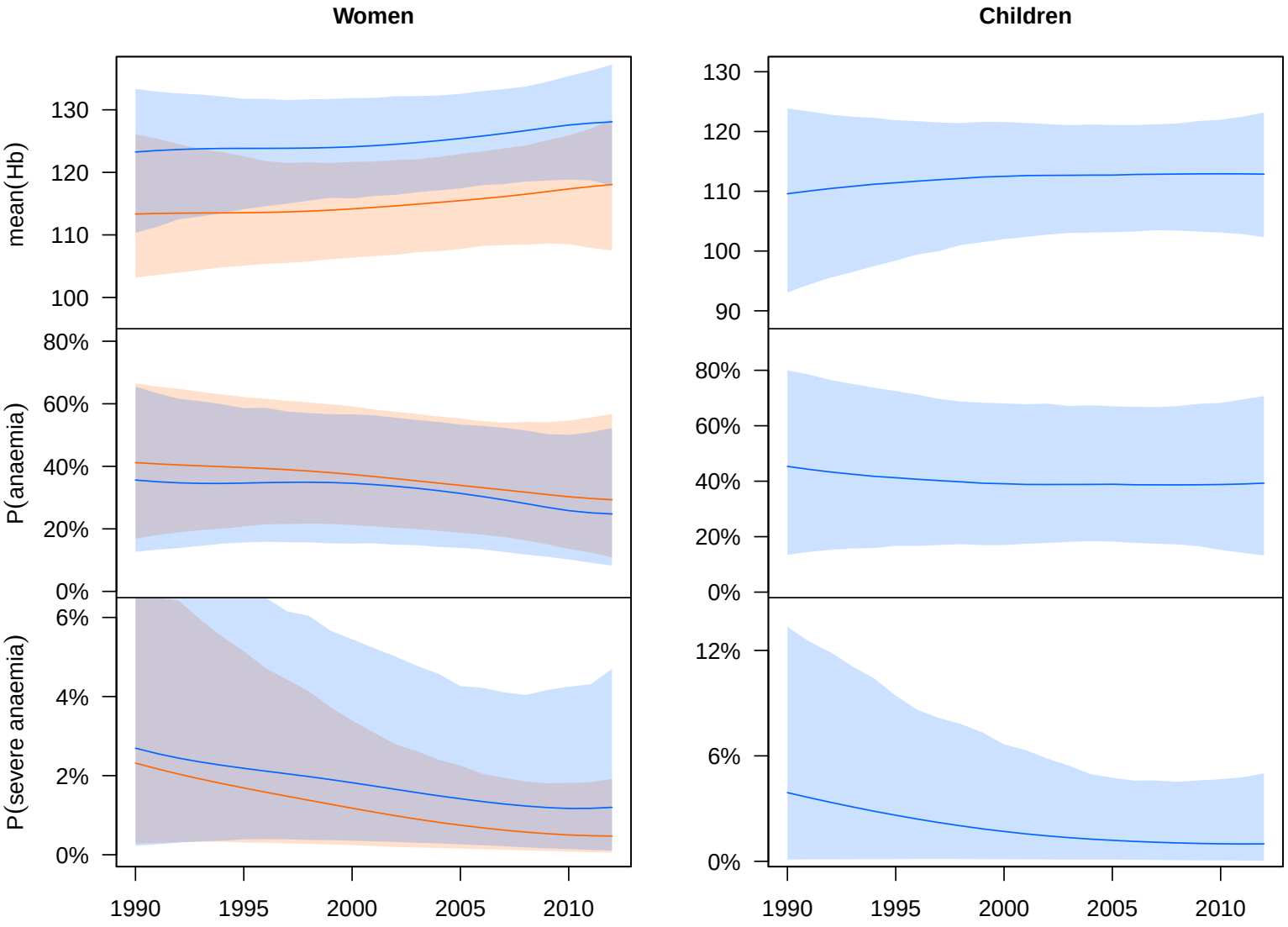

Timor−Leste
(East and Southeast Asia)
Women
(2 observations not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Togo
(West and Central Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Tonga
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

