We obtain the following final decomposition of the EUR PnL into four parts:

$$\begin{aligned}
P^{(A)}_{(t,T]} &= \frac{A_t + A_T}{2}\,(\chi_T - \chi_t) && (= P^{(A)}_{(t,T]}(\chi)) \\
&+ \frac{\chi_t + \chi_T}{2}\Big(\frac{A_T(r_T, x_T) - A_T(r_t, x_T)}{2} + \frac{A_t(r_T, x_t) - A_t(r_t, x_t)}{2}\Big) && (=: P^{(A)}_{(t,T]}(r)) \\
&+ \frac{\chi_t + \chi_T}{2}\Big(\frac{A_T(r_T, x_T) - A_T(r_T, x_t)}{2} + \frac{A_t(r_t, x_T) - A_t(r_t, x_t)}{2}\Big) && (=: P^{(A)}_{(t,T]}(x)) \\
&+ \frac{\chi_t + \chi_T}{2}\Big(\frac{A_T(r_T, x_t) - A_t(r_T, x_t)}{2} + \frac{A_T(r_t, x_T) - A_t(r_t, x_T)}{2}\Big). && (=: P^{(A)}_{(t,T]}(\text{carry}))
\end{aligned}$$

The interpretation of $P^{(A)}_{(t,T]}(r)$ is the following: at an arbitrary time point u the difference $A_u(r_T, x_u) - A_u(r_t, x_u)$ measures the PnL of the market price at that time that would be induced by a discounting curve change from r_t to r_T. The PnL $P^{(A)}_{(t,T]}(r)$ is defined as the arithmetic mean of this difference for the two time points $u = t$ and $u = T$. The precisely same logic applies to the interpretation of $P^{(A)}_{(t,T]}(x)$, only with r replaced by x. Finally, the PnL $P^{(A)}_{(t,T]}(\text{carry})$ intuitively should measure the change between the asset values A_t and A_T that is only due to time passing, without the effects of r and x. Since the variables r and x change their values within the period $(t, T]$, one reasonable approach is to use an "average" of the variables r, x on the period $(t, T]$. Since we only have r, x available at the two time points t and T, a pragmatic idea to accomplish such average is to mix the possible pairs (r_u, x_s) for $u, s \in \{t, T\}$ in a way that is as "neutral" as possible. This is precisely what's done in the definition of $P^{(A)}_{(t,T]}(\text{carry})$.

Remark 2.1 (On the approximative nature of our definitions)
Similar as in Remark 1.1, we point out that our definition of $P^{(A)}_{(t,T]}(r)$ and $P^{(A)}_{(t,T]}(x)$ in terms of an arithmetic average of start and end time point values is only a proxy to reality. Clearly, an average that would take into account all time points $u \in (t, T]$ would be more desirable from a theoretical perspective. For instance, based on the multivariate Itô formula, under the assumption that $\{r_u\}_{u\in(t,T]}$ and $\{x_u\}_{u\in(t,T]}$ are realizations of semi-martingales, take values in $\mathbb{R}$ (i.e. are not function-valued), and under the assumption that r and x are independent, we obtain the decomposition

$$\begin{aligned}
A_T - A_t = &\Big(\int_{(t,T]} \frac{\partial}{\partial t} A_u(r_u, x_u)\,\mathrm{d}u\Big) \\
&+ \Big(\int_{(t,T]} \frac{\partial}{\partial r} A_s(r_u, x_u)\,\mathrm{d}r_u + \frac{1}{2}\int_{(t,T]} \frac{\partial^2}{\partial r^2} A_s(r_u, x_u)\,\mathrm{d}[r, r]_u\Big) \\
&+ \Big(\int_{(t,T]} \frac{\partial}{\partial x} A_s(r_u, x_u)\,\mathrm{d}x_u + \frac{1}{2}\int_{(t,T]} \frac{\partial^2}{\partial x^2} A_s(r_u, x_u)\,\mathrm{d}[x, x]_u\Big),
\end{aligned}$$

and the three terms in (.)-brackets could be interpreted as performance due to carry, changes in r, and changes in x, respectively. While already this formula is difficult to implement in practice, we point out that typically r_u is a function (an interest rate term structure), so that a generalization in this regard requires significantly more advanced