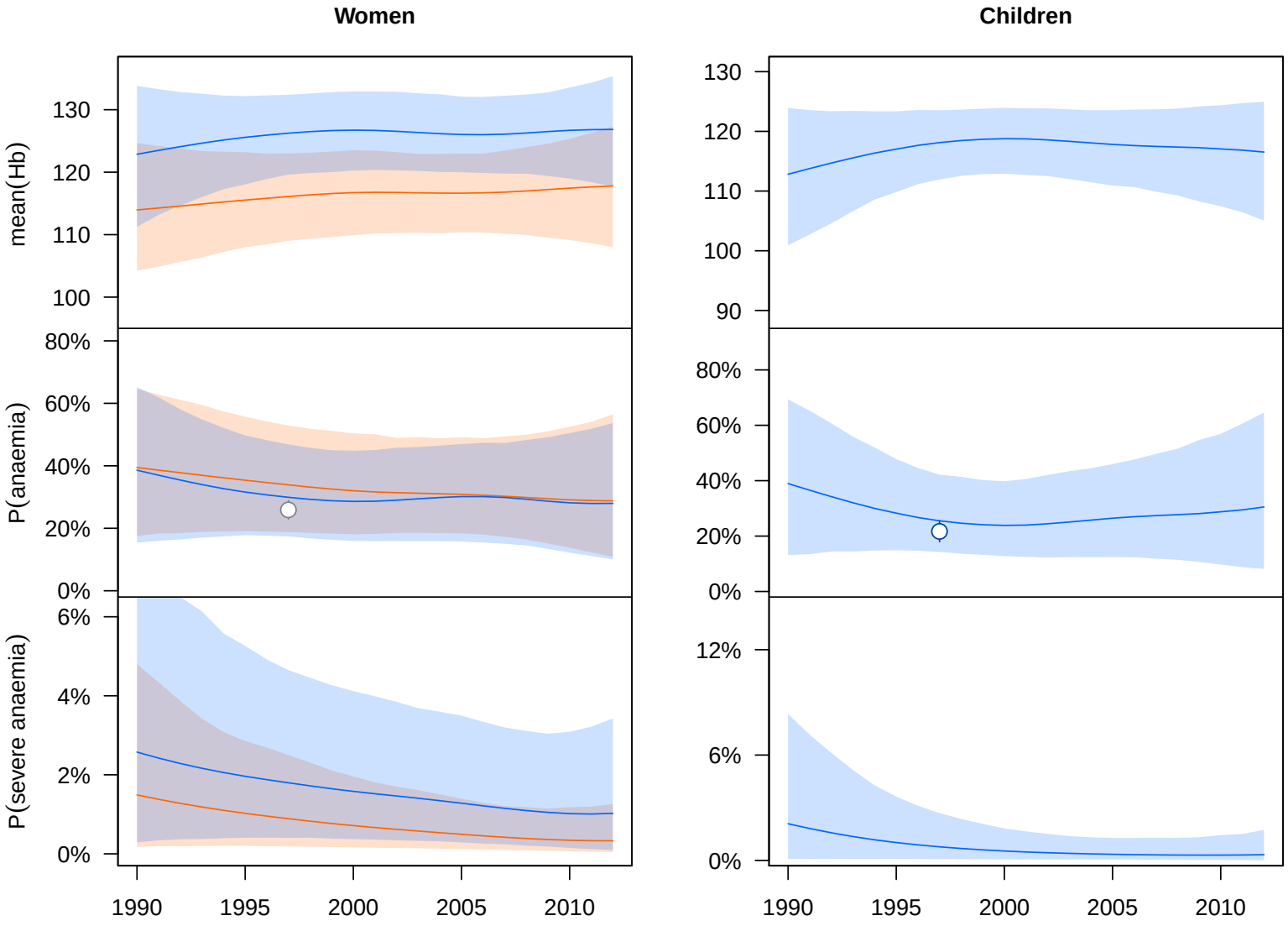
Trinidad and Tobago

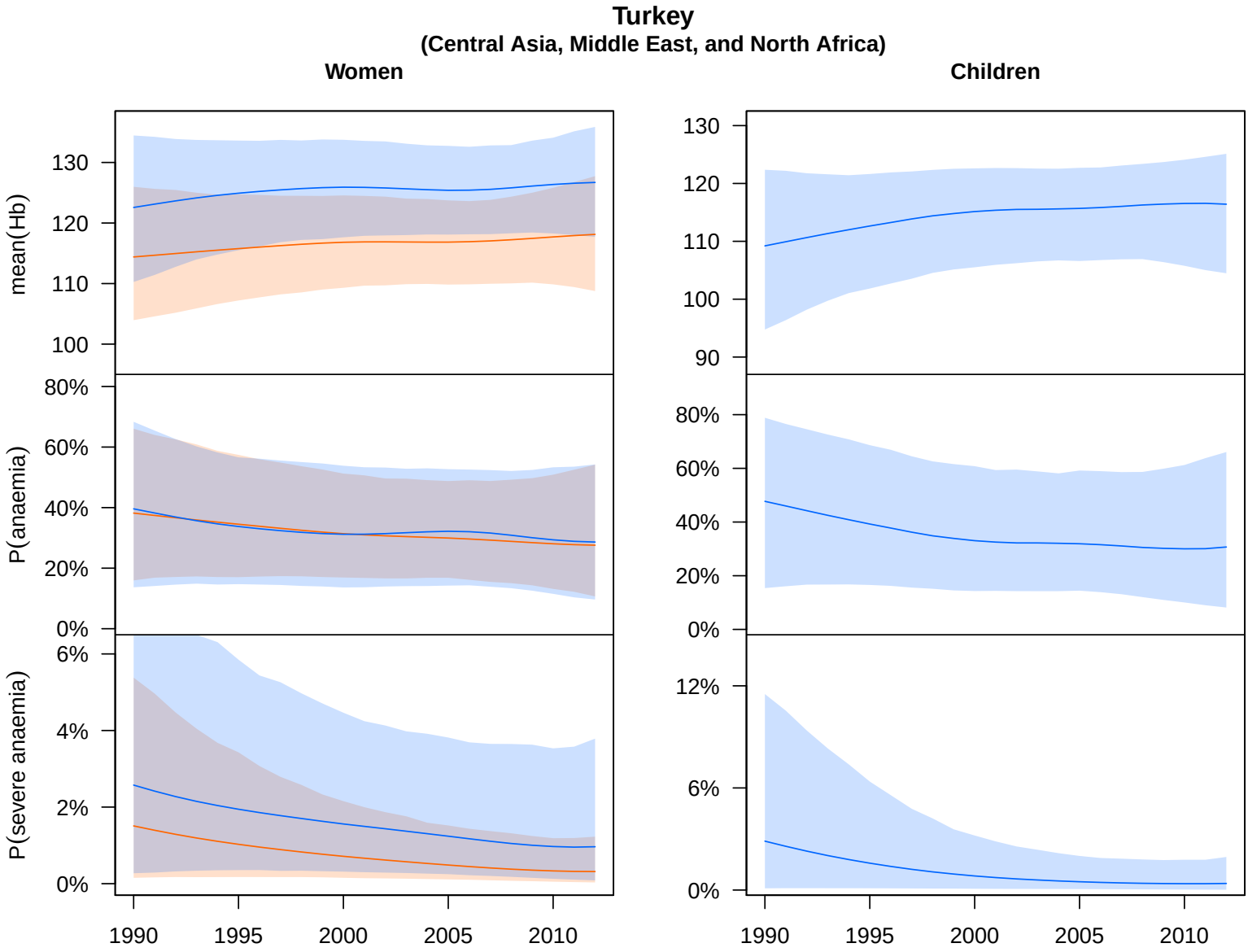
(Andean and Central Latin America and Caribbean)

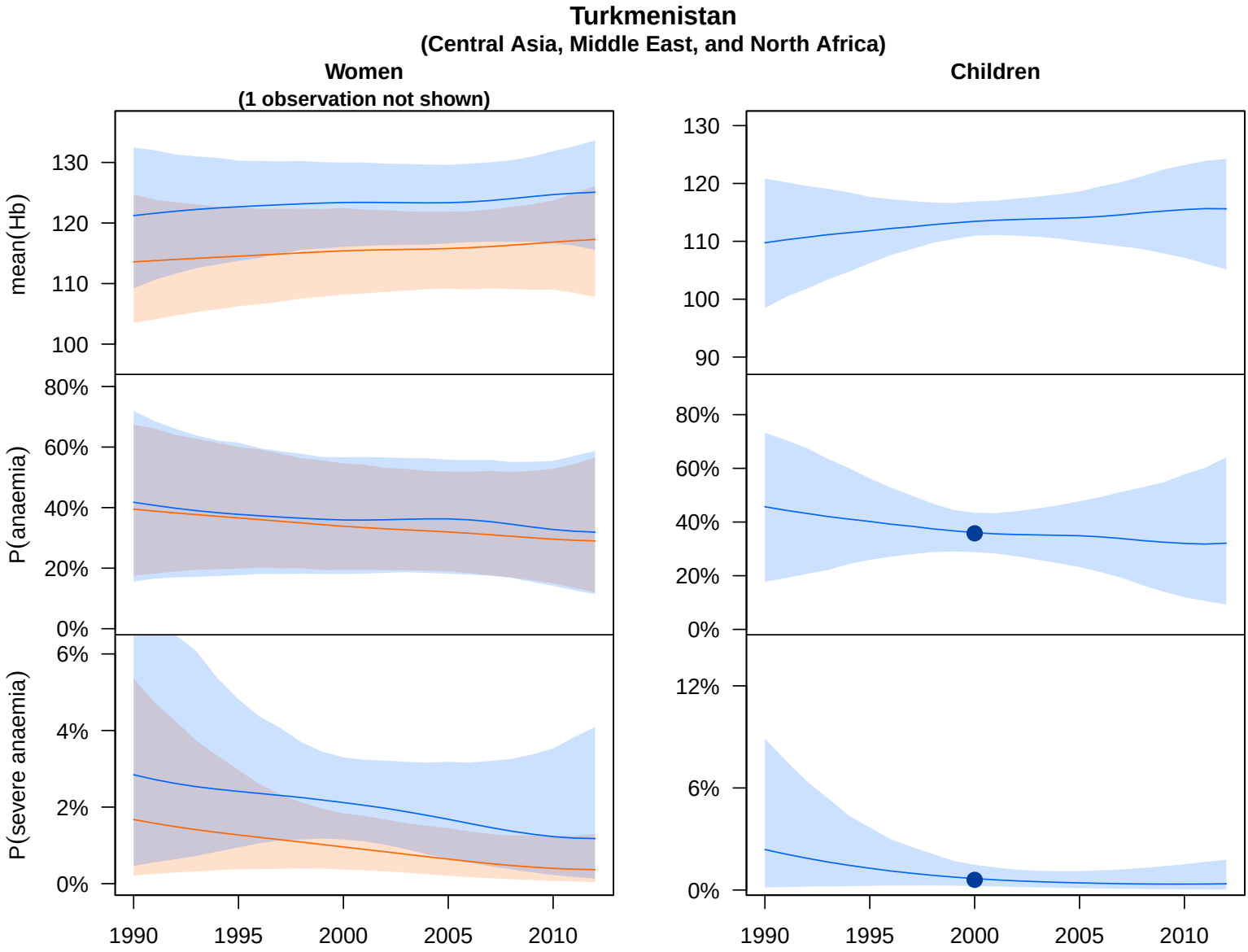


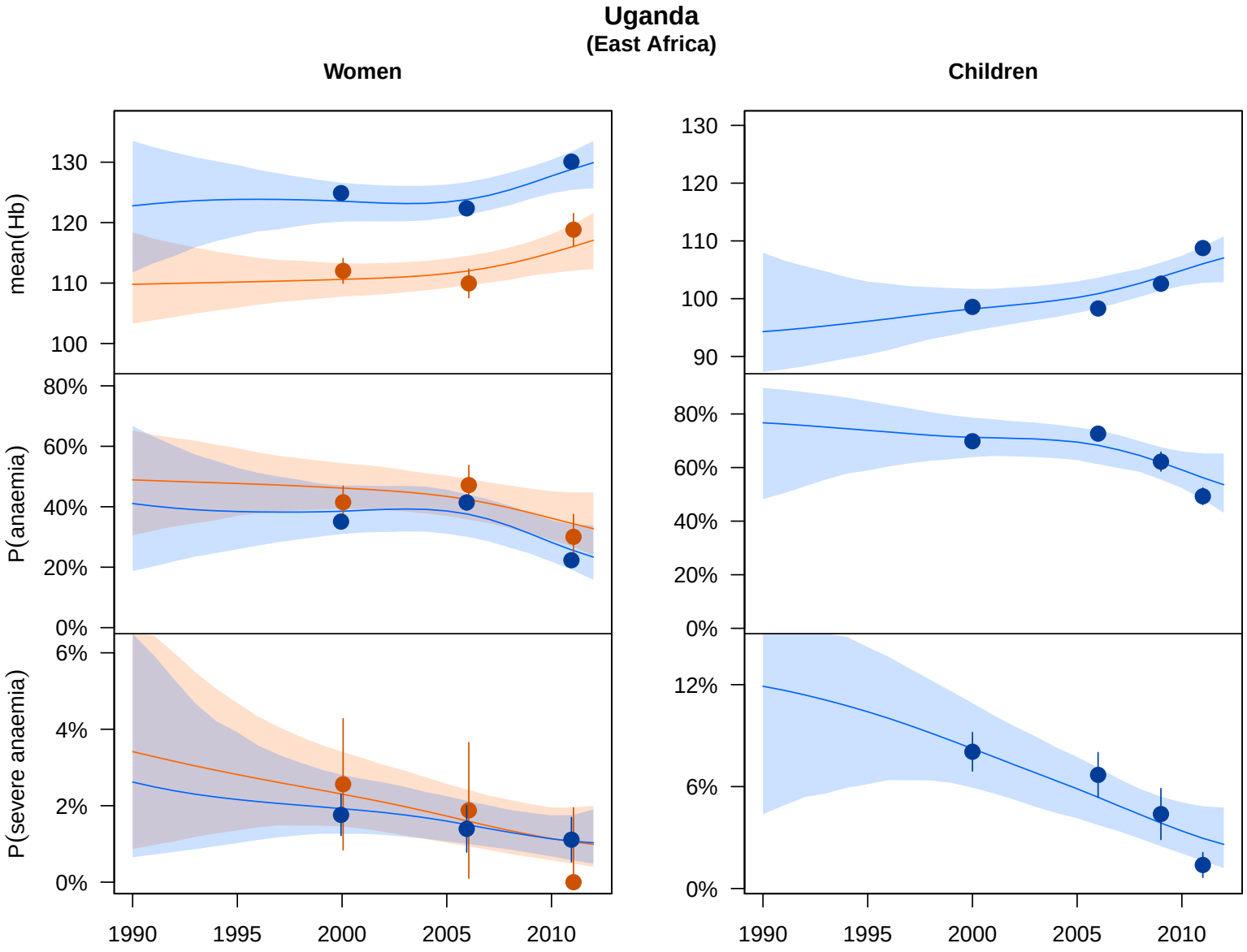
Tunisia

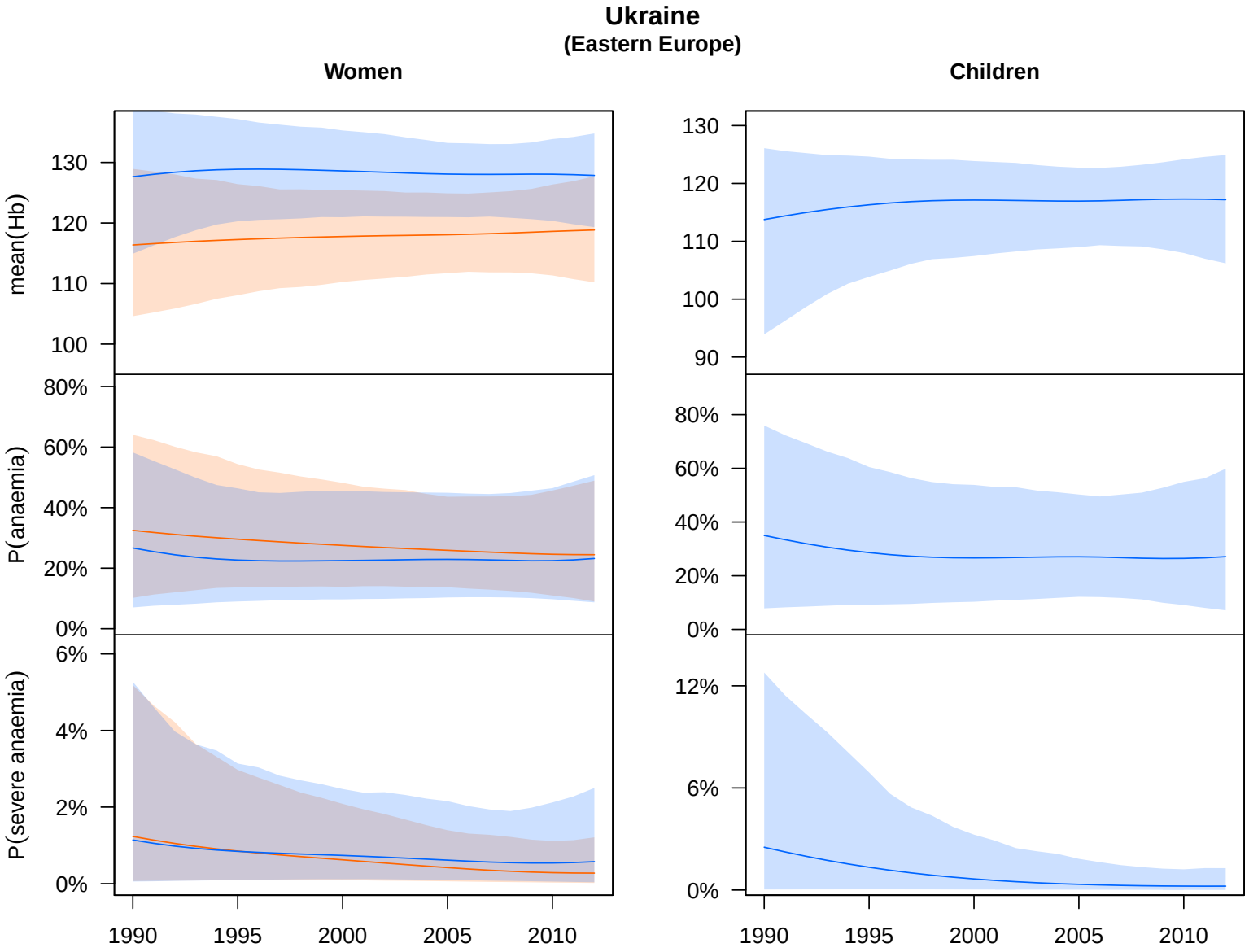
(Central Asia, Middle East, and North Africa)



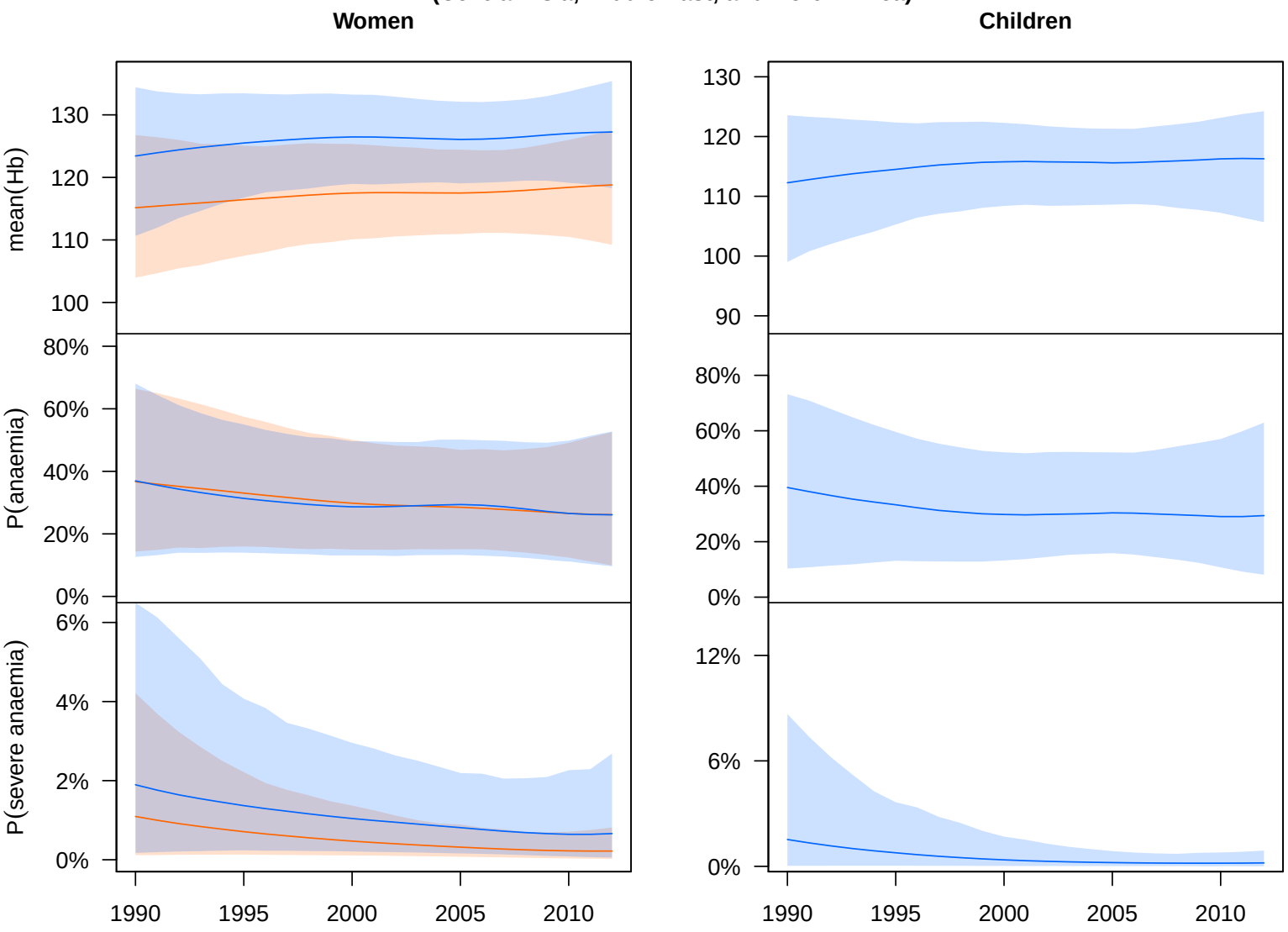

Turkey
(Central Asia, Middle East, and North Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

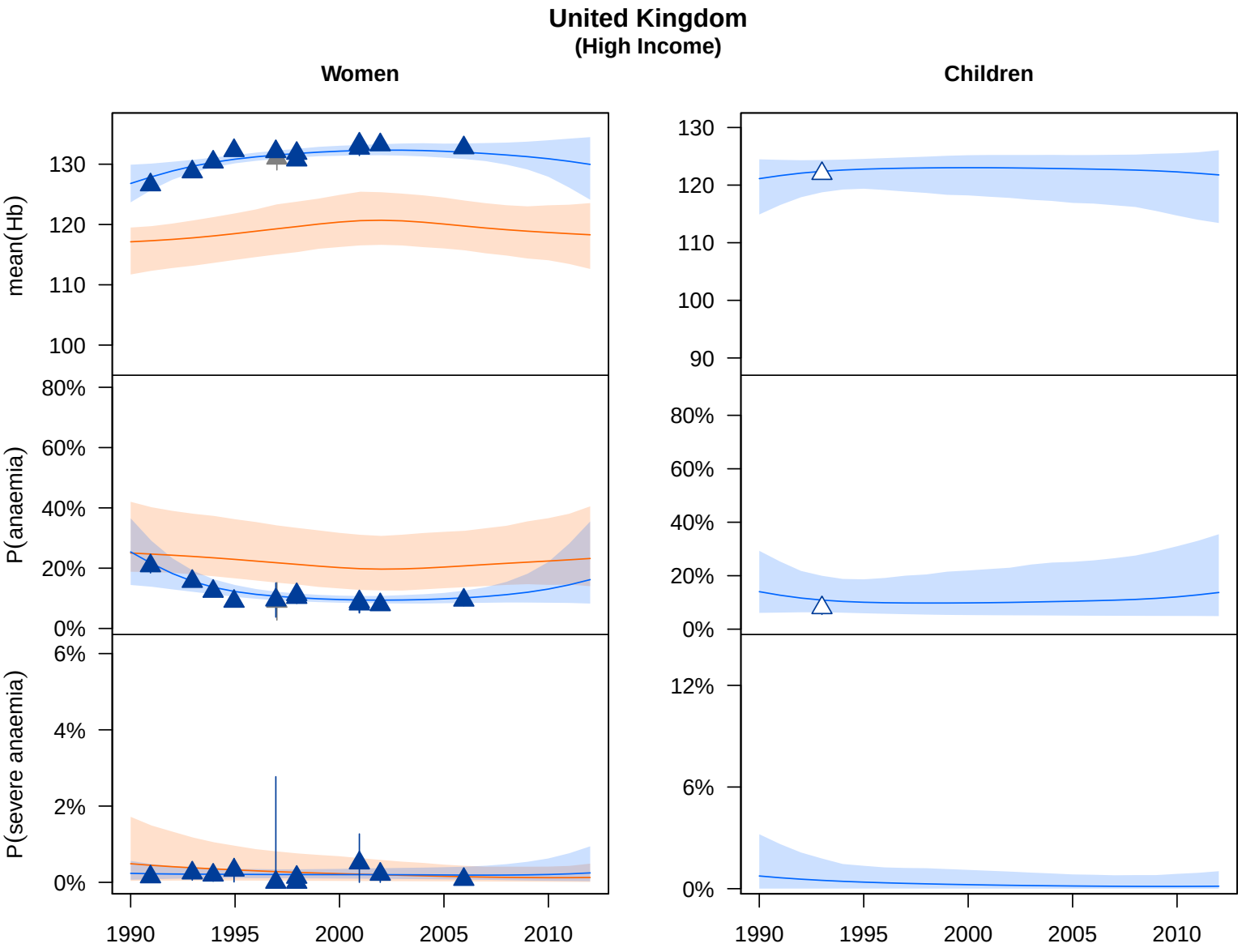

Turkmenistan
(Central Asia, Middle East, and North Africa)
Women
(1 observation not shown)
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

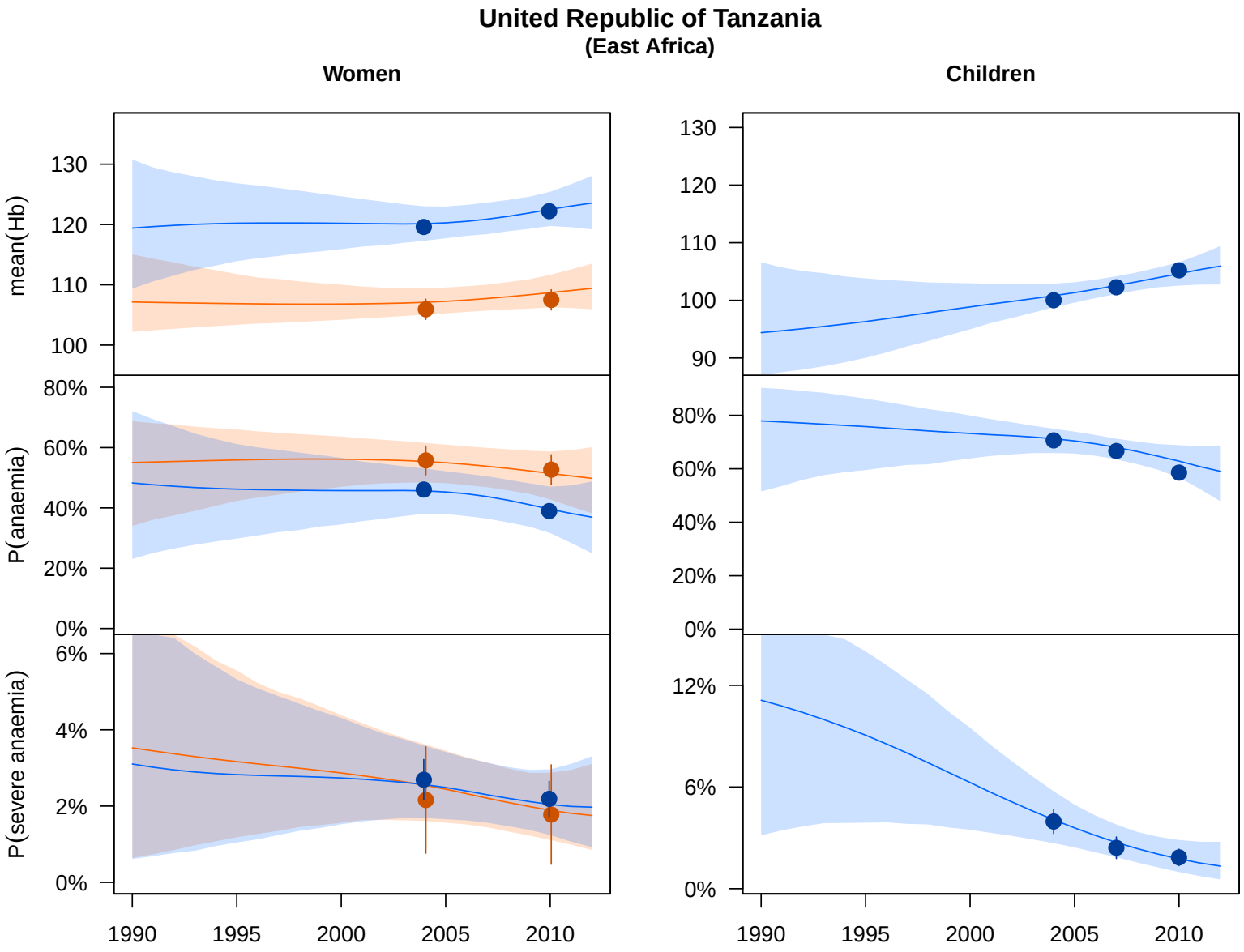

Uganda
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

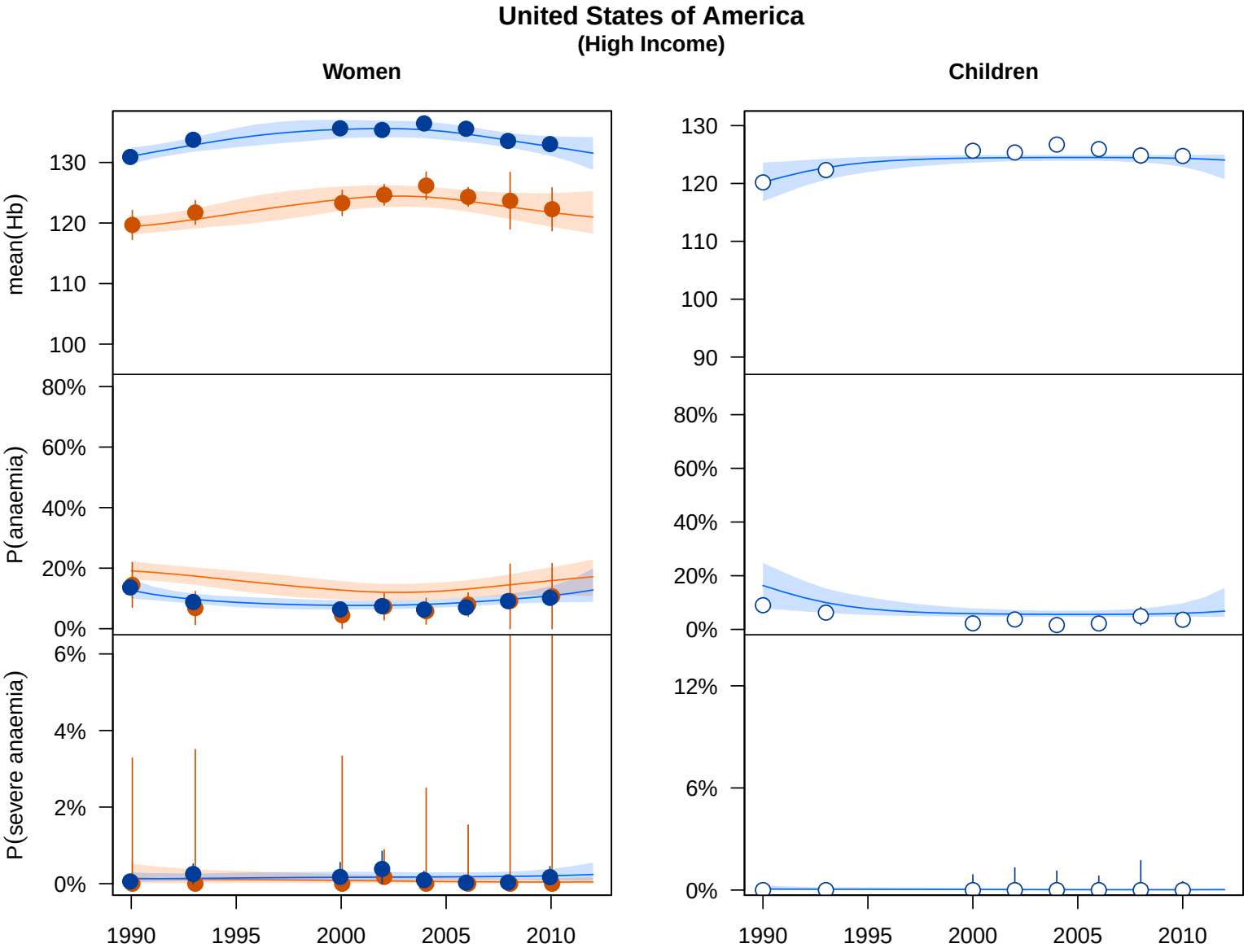

Ukraine
(Eastern Europe)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

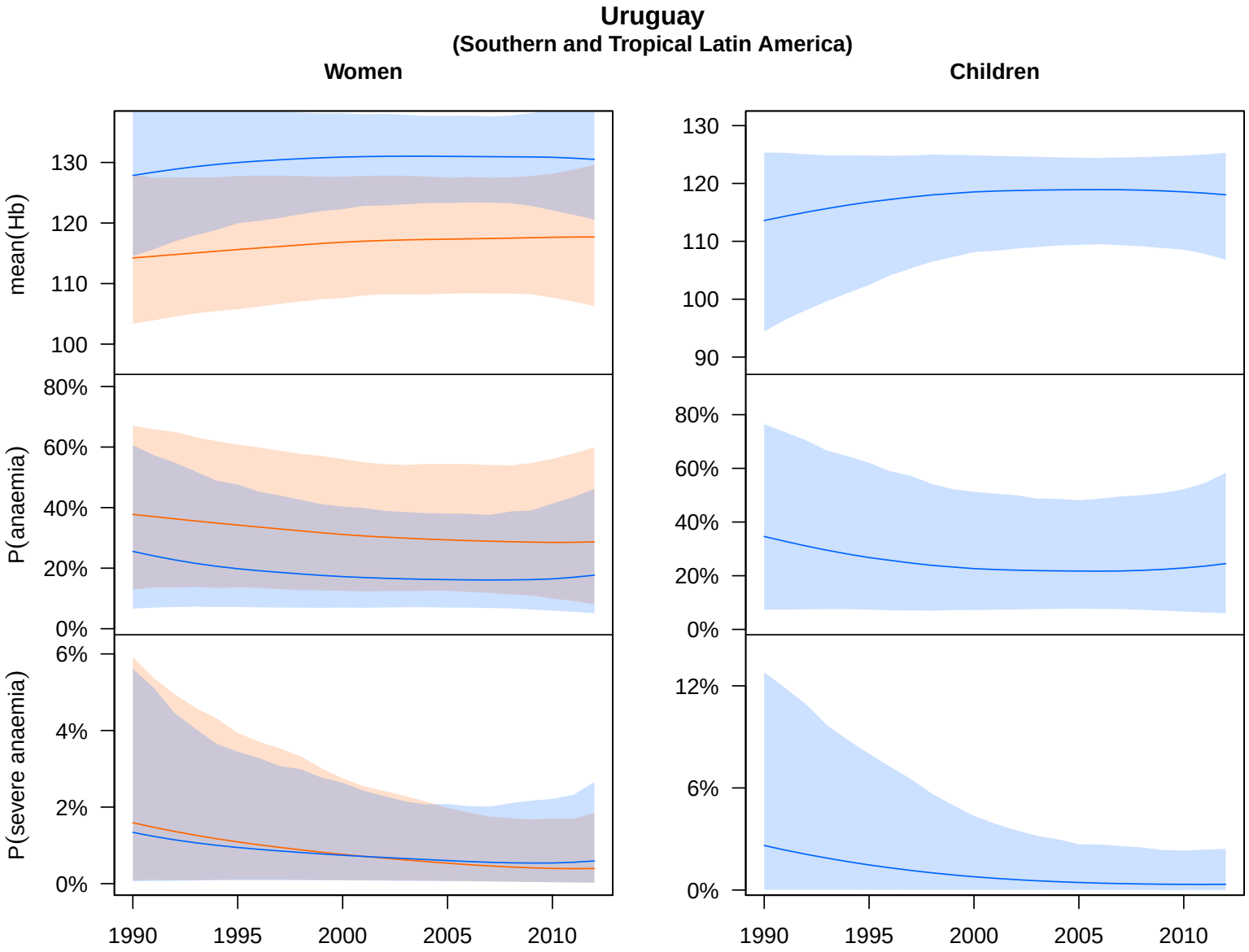
United Arab Emirates
(Central Asia, Middle East, and North Africa)



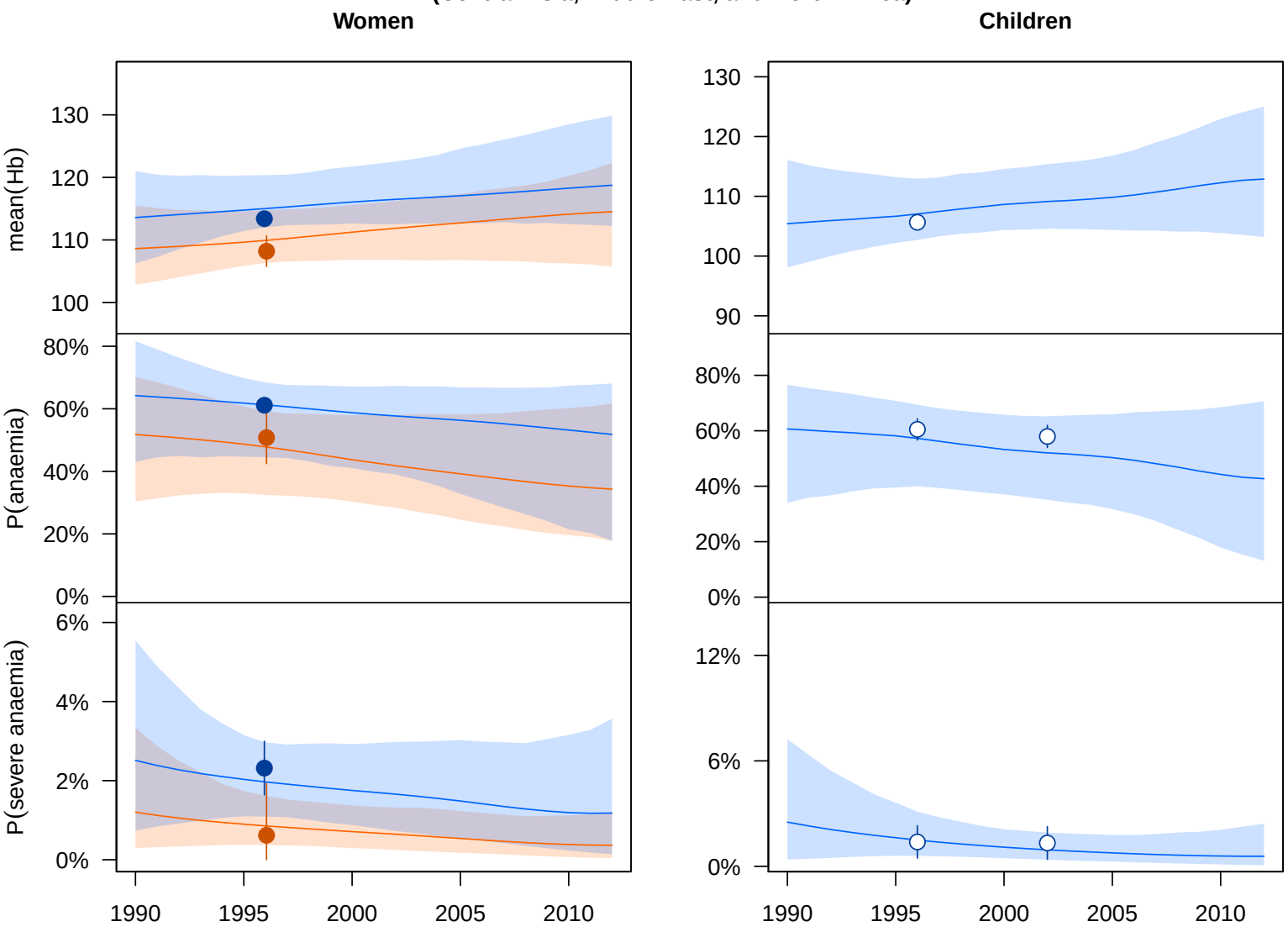

United Kingdom
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

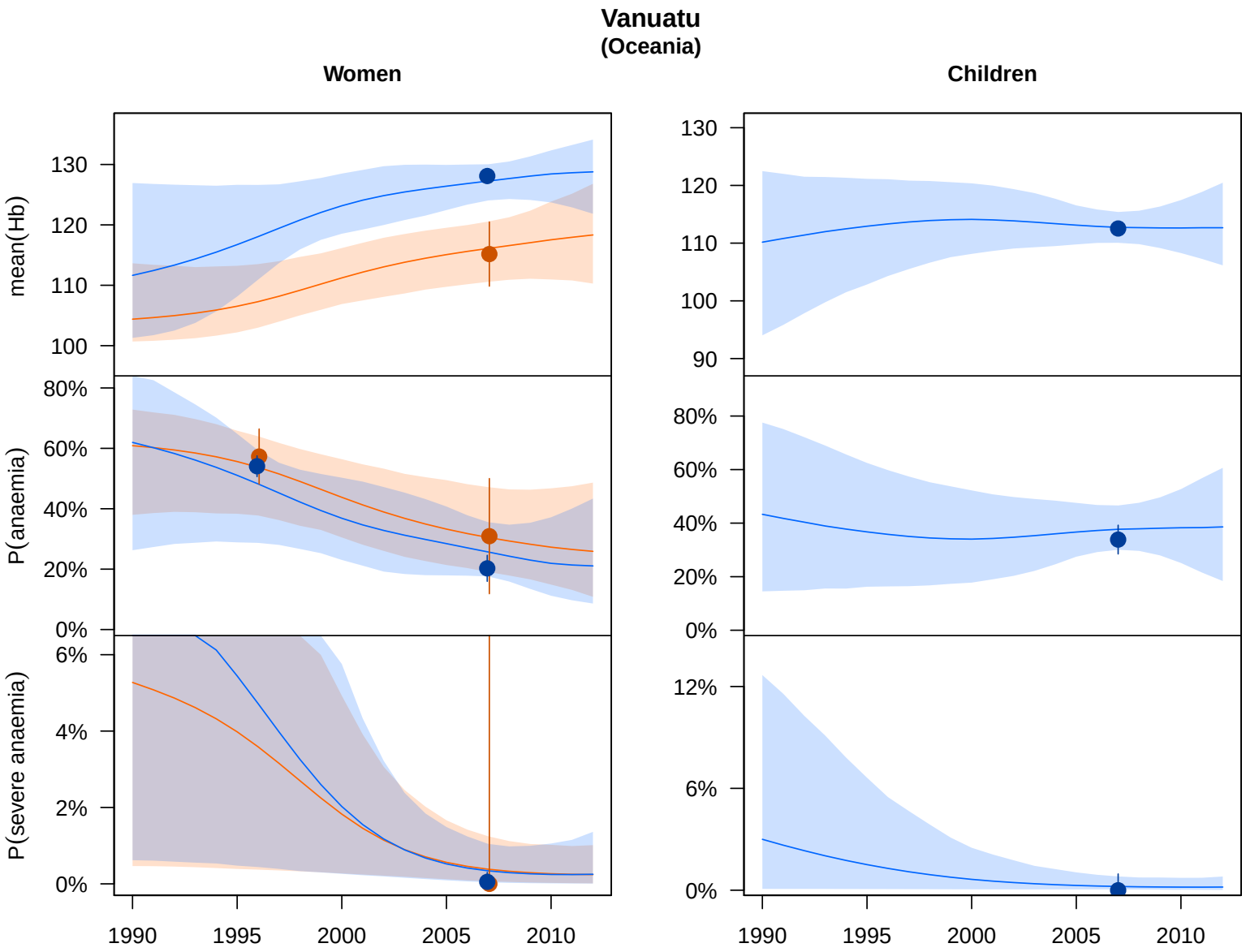

United Republic of Tanzania
(East Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


United States of America
(High Income)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010


Uruguay
(Southern and Tropical Latin America)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

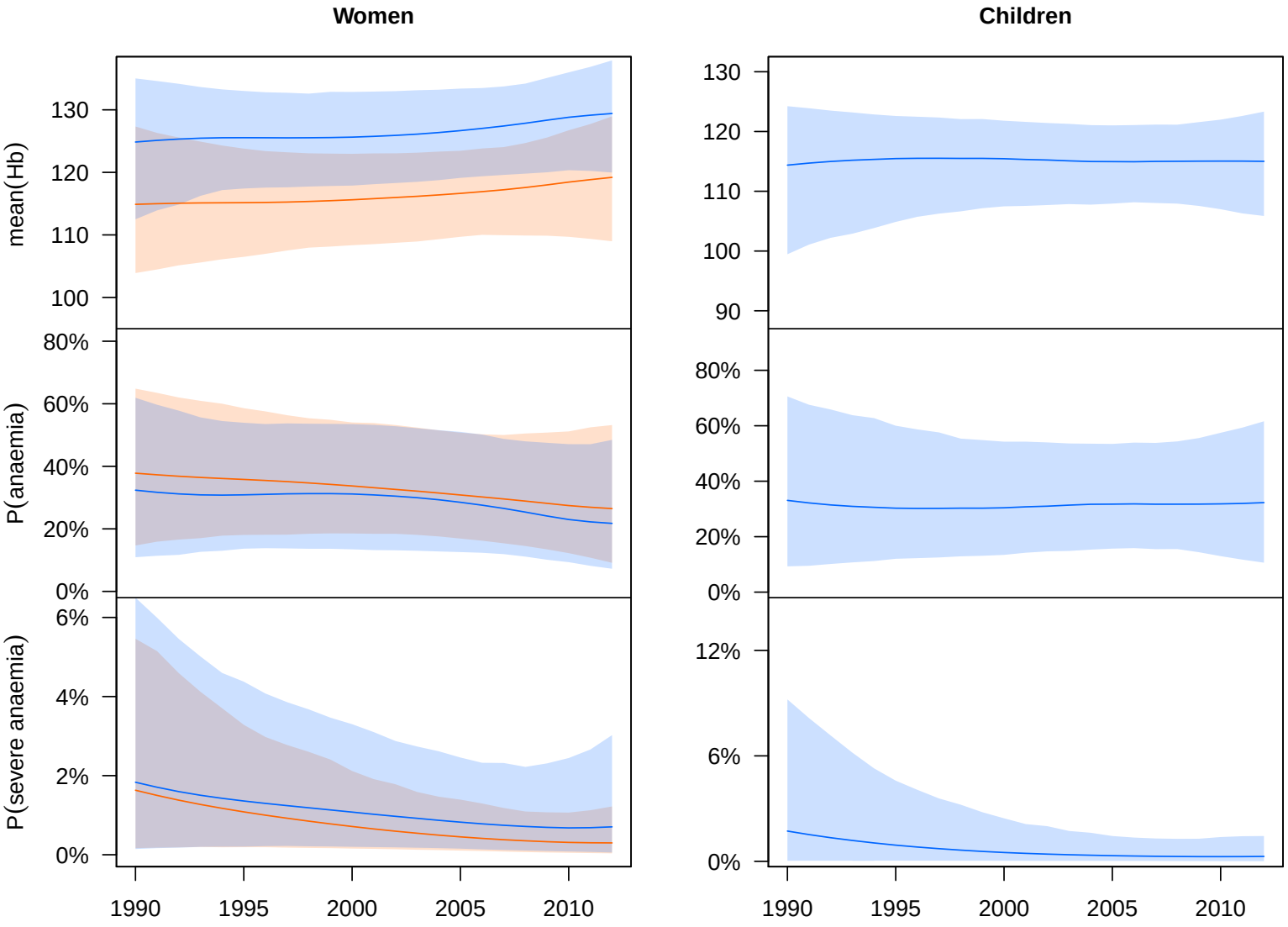
Uzbekistan
(Central Asia, Middle East, and North Africa)

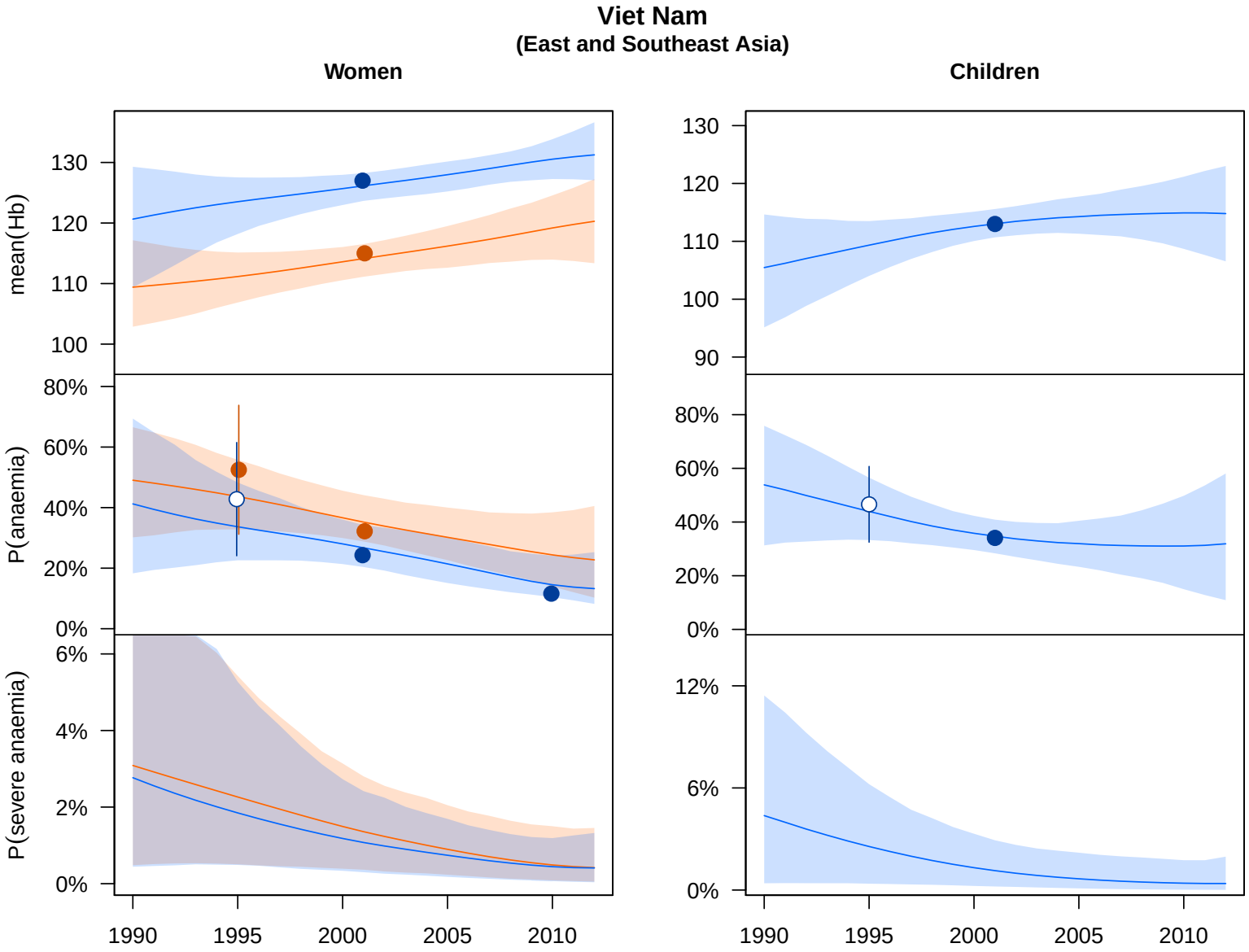



Vanuatu
(Oceania)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010

Venezuela (Bolivarian Republic of)

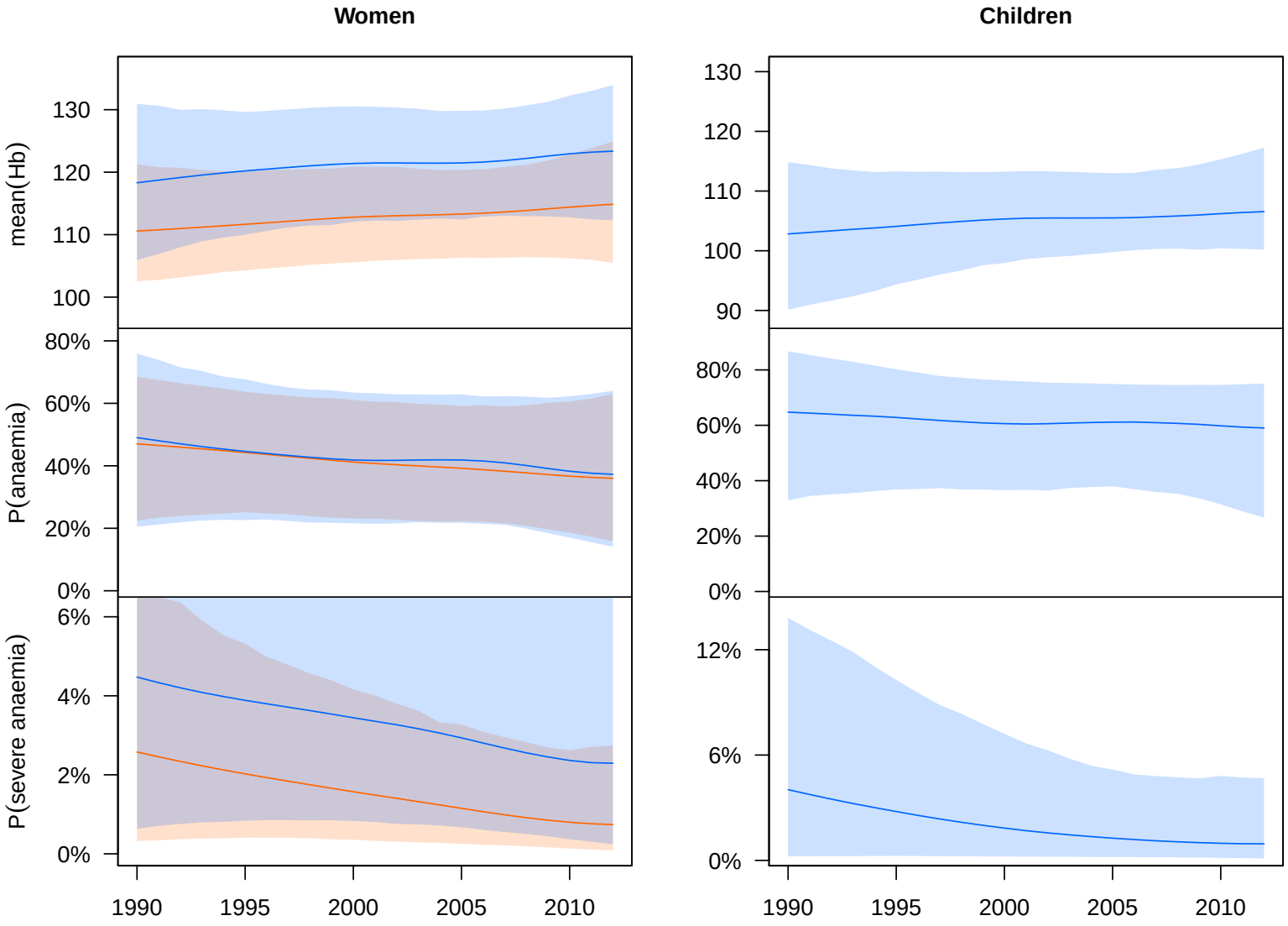
(Andean and Central Latin America and Caribbean)

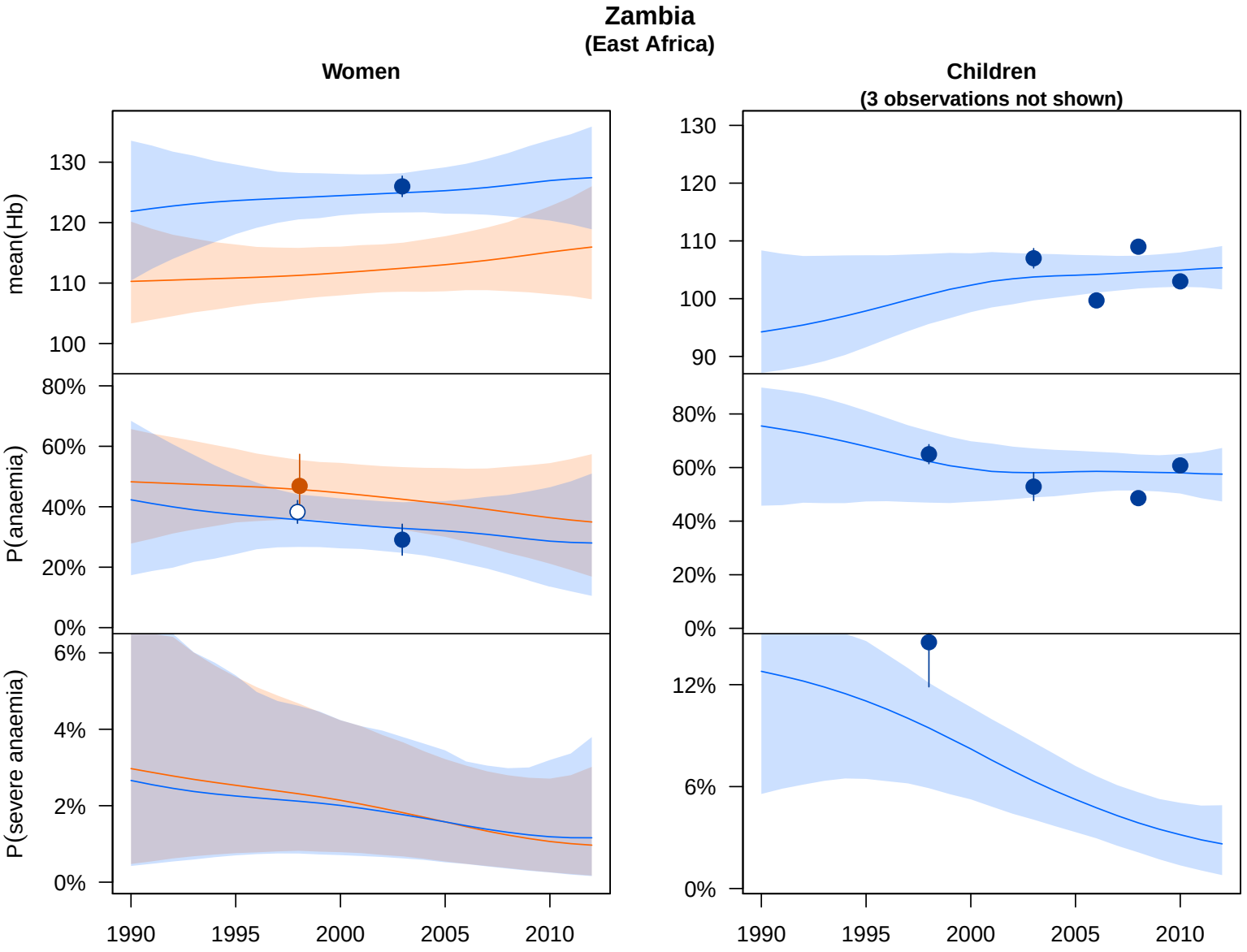


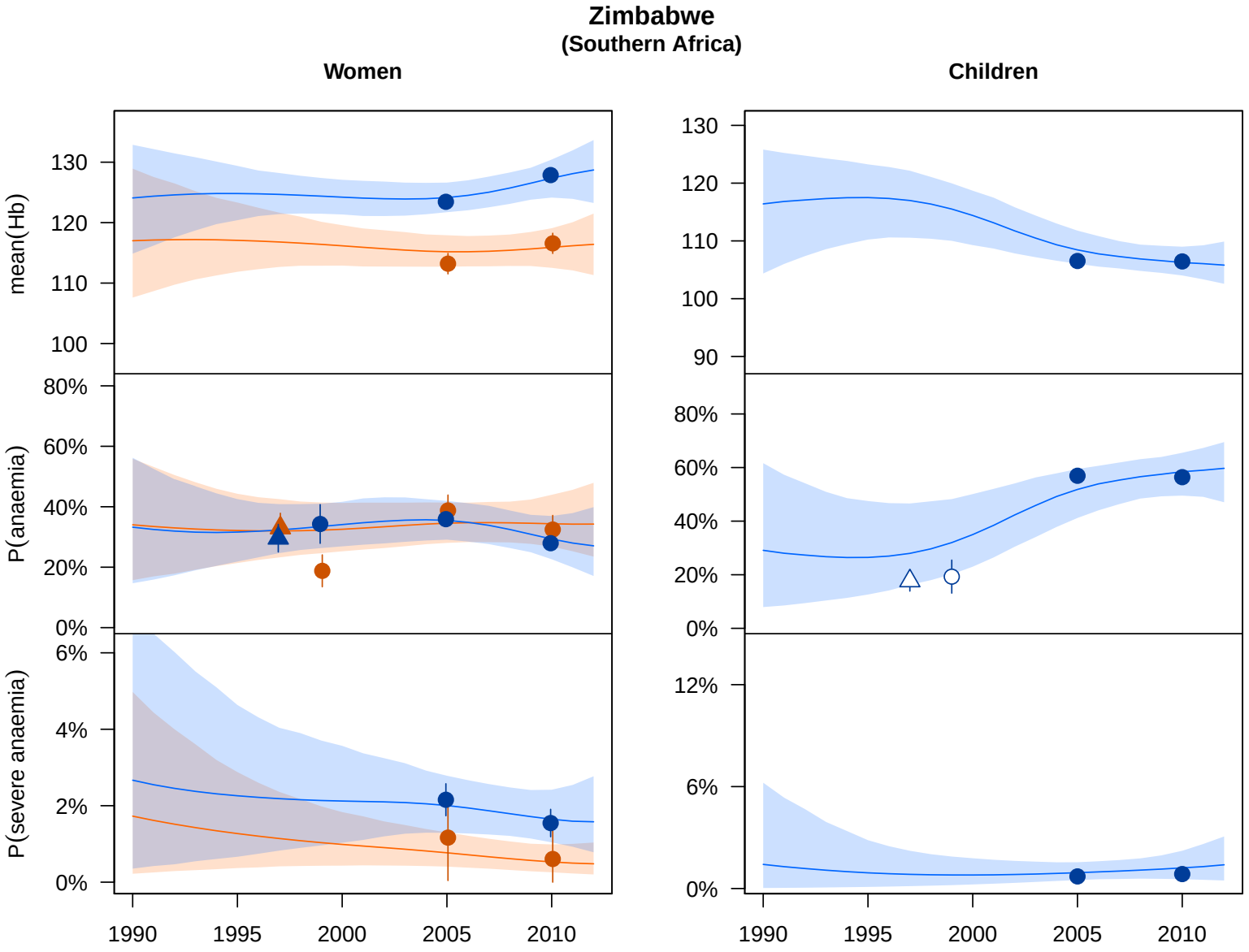

Viet Nam
(East and Southeast Asia)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
12%
6%
4%
2%
1990
1995
2000
2005
2010

Yemen

(Central Asia, Middle East, and North Africa)




Zambia
(East Africa)
Women
Children
(3 observations not shown)
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010


Zimbabwe
(Southern Africa)
Women
Children
mean(Hb)
P(anaemia)
P(severe anaemia)
130
120
110
100
90
80%
60%
40%
20%
0%
6%
4%
2%
12%
1990
1995
2000
2005
2010